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On behalf of the men and women in the City of Wheaton Department of Public Works, I am pleased to submit the Department’s 2015-16 Annual Report. This report will highlight the Department’s organization and key services provided, as well as quantify a sample of essential infrastructure maintenance activities and day-to-day operations performed by our dedicated staff throughout the past fiscal year for the benefit of the community.

Highlights of the 2015-16 accomplishments include:

- Reforestation of parkway trees completed the second year of a six year initiative to plant 5,000 diverse replacement trees.
- Replacement of 285 streetlight fixtures with energy efficient LED fixtures.
- Water Division continues to replace the 16,500 water meters citywide
- Fleet Services coordinated the purchase of 29 replacement fleet vehicles.

Public Works continues to utilize and improve GIS and GPS database information to run more efficient planning and operations.

On behalf of the Department, we thank the community, elected officials, City Manager, and other City Departments and their staff for their support. The City of Wheaton Department of Public Works is truly dedicated to fulfilling our mission to “…practice integrity, tolerance, and respect to enhance the quality of life for the entire community by efficient management of infrastructure and resources through innovation and best practices.”

Respectfully,

Vincent Jay G. Laoang, PE
Director of Public Works
Introduction

The City of Wheaton Public Works Department is responsible for providing public services to citizens in a variety of areas to ensure that Wheaton is a clean, safe, and enjoyable place to live. The Department is divided into five divisions in order to efficiently deliver these services: the Street Division, the Forestry Division, the Sewer Division, the Water Division, and the Fleet Maintenance Division. The Department also provides resources, heavy equipment, snow plows, barricades, pumps, generators, and manpower to help maintain public safety during responses to emergency situations.

Mission Statement

The City of Wheaton Department of Public Works pledges to practice integrity, tolerance, and respect to enhance the quality of life for the entire community by efficient management of infrastructure and resources through innovation and best practices.

Vision

To uphold and accomplish our mission with dignity, humility, and transparency so that the citizens of Wheaton and professional peers view our department as a model for premier and industry-leading municipal service.

Values

- **Teamwork**: We value our workforce and strive to ensure that they are well trained and well informed, respect our customers and fellow workers, and display commitment and professionalism.

- **Flexibility and Creativity**: We seek innovative means to accomplish our mission, vision, and goals.

- **Communication**: We practice active listening and encourage diverse points of view.
Financial Summary

The Public Works Department’s operating budget for Fiscal Year 2015-16, totaled $30,968,133 with capital improvements. The City's General Fund finances the Administration, Street, and Forestry Divisions. The Water and Sewer Divisions are funded by revenue generated from metered water sales, and the Fleet Maintenance Division is funded by various departments through vehicle rental rates.
Administration

The Public Works Department is a service-oriented team that works to maintain the standards expected by both the public and elected officials. The Administration Division oversees the administrative functions, long-range planning, and resource allocation of the Public Works Department. It also develops and submits the Department’s annual budget and report. The Administration strives to continually improve the Department through best management practices and by working towards accreditation with the American Public Works Association.

Strategic Goals

*Continually work on improving operations through identifying opportunities to enhance performance and reduce costs. Public Works is a service oriented team working to maintain the standards expected by both the public and elected officials.*

The purpose of this goal is to establish levels of service for operations, programs and projects that require ongoing maintenance, replacement and management.

*Enhance department effectiveness through the development of employee talent.*

The purpose of this goal is to take advantage of industry-provided training opportunities and skills enrichment offerings which will increase employee knowledge and skills. This will further contribute to the success of the department.
Employee Highlights
The Public Works Department has an experienced workforce to serve the City’s residents. Its 66 employees have served an average of over 16 years with the City and boast a variety of specialized skill sets. Public Works is the second-largest department in the City.

Anniversary Milestones
25 Years: Jeffery Doy & Michael Goist, Streets Division; Scott McClain, Forestry Division

20 Years: Kevin Maloney, Superintendent, Forestry Division

15 Years: David Tilsk, Brian Papenbrok, & Ryan Bustin, Sewer Division; Jon Hostetler, Gregory Gadzinski, & Enrico Bautista, Streets Division

10 Years: Heidi Atkinson, Water Division

2015-16 Transfer/Advancement
Jon Hostetler moved to Utility Locator
04/15/2016

Thank You and Farewell! - 2015-16 Retirements
Richard Hoth, Mechanic
37 Years, 6 Months

Eric Hansen, Maintenance Specialist
30 Years

Milton Faurie, Maintenance Specialist
27 Years, 8 Months

Welcome to Our Newest Employees!
In 2015-16, the Public Works Department welcomed

Forestry Division: Jose Hernandez
Sewer Division: Roberto Martinez

Employee Training Highlights
OSHA Certified
American Water Works Association
Certified Arborist
150 Years

American Water Works Association
Certified Arborist
150 Years

American Water Works Association
Certified Arborist
150 Years

American Water Works Association
Certified Arborist
150 Years
The Streets Division is responsible for a number of maintenance activities related to the City’s streets, rights-of-way, and public facilities. The City of Wheaton has 166.3 linear miles of roadways. The department also ensures compliance with regulations in all three of its sub-sections: Roadways, Signs and Lines, and Electrical.

The Roadways Section is charged with pavement maintenance, street sweeping, snow and ice control, alley maintenance, and miscellaneous waste disposal. The Signs and Lines Section installs and maintains all signs, pavement markings, and special event barricading. The Electrical Section maintains all pumps, generators, street lights, civil defense sirens, and traffic signals. The Streets Division also conducted inspections for 199 driveways in FY2016.
Roadway Maintenance

Roadway maintenance in the City of Wheaton is truly a collaborative effort between Public Works and the City’s Engineering Department. The Engineering Department evaluates and monitors the condition of the City’s infrastructure, including streets, to then plan construction and capital improvement projects. Staff takes these evaluations into consideration when prioritizing maintenance needs and determining the best approaches to them.

Maintenance Methods

These routine maintenance procedures are used to repair and prolong the life of the City’s roadways.

**Cold Patches**: Potholes are repaired year-round in response to resident complaints. The cold patch method is a temporary fix until that portion of street is scheduled for a more extensive form of repair. Each year, the Roadways Section budgets for 100 tons of cold patch material, which is used to repair up to 4,000 potholes annually. 3,649 potholes were repaired in the FY2016.

**Crackfills**: Filling or sealing cracks is important to roadway maintenance because it reduces the ability of water and other incompressible materials to enter into the pavement surface and cause accelerated deterioration. The application of hot-applied crackfill can extend pavement life from six months to four years.

**GSB Application**: GSB is a sealing agent applied to roadways after they are constructed or repaired. Treating a roadway with GSB extends the life of the pavement by reintroducing oils and resins lost to UV Rays, oxidization, temperature swings, and precipitation.

**Resurfacing/Overlay**: From early May until late fall, a major component of street maintenance includes resurfacing roads around the City, which includes milling (grinding) street segments and then repaving them with a permanent hot-mix material. The following criteria are used to prioritize the streets that are selected for resurfacing each year.

- Schedule of road resurfacing/replacement for upcoming year
- Trends and observations of past road maintenance efforts
- Location on or near City arterial, collector, or school-adjacent streets
- Conflicts with water main replacement program
- Areas identified by staff and/or residents
Pavement Condition Index (PCI)

Pro-active Pavement Management

The City uses software developed by Lucity, Inc. to help City staff manage its pavement network. The City contracted MDS Technologies, Inc to update the pavement inspection data in Lucity and to use that data to calculate an appropriate long-term budget for roadway maintenance. This analysis is done by assigning and using PCI scores that range from 100 (excellent condition) to 0 (serious/failed condition) for each segment of roadway. The average PCI score for the City’s roads in summer 2015 was 61.8. This score falls within the “fair” category.

MDS Technologies' budget evaluation indicated that funding above the original estimate of $2.52 million would be needed to maintain the road network’s current condition while also beginning to address the reconstruction backlog. Reconstruction is one of the few effective ways to address pavement that falls in the Serious/Failed category. The City Council added an additional $1,000,000 to the annual road program to address the reconstruction backlog.

Below is a table reflecting the shift in the City's in-house Roadways Maintenance Program to best maintain or increase the condition of the City’s roadway.

<table>
<thead>
<tr>
<th>Year</th>
<th>Asphalt (Tons)</th>
<th>SY</th>
<th>Miles</th>
<th>Repair Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY2014</td>
<td>1360</td>
<td>11,968</td>
<td>0.34</td>
<td>Patching</td>
</tr>
<tr>
<td>FY2015</td>
<td>3537</td>
<td>31,122</td>
<td>2.21</td>
<td>Patching</td>
</tr>
<tr>
<td>FY2016</td>
<td>3820</td>
<td>33,234</td>
<td>3.90</td>
<td>Overlay</td>
</tr>
<tr>
<td></td>
<td>1551</td>
<td>13,494</td>
<td>1.90</td>
<td>Patching</td>
</tr>
</tbody>
</table>
Street Sweeping

All City streets are swept monthly between May and September to control litter, leaves, and any environmental contaminants found in the gutter line. The streets are swept two to three times each month during the fall to prevent leaves from building up in the street and during early spring to remove debris buildup caused by snow removal efforts in the winter. The division maintains an aggressive vacuum sweeping program to ensure 10,000 miles are swept each year. Street sweeping serves three important functions:

- Removes leaves and tree debris that naturally fall into the public right-of-way.
- Improves water quality by reducing the pollutants that accumulate in the street and infiltrate stormwater; staff's 10,000 mile goal is a best management practice detailed in the City's NPDES permit for stormwater discharges.
- Improves the appearance of streets and parking lots and contributes to the overall appearance of the City.

The City's two mechanical sweepers perform all regularly scheduled street sweeping, while the vacuum sweeper is used primarily to clear millings during pavement resurfacing and reconstruction.

### Annual Miles Swept

<table>
<thead>
<tr>
<th></th>
<th>FY2013</th>
<th>FY2014</th>
<th>FY2015</th>
<th>FY2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Miles Swept</td>
<td>11,453</td>
<td>9,075</td>
<td>10,248</td>
<td>14,614</td>
</tr>
</tbody>
</table>

Goal - 10,000
Snow and Ice Control

Snow removal is a major function of the Public Works Department. The Street Superintendent and four supervisors from the Streets, Sewer, and Forestry divisions coordinate to ensure that snow is efficiently removed from the roadways, parking lots, sidewalks, and facilities. If necessary, this may also be accomplished with assistance from private contractors. There are 15 plow routes that, when needed, are manned 24 hours a day in two 12-hour shifts.

In FY2016 the Division responded to 16 snow events that produced a total of 28.5 inches of snow. A total of 1,827.2 tons of treated salt was used on the City’s streets. Staff has been trained in and implemented several salt reduction practices. Staff annually calibrates vehicle salt spreaders to for efficient distribution. Staff mixes salt with a beet juice-based anti-icing solution that increases the salt’s effectiveness, thereby allowing Staff to use less salt overall. Staff also produced salt brine with the City’s on-site brine making system. When combined with the beet juice-based anti-icing solution and calcium chloride, the salt brine was transformed into 11,081 gallons of a “Super-Mix” anti-icing solution.

<table>
<thead>
<tr>
<th>Snow Events &amp; Precipitation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong># of Events</strong></td>
</tr>
<tr>
<td>FY2012</td>
</tr>
<tr>
<td>FY2013</td>
</tr>
<tr>
<td>FY2014</td>
</tr>
<tr>
<td>FY2015</td>
</tr>
<tr>
<td>FY2016</td>
</tr>
<tr>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>

**Salt (Tons)**

- FY2012: 2,360
- FY2013: 2,800
- FY2014: 3,205
- FY2015: 2,630
- FY2016: 1,827

**# of Events**

- FY2012: 13
- FY2013: 23
- FY2014: 45
- FY2015: 22
- FY2016: 16

**Inches of Snow**

- FY2012: 19.5
- FY2013: 27.5
- FY2014: 75.7
- FY2015: 39.7
- FY2016: 28.5
Signs and Lines

Staff maintains more than 10,479 roadway signs, 78 miles of traffic lines, and more than 1,916 pavement markings in compliance with Federal Highway Administration (FHWA) regulations, which are largely outlined in the Manual on Uniform Traffic Control Devices.

Signs

The City’s 10,479 signs include roughly 6,136 regulatory signs, 1,465 warning signs, 2,215 guide signs, 492 school signs, and 171 general information signs. Maintenance includes the design, fabrication, installation, assessment of condition and reflectivity, and removal of roadway signs. In response to FHWA regulations, requiring all municipalities develop a sign maintenance plan that maintains the minimum requirements for sign retroreflectivity. Staff has implemented a 15 year sign replacement program; 680 signs will be replaced annually. During FY2016, a mild winter allowed Staff to allocate additional resources towards this program.

Pavement Markings and Striping

Pavement markings are currently contracted out by Staff. Pavement markings include arrows, stop bars, crosswalks, handicap parking, and text that are applied to the roadway. Pavement markings utilize a durable, high-visibility, retroreflective, and MUTCD compliant thermoplastic. Pavement markings that are not in the downtown area are inventoried into four quadrants. These quadrants are repainted on a four year cycle with one quadrant addressed each year. Pavement markings in the downtown area are repainted on a two year cycle with half the markings repainted annually; higher levels of traffic in the downtown area results in accelerated marking degradation.

Striping includes roadway edge lines, lane lines, parking spaces, turning lanes, and centerlines. Striping utilizes a water-based, retroreflective latex paint. The City’s roadway striping is replaced on a two year cycle with half of all markings repainted annually.
Sidewalk Replacement Program

The City of Wheaton is responsible for the maintenance and replacement of public sidewalks. The City systematically surveys public sidewalks to identify defective and deteriorated sections that create a potential hazard. Sidewalk surveys are based on logical geographic areas to determine which portions are to be replaced. Failed sections of sidewalk are replaced by the City’s sidewalk concrete contractor.
Electrical Services

Staff maintains 2,819 street lights, nine civil defense and weather sirens, traffic signals at 14 intersections, six school zone warning flashers, and the electrical components of 19 emergency generators and transfer switches. Staff is also responsible for replacing faulty underground cable, repairing controller issues, repairing damaged or knocked down streetlights, and performing monthly testing of the City’s generators, pumps, and civil defense sirens.

Streetlights

In FY2016, Electrical Services re-lamped 395 streetlights, replaced 9 streetlight fixtures, and replaced 15 streetlight poles that were knocked down.

JULIE Locates

Performing JULIE (Joint Utility Locating Information for Excavators) locates is an essential customer service function. Locates are undertaken by Electrical with assistance from both Water and Sewer. When area residents or service providers plan to dig in Wheaton, they are required to call JULIE.

Staff responded to 12,294 JULIE requests by locating and marking underground utility facilities before an excavator, utility worker, or property owner commenced excavation or other digging activities. The quantity of locates performed are dependent on construction activity throughout the year. A steady increase has occurred in the past 3 year years due to Ash tree removals, reforestation efforts, utility improvements, and an increase in building permits.
Infrastructure Improvements

**LED Street Lights**
High-pressure sodium streetlights in Wheaton neighborhoods were evaluated to be at the end of their lifespan and replacement parts for these lights could no longer be sourced. It was determined these streetlights would be replaced with more efficient, longer-lasting LED street lights. After two community surveys, one in August 2014 and one in February 2015, it was discovered the majority of residents would prefer street lights with a silver light pole and a black light fixture (*image below*). Phase One of this project occurred in FY2016 and required $407,146.54 of the project’s $863,085.54 budget. This phase of the project was budgeted for $321,000 and a $25,000 grant was secured from the Illinois Clean Energy Community Foundation.

![Wattage Reduction 118 to 40](image)

![Energy Savings of over 55%](image)

**Guard Rail Replacements**
Guardrails along or near the City roadways exist as a barrier between vehicles and the surrounding environment. Staff replaced the guardrail on Woodlawn St. over Springbrook Creek. This wooden guardrail was rotting and no longer in compliance with IDOT standards. Staff sourced and installed a compliant metal guardrail to address this.

![Before](image)

![After](image)
Forestry Division

The Forestry Division’s staff of certified arborists and horticulturalists take pride in keeping Wheaton a safe and attractive place to live despite severe storm seasons and drought conditions. The Forestry Division has two sections, Forestry and Parks and Grounds. The Forestry Section maintains more than 17,737 trees in the City rights-of-way by planting, trimming, and removing them. The responsibilities of the Parks and Grounds Section include mowing more than 27 acres of parks, rights-of-way, and open spaces; maintaining more than 18,000 plants each year by dead-heading, weeding, and watering them; and responding to storm-damaged trees. In the Central Business District Forestry maintains over 70 seasonal flower pots and installs banners several times each year to mark and promote special events. During the holidays, the Division decorates poles throughout the City while overseeing the contracted installation of tree lighting.
Tree Removal
Staff removed 311 trees in FY2016. All of these trees were removed due to being dead or diseased. Up until this year, the Division had also been removing Ash trees in an effort to manage the Emerald Ash Borer infestation.

Tree Pruning
Currently, Forestry has 4 ISA certified arborists on staff to ensure that proper care is provided for all of the City’s trees.

Staff pruned 2,315 trees in FY2016. While 910 of the trees were pruned on request, 1,405 trees were addressed through a cyclical pruning cycle. Pruning parkway trees is an essential safety function performed by Staff. In order to give trees the greatest chance of survival, it is the goal of the Forestry Division to inspect and prune all City-owned trees on a seven-year trim cycle. Routine pruning promotes proper growth habits and future development of the tree. By adhering to a pruning cycle, Staff will be able to prune the trees in conformance with current ordinances without removing larger limbs. In addition, the pruning cycle allows Forestry crews to more effectively monitor the City’s tree inventory.
Spotlight: Reforestation Progress

As of December 31, 2015 there are approximately 294 Ash trees remaining. These trees may have been treated by the property owner or considered healthy and will be monitored to determine if removal is warranted. Since FY2009 Staff has removed 1,195 and contracted the removal of 5,044 Ash trees; totaling 6,239 trees. The contractors also removed 4,038 Ash tree stumps in FY2016. These stumps were the last remaining pieces of the Ash trees removed due to the Emerald Ash Borer infestation.

Approximately 285 tree plantings are scheduled for the spring and fall of 2016. Replacements are planned for the majority of Ash trees removed. Exceptions include any tree replacement that would violate the City’s Municipal Code related to spacing limitations, traffic/vision obstructions or conflicts with various utilities.

Reforestation is achieved through the Ash Tree Replacement Program, Shared Cost Parkway Tree Replacement Program, and Permitted Parkway Tree Planting on Public R-O-W. Under these programs a total of 1,007 trees were planted in FY2016. Due to the remaining Ash tree removals this resulted in a net gain of 829 trees from FY2015. A primary goal of reforestation is to increase tree diversity. The Simpson Diversity Index is a method to calculate biodiversity based on the number of species present and their total population. This index shows that Staff has raised Wheaton’s tree diversity index from .712 to .737, resulting in a 3.5% increase in tree biodiversity from FY2015 to FY2016.
Forestry Division

Parks and Grounds
Staff maintains and enhances City owned properties to be aesthetically pleasing in addition to 24.6 acres, or 1,072,504 square yards, of open space and public rights-of-way, including the Central Business District and Adams Park. Crews also monitor and maintain streetscape inventory.

Commuter Lots 9 & 10 Improvements
During the 2015-16 fiscal year Staff was responsible for landscape improvements to commuter lots 9 & 10.

Adams Park Gazebo Restoration
Staff restored the frame of the Adams Park Gazebo. The original’s iconic roof still remains.

Gone Away Footbridge
Staff reinforced the footbridge’s fencing to ensure the safe passage of pedestrians crossing over Spring Brook River.
Sewer Division

The Sewer Division is responsible for providing uninterrupted service to all residents served by the City’s sanitary and storm sewer systems via proactive maintenance and repair programs. These services are maintained through investigation, inspection, evaluation, and analysis of the systems’ long- and short-term needs. New methods and technologies are continually evaluated and implemented to accomplish the Division’s maintenance, repair, and response goals and to provide excellent service to the City’s residents. The Division maintains 168 miles of sanitary sewer, 184 miles of storm sewer, more than 160 retention ponds, six lift stations, 5,870 catch basins, and 6 miles of creek channel. The Division performs primary maintenance of the creek channels within the City limits. In conjunction with the road program, the Division also inspects, repairs, and replaces manholes. Sewer personnel assist with snow removal operations, storm events, and other cross-divisional functions as needed.
Sanitary Sewer Maintenance

More than 168 miles of sanitary sewers in the City of Wheaton carry wastewater from bathrooms, sinks, kitchens, and other plumbing fixtures to a wastewater treatment plant, where it is filtered and released. Staff provides proactive and emergency maintenance to the sewer system with the goals of maintaining its capacity, providing uninterrupted service, and reducing sanitary sewer overflows, as outlined in the Division's EPA-mandated Capacity, Management, Operation, and Maintenance (CMOM) plan. Staff regularly cleans the sewer pipes to prevent buildup and inspects them for defects with closed circuit television equipment. The annual cleaning goal of sanitary sewers is 27% of the total pipe system. The annual televised inspection goal of sanitary sewer lines is 6.8% of the total system. The City's televised inspection equipment was replaced this year due to a generator failure. Due to the long lead time in procuring a replacement, televised inspections could not take place between October and January.

<table>
<thead>
<tr>
<th>Year</th>
<th>Sanitary Sewer Cleaning (Feet)</th>
<th>Goal - 27% Total System</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>144,560</td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td>197,466</td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td>119,465</td>
<td></td>
</tr>
<tr>
<td>FY2015</td>
<td>152,461</td>
<td></td>
</tr>
<tr>
<td>FY2016</td>
<td>214,828</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>Sanitary Sewer Televised Inspection (Feet)</th>
<th>Goal - 6.8% Total System</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>71,612</td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td>74,426</td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td>81,555</td>
<td></td>
</tr>
<tr>
<td>FY2015</td>
<td>43,652</td>
<td></td>
</tr>
<tr>
<td>FY2016</td>
<td>13,082</td>
<td></td>
</tr>
</tbody>
</table>
**Storm Sewer Maintenance**

Storm sewers carry unfiltered rainfall runoff and drainage from storm drains to local streams, rivers, and other bodies of water. Staff maintains 184 miles of storm sewers by regularly cleaning the pipes to prevent buildup and inspecting them for defects with closed circuit television equipment. The annual cleaning goal of storm sewers is 15% of the total pipe system. The annual televised inspection goal of sanitary sewer lines is 6.8% of the total system.

![Storm Sewer Cleaning](image1)

<table>
<thead>
<tr>
<th>Year</th>
<th>Cleaning (Feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>130,757</td>
</tr>
<tr>
<td>2012</td>
<td>86,455</td>
</tr>
<tr>
<td>2013</td>
<td>81,683</td>
</tr>
<tr>
<td>2014-15</td>
<td>188,023</td>
</tr>
<tr>
<td>2015-16</td>
<td>112,672</td>
</tr>
</tbody>
</table>

**Storm Sewer Televised Inspection**

<table>
<thead>
<tr>
<th>Year</th>
<th>Televised Inspection (Feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>17,603</td>
</tr>
<tr>
<td>2012</td>
<td>16,931</td>
</tr>
<tr>
<td>2013</td>
<td>13,607</td>
</tr>
<tr>
<td>2014-15</td>
<td>24,988</td>
</tr>
<tr>
<td>2015-16</td>
<td>5,501</td>
</tr>
</tbody>
</table>
Catch Basins

Catch basins are inlets located at the opening of a storm drain to collect and prevent debris and sediment from traveling into storm sewers with rainfall runoff and other drainage. Staff maintains approximately 5,870 catch basins through regular cleaning, repairing and replacing them when necessary. Staff’s yearly cleaning goal is 1,785 catch basins. Of this goal, 425 account for basins that must be cleaned once per year and 1,360 account for the remaining basins on a four year cleaning schedule. The four year cleaning schedule addresses 5,445 catch basins, that need to be cleaned at least once every four years. In FY2016, Staff cleaned 1,999 basins, repaired 141 basins, and replaced 16 basins.

**Catch Basins Cleaning**

<table>
<thead>
<tr>
<th>Year</th>
<th>Catch Basins Cleaned</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>1452</td>
</tr>
<tr>
<td>2012</td>
<td>2087</td>
</tr>
<tr>
<td>2013</td>
<td>1466</td>
</tr>
<tr>
<td>2014-15</td>
<td>1895</td>
</tr>
<tr>
<td>2015-16</td>
<td>1999</td>
</tr>
</tbody>
</table>

Goal - 1785
Infrastructure Improvements

Elm & Blanchard Lift Station
The Elm and Blanchard lift station was installed in the early 1970s to provide sewer service when the area was developed. Several changes have been made to this station over the years: a third pump and additional 10” force main was added in 1976, and the station was converted to a submersible two pump station in 1990. In the spring of 2013 one of the station’s pumps failed. Due to the lack of return and high cost of repairing the pump the decision was made to procure a new modern pump and upgrade the lift station. Upgrades to the station addressed safety, mechanical, electrical, control, and hydraulic deficiencies that would have been present when connecting it to new, modern pumps.

Sewer Structure Replacement
Staff and contractors are responsible for replacing sewer structures. Replacements occur as needed or are scheduled during certain phases of other projects when these structures will be readily accessible. These structures include catch basins, manholes, sewer piping, and sewer lining.

<table>
<thead>
<tr>
<th>Structure</th>
<th>Sewer Division</th>
<th>Contractor</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sanitary Manhole</td>
<td>3</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Storm Manhole</td>
<td></td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Catch Basin</td>
<td>16</td>
<td>49</td>
<td>65</td>
</tr>
<tr>
<td>Storm Sewer Pipe</td>
<td></td>
<td>370’</td>
<td>370’</td>
</tr>
<tr>
<td>Sanitary Sewer Lining</td>
<td></td>
<td>5740’</td>
<td>5740’</td>
</tr>
<tr>
<td>Storm Sewer Lining</td>
<td></td>
<td>4000’</td>
<td>4000’</td>
</tr>
</tbody>
</table>
Water Division

The Water Division ensures the reliable operation of the City’s waterworks system and provides a high-quality supply of drinking water at sufficient pressure and affordable prices. This is done by balancing cost-effective services with sound environmental responsibility. The Water Division is responsible for the operation, maintenance, and repair of City-owned waterworks infrastructure, as well as the supply, treatment, storage, distribution, and testing of the drinking water. The City supplies an average of 4.5 million gallons of water per day to Wheaton's 56,000 residents, businesses, and visitors.

The Water Division staff is available 24 hours a day, 7 days a week for emergency response to water main breaks, emergency utility locates, and any other water-related emergencies.

Water Quality

The Water Division must meet specific guidelines for drinking water quality as established by the United States and Illinois Environmental Protection Agencies (EPA) and the Safe Drinking Water Act (SDWA). In 2015, the Division collected 720 Coliform samples, 16 Stage II Disinfectant By-Product Rule samples, 78 Entry Point Water Quality samples, and 40 Distribution Water Quality samples from the distribution system. We also collected 72 Coliform samples, 6 sets of Volatile Organic Compound samples, 6 sets of Synthetic Organic Compound samples, 6 sets of Nitrate and Nitrite samples, 1 set of Inorganic Compound samples, and 1 set of Radionuclide samples from the emergency backup wells. All samples collected met or exceeded all state and federal standards for water quality as regulated by the EPA and the SDWA.
Water Distribution

Staff are responsible for the maintenance and repair of the water distribution system. There are approximately 228.5 miles of water main, 2,600 fire hydrants, and 3,100 valves in the system. In FY2016, the Division inspected and exercised 1,149 valves, replaced 4 valves, inspected 1,066 fire hydrants, and replaced 5 fire hydrants.

<table>
<thead>
<tr>
<th>Preventative Maintenance of Water Distribution System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valves Inspected: 1035</td>
</tr>
<tr>
<td>Fire Hydrants Inspected: 557</td>
</tr>
</tbody>
</table>

In addition to the mechanical maintenance of valves and hydrants, staff is also responsible for mains and service locates, B Box locates and checks, the painting of hydrants, water inspections, and replacing curb stops.

<table>
<thead>
<tr>
<th>Services</th>
<th>FY2015</th>
<th>FY2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Curb Stops Replaced</td>
<td>87</td>
<td>58</td>
</tr>
<tr>
<td>B Boxes Replaced</td>
<td>91</td>
<td>63</td>
</tr>
<tr>
<td>B Box Locate &amp; Check</td>
<td>1051</td>
<td>1193</td>
</tr>
<tr>
<td>Water Inspections</td>
<td>115</td>
<td>129</td>
</tr>
<tr>
<td>Hydrants Painted</td>
<td>411</td>
<td>301</td>
</tr>
<tr>
<td>Mains and Service Locates</td>
<td>573</td>
<td>1995</td>
</tr>
</tbody>
</table>
Water Main Breaks

Staff repaired 36 water main breaks in FY2016, which was a 37 percent decrease from the number of mains repaired in 2014.

Pumping and Storage

Staff are responsible for the operation and maintenance of the pumping and storage system. Staff maintains two elevated tanks that hold three million gallons of water, five ground storage reservoirs that hold 4.27 million gallons, three pump stations with 21 high-service pumps, six emergency backup wells, and three standby electrical generators. Staff also performs monthly testing, preventative maintenance, and repairs on this equipment. In FY2016, a total of 1,628,886,000 gallons of metered water was pumped through the system.
Infrastructure Improvements

Meter Replacement Program

Staff maintains, tests, repairs, replaces, and reads over 16,000 water meters. In 2014 Staff began replacing residential water meters as part of its multi-year replacement plan. In FY2016, a total of 2,495 meters were replaced and 57 new meters installed. A total of 4,606 meters have been replaced through the program, leaving 11,799 to be addressed. The water meters transmit data via radio signals that can be received by the City’s laptop computers as Staff drive along City streets. The data is then processed for billing.

Water Meter Replacement Program

<table>
<thead>
<tr>
<th>Year</th>
<th>Water Main Replaced (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>1,989</td>
</tr>
<tr>
<td>FY2016</td>
<td>2,552</td>
</tr>
<tr>
<td>Remaining</td>
<td>11,799</td>
</tr>
</tbody>
</table>

Water Mains Replaced

Water mains are most often replaced during certain phases of other projects when the pipes are readily accessible. As part of the 2016 Road Program, 1,205’ of water main was replaced.

<table>
<thead>
<tr>
<th>Year</th>
<th>Water Main Replaced (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>6,150’</td>
</tr>
<tr>
<td>2016</td>
<td>1,205’</td>
</tr>
</tbody>
</table>
Fleet Services Division

The Fleet Services Division is charged with providing a centralized storage, maintenance, repair, and fueling facility for all City-owned vehicles and equipment. Fleet Services maintains 159 licensed vehicles, 92 large pieces of primary and ancillary equipment, including 17 stationary power generators, and 128 smaller pieces of ancillary equipment. The ancillary equipment includes salt spreaders, snow plows, de-icing equipment, mowers, asphalt pavers, and rollers, among other items.

In addition to repairing and maintaining vehicles, equipment, facility and standby generators, Fleet Services provides a turn-key benefit to user departments through specifying and acquiring replacement vehicles and equipment on a schedule that is financially beneficial to the City as a whole. Fleet Services is also responsible for disposing of retired assets in the most advantageous way based on circumstances. Furthermore, a central parts and supplies inventory is procured, maintained, inventoried, and dispersed by Fleet Division personnel for the benefit of all City Departments and Divisions. The Division consistently provides high-quality fleet service to all departments.

Division staff maintain specialty certifications in the areas of ASE, EVT, State of Illinois UST. Staff also ensures safety certifications for Fire Department vehicles pertaining to NFPA standards for pump, generator, and aerial equipment function and inspection, Public Works aerial equipment, Fleet facility hoists and cranes.
Repair and Maintenance Activities

Staff spent 7,940 hours on mechanical jobs on City vehicles and equipment in FY2016. The majority of mechanical jobs addressed Public Works equipment with the remaining addressing Police, Fire, and other equipment in that order. The majority of Staff's labor was dedicated to Public Works equipment with the remainder dedicated to Fire, Police, and other equipment.

Preventative & Non-Preventative Maintenance

To ensure the continued operation of City vehicles, Staff performs both preventative and non-preventative maintenance on City vehicles and equipment. In FY2016 Staff updated preventative maintenance schedules based on manufacturer specific recommendations. Staff performed 6,036 hours of non-preventative maintenance and 1,904 hours on preventative maintenance in FY2016.

Vehicle Acquisition

In FY2016 Staff acquired 29 vehicles in accordance with the Fleet Management Vehicle Replacement Guidelines.

Snow Preparation—Fleet

Staff are performing a cost and performance analysis of snow plow design and cutting edges. Staff will determine if switching to a different system or edge material will achieve a cost savings or operational benefit. Significant labor and down time savings can be achieved with a longer lasting design. This analysis should be completed during FY2017. Additionally, Staff evaluate and maintain snow equipment in the off season; preparing it for reinstallation during the months of September and October.
Recycling & Emissions

Recycling
Several Public Works divisions collect and recycle scrap materials generated from routine work. This is an environmentally conscious practice and delivers the maximum return on scrap material. Public Works recycled the following in FY2016: 72,355 LBs of various scrap metal, 1,525 gallons of used oil, 84 batteries, and 67 tires. Recycling these materials recovered $15,044.

Fuel Consumption
The City’s 159 licensed vehicles used 113,561 gallons of fuel in FY 2015-16 at an average cost of $1.80 per gallon of gas and $1.79 per gallon of diesel. Wheaton implemented a Green Fleet policy in 2012 with the goal of reducing the carbon footprint of its vehicles over time. In FY2016, City vehicles logged 939,471 miles and 26,214 fleet engine hours, which were 1% and 2.5% lower, respectively, than the miles and hours logged in FY2015. Additionally, 22% less bio-diesel fuel and 12% less gasoline in FY2016 than in FY2015. Overall, the City released 17% fewer metric tons of carbon dioxide than it did in FY2015. The chart below shows the City’s total greenhouse gas emissions for the past seven years.
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