

Department of Public Works

2015 Annual Report

2015 Facts & Figures

Field Employee Data:

- *Total years of service: 304*
- *Average years of service: 16*
- *Average age: 49*

Conferences & Training

- *WI Rural Water*
- *WI APWA*
- *WI Arborist Association*
- *Public Works Management Institute*
- *MMSD Inspection & CMOM*
- *APWA Snowplow ROADeo*
- *DNR Chainsaw Safety*
- *Street Sweeper operation and maintenance*

Welcome

- Joel Kolste joined the Department as Assistant Director in July. Joel brings great municipal and construction experience to our team. Welcome Joel!

Best Wishes

- Paul Wasemiller, Assistant Director, retired after 30 years of service to the Village of Shorewood.
- Wayne Okray, Utility Operator II, began the next chapter of his career with the Germantown Sewer Utility.

Notables

- Dave Best, Fleet & Facilities Foreman, completed his coursework and was awarded the Public Works Management Institute Certificate from the American Public Works Association. Dave is the first member of Shorewood's DPW staff ever to earn this accreditation.
- Congratulations to Route Collector Kyle Pinzer and the Shorewood DPW team for their great finish at the 26th annual American Public Works Association Wisconsin Chapter Snow Plow Roadeo. Since 1989 the chapter has sponsored the ROADeo, an obstacle course competition to test operators' driving and mechanical skills. Shorewood placed three operators in the top 35 (of a 100+ driver field) with Kyle placing 6th – our best finish ever!



Shorewood 2015 APWA Snow Plow ROADeo participants: (left to right): Matt Streim, Mechanic; Kyle Pinzer, Route Collector; Dan Hetzel, Route Collector; Trevor Robishaw, Forester.

2015 Facts & Figures

Major Capital Projects:

- 2015 Watermain Relay \$223,170
- Road Resurfacing Program \$106,248
- Annual PPII Reduction/Lateral Lining Program \$140,549
- Annual Mainline Sewer Lining Program \$182,176
- Sidewalk Program \$311,677
- Atwater Playground Equipment \$100,000

Metrics

Key measures of DPW and Utility operations are featured on the pages that follow. Please note that where a figure is followed by an arrow symbol, the intent is to quickly illustrate the change from 2014 to 2015, either increase (↑) or decrease (↓).

Operational Highlights

Odd calendar years generally have a smaller, but very diverse schedule of infrastructure projects; 2015 was no exception.



The Utility staff, led by Foreman Scott Bohm, did a significant amount of work preparing the base area for the new Atwater playground equipment.



A stormwater best practices grant from MMSD funded the installation of a rainwater collection system at the DPW. The system, designed by Fleet & Facilities Foreman Dave Best, can capture and store up to 10,000 gallons of rainwater for use in the maintenance of park and business district plantings and forestry operations.

2015 Facts & Figures

Total Refuse:
2,559 tons ↓

Average refuse disposed per Shorewood resident:
388.9 pounds ↓
(decrease of 8.1 pounds over 2014)

Labor Hours:
3,152 ↓

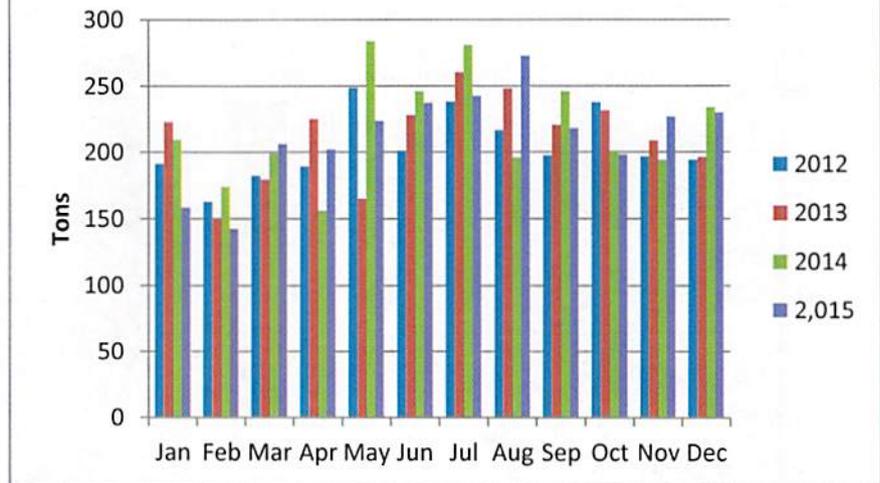
Contracted per ton disposal cost:
\$44.43 ↑

Total Recycling:
1,241 tons ↓

Material recycled per Shorewood resident:
188.6 pounds ↓
(decrease of 3.4 pounds from 2014)

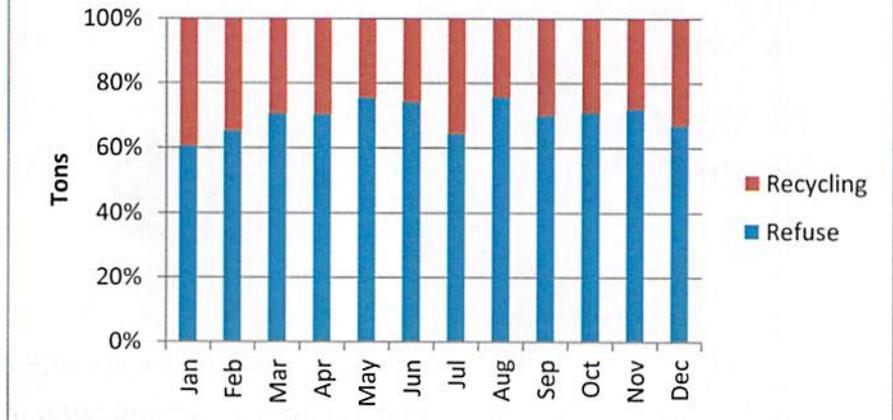
2015 Recycling Rebate:
\$42,999.72 ↓

Refuse Collection 2012-2015



Refuse collection services are provided weekly to one, two and three family residences curbside or via alley. The Village is divided into three refuse collection routes operated by three employee collectors Monday through Wednesday of each week.

2015 Total Material Collection Refuse/Recycling



Curbside recycling collection is currently provided under contract with Waste Management. Under the current contract, the Village receives half the proceeds for the sale of materials collected curbside.

2015 Facts & Figures

Total Curbside Recycling:
1,112 tons ↑

Total DPW Drop-off Recycling:
129 tons ↓

Monthly cost per residence for curbside recycling:
\$2.28

Material totals (all sources):

Paper
622.5 tons ↓

Glass
310.8 tons ↓

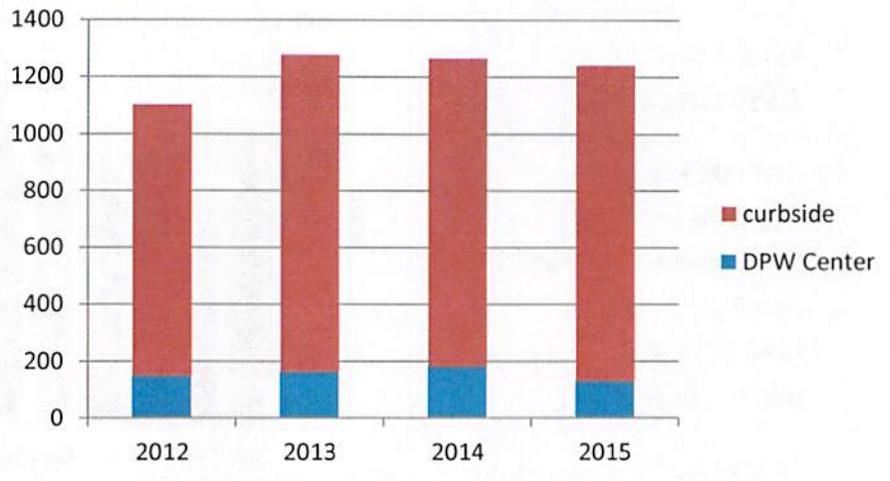
PETE (#1 plastic)
47.8 tons ↑

HDPE (#2 plastic)
29.7 tons ↑

Tin
22.5 tons ↑

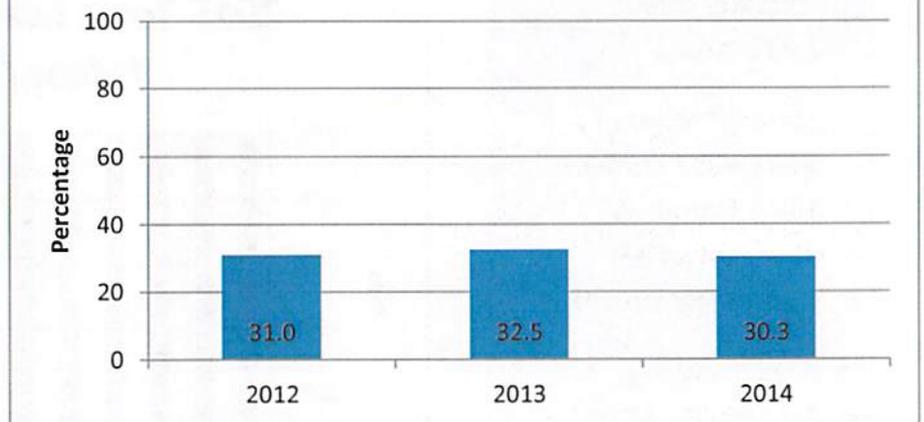
Aluminum
1.3 tons ↓

2015 Total Recycling



Total material collection has trended slightly downward since 2013 based upon numbers reported by Waste Management.

2015 Recovery Rate (recycled materials/total materials)



Village residents currently landfill approximately 2.1 pounds of material for each pound of material recycled. We have a recovery rate of 30.3%, down from 32.5% in 2014.

2015 Facts & Figures

Material Disposed:
178 tons ↓

Total Labor Hours:
hours
354 ↑

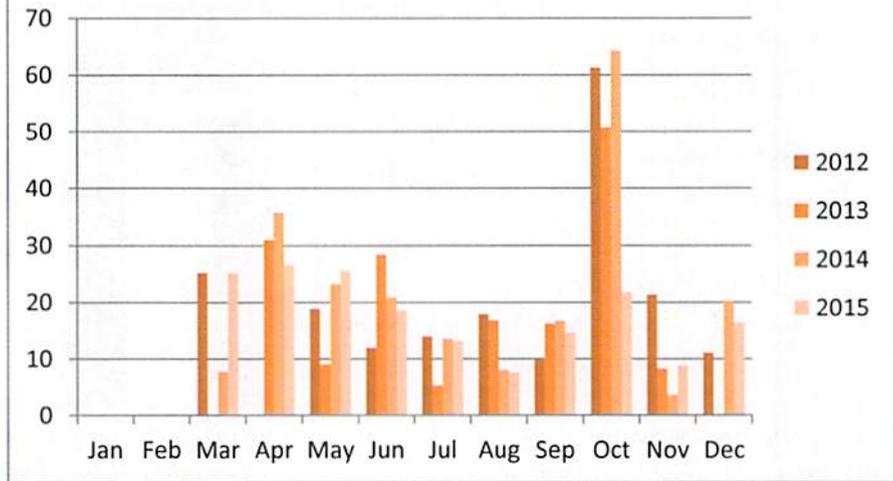
Shorewood jointly owns its 2012 Tymo vacuum sweeper with the Village of Whitefish Bay.

Total Diggers Hotline Tickets:
1,223 ↑

Estimated Labor Hours:
167 ↓

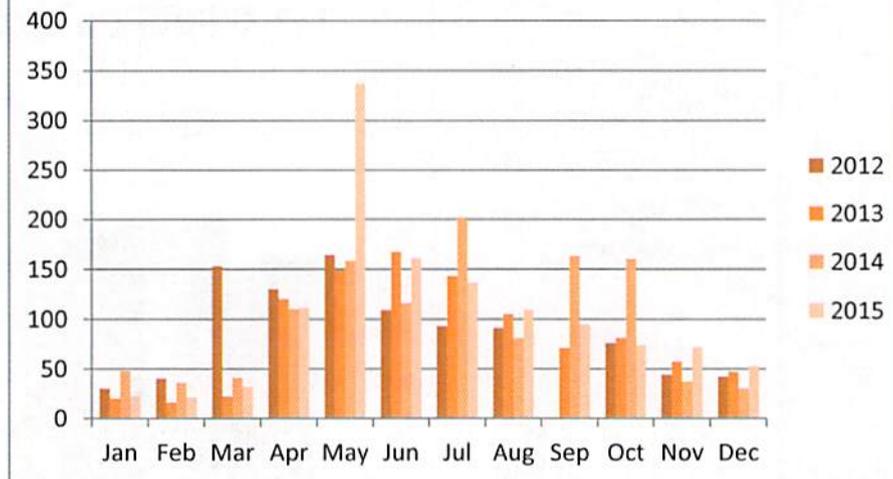
Hotline requests fluctuate greatly based upon the scope of public construction projects and economic conditions (private activity).

2015 Street Sweeper



Regular street sweeping is required under the Village’s NR 216 stormwater discharge permit. Sweeping is typically not done during the winter months as road salt is extremely damaging to the sweeper.

2015 Diggers Hotline Tickets



Diggers Hotline is a necessary activity to protect the Village’s underground infrastructure. Requests are made for projects ranging from fence installations to major sewer improvements. All requests, no matter the project scope, require the marking of water, street light and traffic signal locations within the project area radius.

2015 Facts & Figures

Total Gallons:
22,253 ↓

Total gasoline:
6,262 ↑

Total diesel:
15,991 ↓

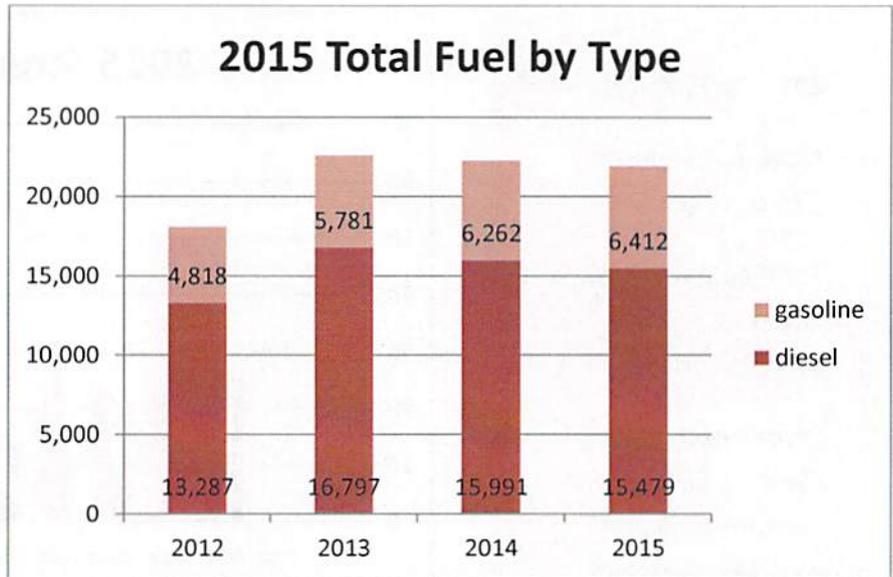
% change 2014 to 2015:
1.63% decrease

Total number of fleet vehicles:
33

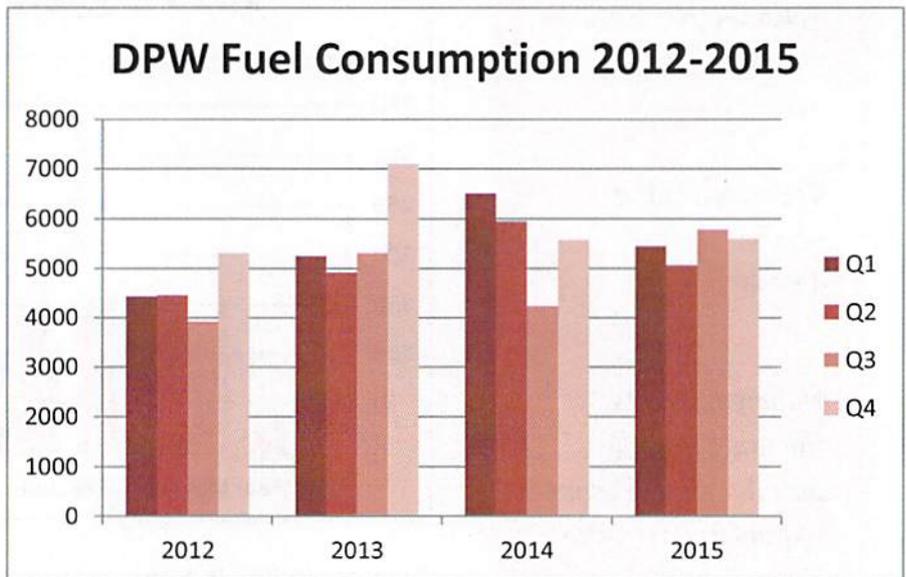
Diesel vehicles:
19

Gasoline vehicles:
14

Total pieces of gas/diesel powered equipment:
26



Fuel consumption varies from quarter to quarter based upon a number of factors including the types of projects or tasks undertaken. The most significant impact, however, is typically seasonal. Annual fuel usage is directly proportionate to snowfall and snow event frequency.



Staff attributes the increase in gasoline usage in 2015 to an increase in water main break activity; the majority of the utility vehicles are gasoline powered.

2015 Facts & Figures

Total Materials:
1,245 tons ↑

Total leaves:
558 tons ↑

Total brush:
222 tons ↑

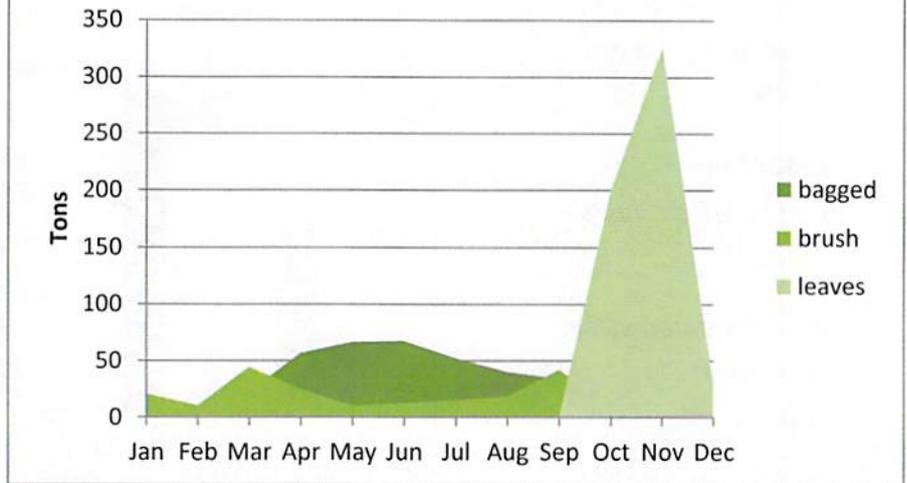
Total bagged:
465 tons ↑

Estimated labor hours: 2,103 ↓

While the number of trees in Shorewood remains relatively constant, the volume and timing of leaf collection can vary dramatically based upon precipitation levels, temperature and other factors.

A wet fall season will significantly increase both weight totals and labor hours.

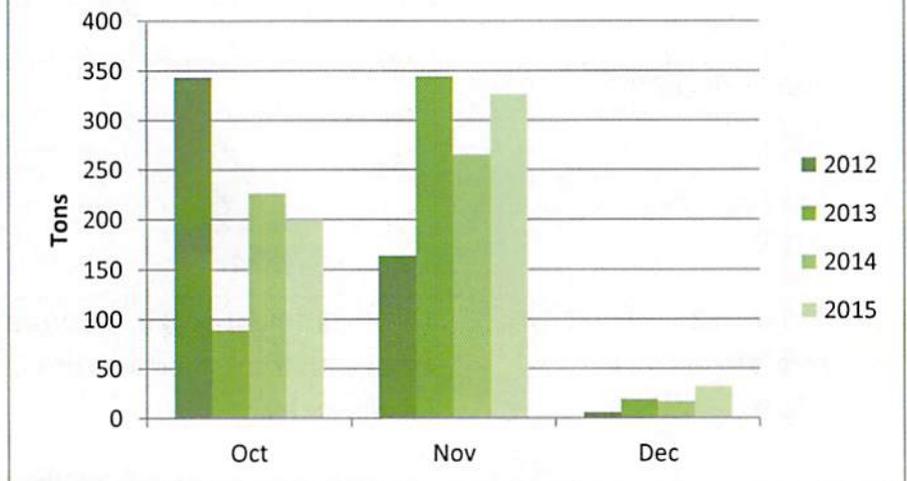
2015 Yard Waste - All Types



Bagged yard waste is collected on the same schedule as refuse. Yard waste routes parallel refuse routes and the material is collected in the afternoon following the regular routes in season (April – Nov).

Brush is chipped curbside on a monthly schedule (April – Nov).

Monthly Leaf Collection 2012-2015



Leaves are vacuum collected curbside on a day-certain weekly schedule between the third Monday in October and the first Friday in December of each year.

2015 Facts & Figures

Total Street Trees:
6,325

*Labor hours
planting & pruning:*
1,072 ↓

*Most common street
tree species in
Shorewood:*

Maple

Ash

Honey locust

Linden

Elm

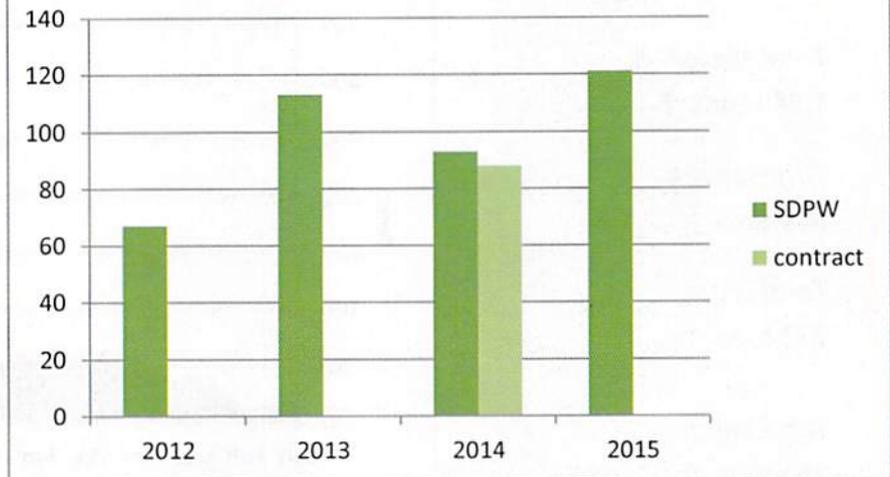
Hackberry

Total Ash Trees:
1,627

EAB Labor hours:
392 ↑

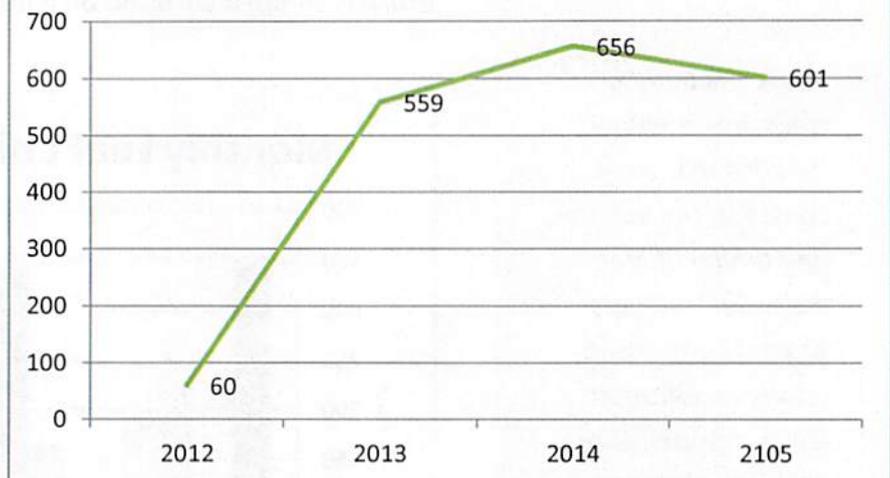
*Ash trees as a% of
total street trees:*
17.1%

2105 Trees Planted



In 2014 the Village utilized landscape contractors for tree planting to replace ash in construction program areas (see EAB below).

2015 Ash Trees Injected for EAB



The department began utilizing an Urban Forestry Intern in 2013 to assist with trunk injections of ash identified in the Village's EAB Readiness Plan.

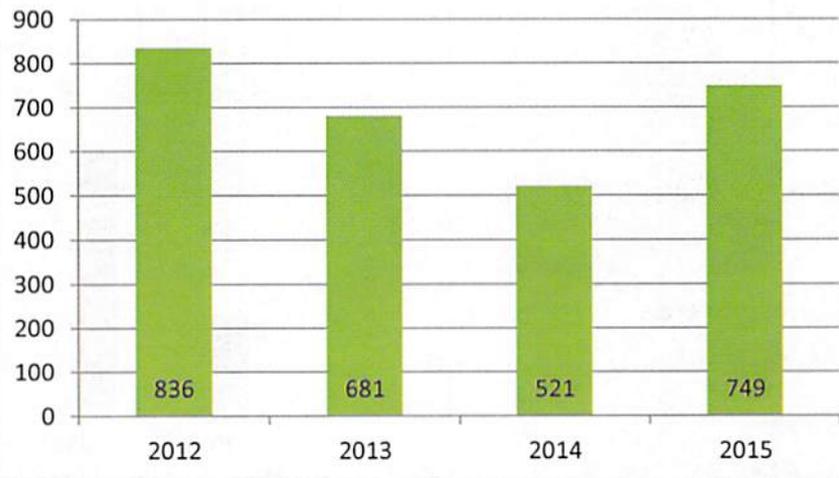
In even calendar years the Village's fight against EAB also includes the removal and replacement of selected ash trees within major infrastructure project areas. The policy, adopted in 2014, identifies criteria for the replacement of selected ash trees; removals and planting tasks are performed by the project's landscape subcontractor.

2015 Facts & Figures

Tree pruning, trimming, or cutting is an ongoing process throughout the life of a tree. After selecting the right tree and carefully planting it, early pruning is the most important thing that can be done for a tree.

Most public investments depreciate in value – trees are an exception. Careful selection and management allow the urban forest to increase in value. Based upon accepted industry standards, Shorewood's public urban forest has a 2015 estimated value of \$13,954,292.00.

2015 Trees Pruned



The number of trees pruned annually is dictated by the staff time available. Weather conditions reduce the available window for pruning and snowfall frequency impacts staff time available as our forestry crew is typically among our first responders for winter maintenance activities.



The Village of Shorewood was awarded a 2014 WDNR Urban Forestry Grant to update our 1996 Urban Forestry Management Plan. The plan was completed in 2015 by Wachtel Tree Service with significant input from DPW forestry and administrative staff and will provide solid guidance for future planning and budgeting.

2015 Facts & Figures

Total length of collection system:
45.7 miles

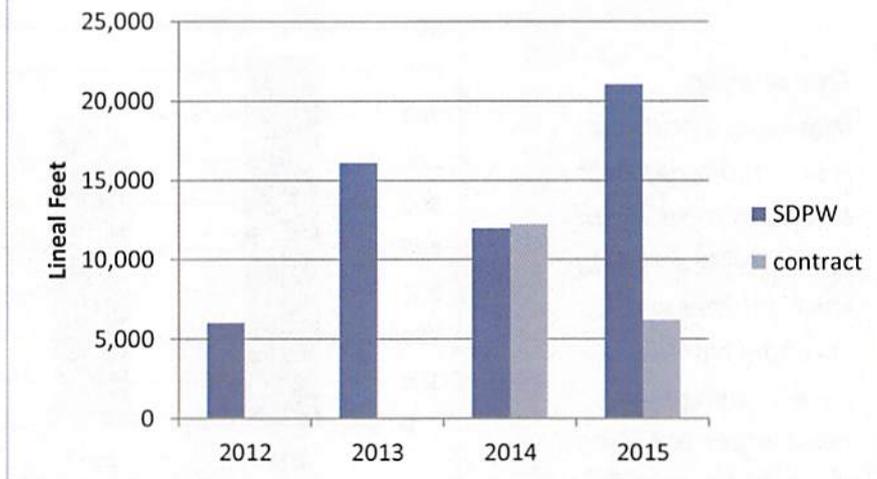
Combined sewer:
18.4 miles

Sanitary sewer:
12.55 miles

Storm sewer:
16.45 miles

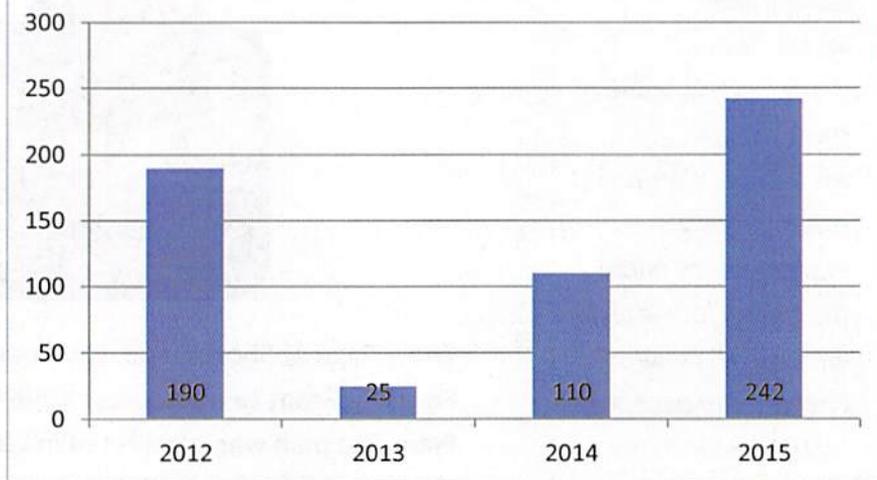
The Village is a member community of the Metropolitan Milwaukee Sewerage District.

2015 Sewers Cleaned/Inspected



Shorewood's CMOM (Capacity, Management, Operations and Maintenance) Plan outlines a goal to inspect 14% of the Village's combined and sanitary systems annually. This equates to 22,629 lineal feet each year.

2015 Manholes Inspected



The Village's CMOM Plan outlines a goal to inspect 20% of the Village's sanitary and combined manholes annually. This equates to an inspection of 212 of the 1,062 system manholes each year.

2015 Facts & Figures

Mainline lining program contract cost:
\$182,176 ↓

Lateral lining program contract cost:
\$140,549 ↓

Total number of private laterals rehabilitated:
30 ↓

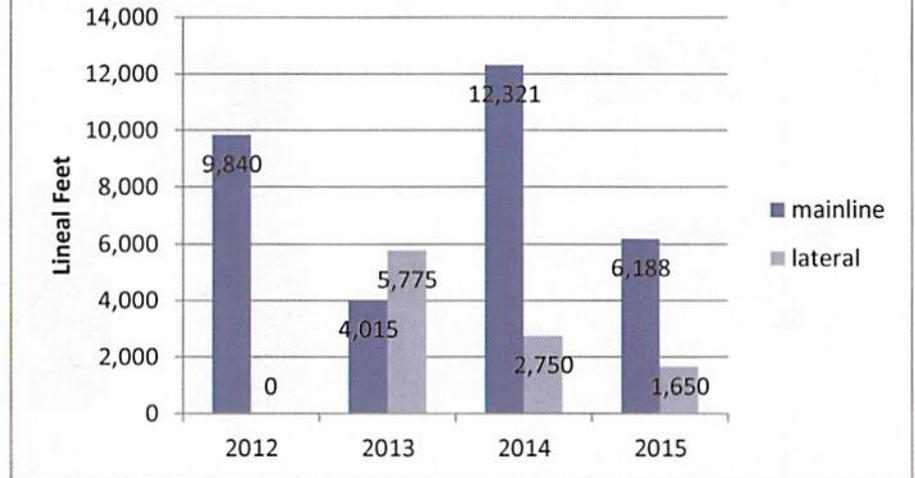
Average cost of private lateral rehabilitation:
\$4,684 ↓

Storm Inlets:
450

Catch basin:
480

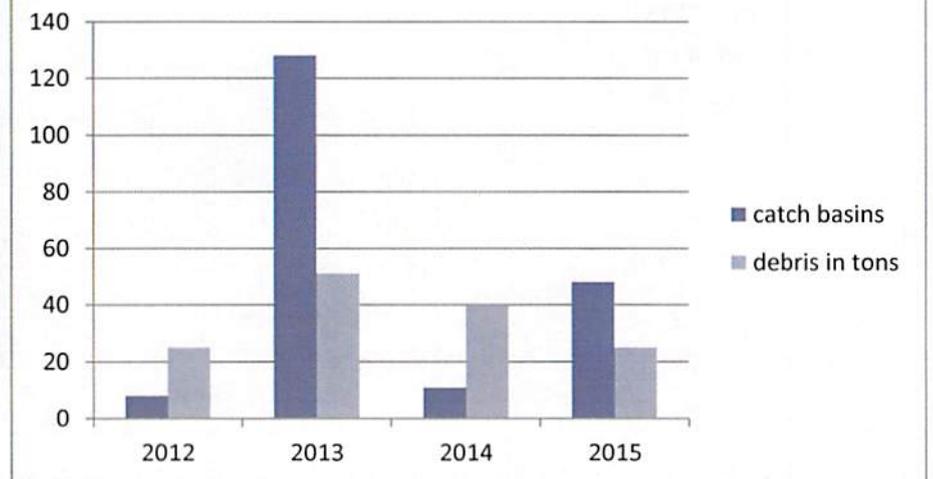
Unlike inlets, catch basins are designed with a sump which removes debris and particulates from the storm water before it is discharged through the system to the lake or river.

2012-2015 Sewer Lining All Types



The Village has performed an annual mainline sewer CIPP lining program since 2001. Lining improves the structural integrity of the pipe, protecting it from failure or collapse. It also provides significant inflow and infiltration reduction benefits to both mainline (public) sewer and privately owned laterals. The Village's PPII Reduction program lined 50 private laterals, a program partially funded by MMSD.

2012-2015 Catch Basins Cleaned



2015 Facts & Figures

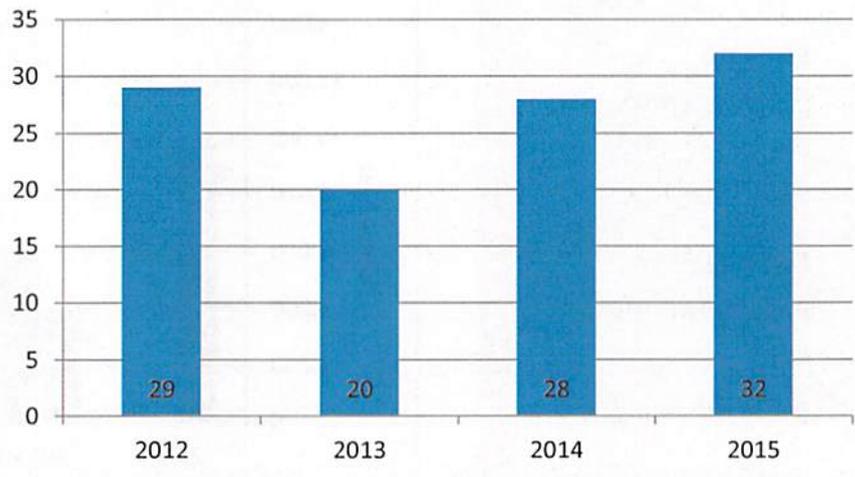
Total length of distribution mains:
38.1 miles

Main break repair labor hours:
2,637 ↓

The Village is a wholesale customer of the Milwaukee Water Works, purchasing water while owning and maintaining the distribution system within its municipal boundaries.

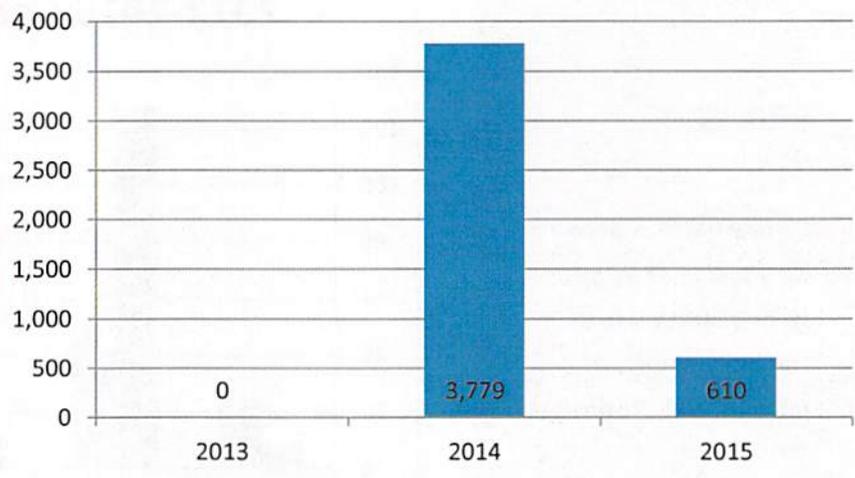
Percent of distribution system replaced in recent three year period:
2.1% ↓

2012-2015 Water Main Breaks



Unlike the previous year which saw an increase in main break activity due to extreme weather conditions, 2015's record main breaks were due to system pressure increases. Based upon engineering recommendations, the system pressure was incrementally increased over several months to improve water pressures throughout the Village.

Water Main Replaced 2013-2015



The Village's first stand-alone water main replacement in many years included E. Menlo Boulevard between N. Maryland Avenue and N. Prospect Avenue.

2015 Facts & Figures

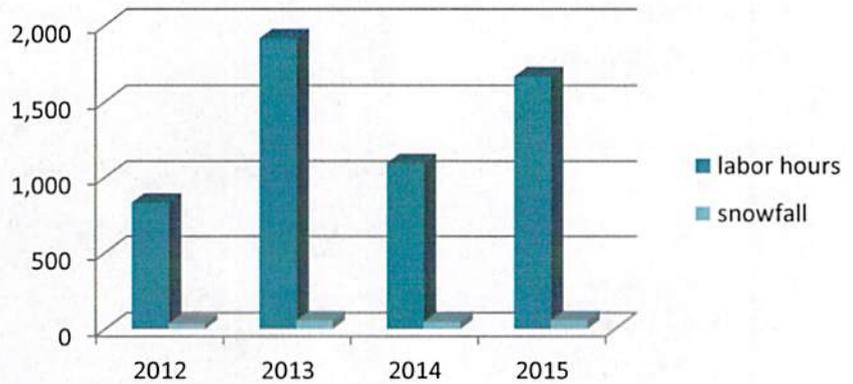
Per ton salt cost:
\$60.36 early season
\$61.63 late season

Annual Snowfall:
59.5 inches ↑

In recent years, the Village has invested in equipment improvements to reduce salt use.

Primary among these has been for the production of salt brine and the addition of tanks to the front-line plow trucks to allow on-board treatment (pre-wetting) of the rock salt with liquid brine. Studies report that pre-wetting causes the salt to work faster and that as much as 30% more salt remains in the driving lanes rather than scattering into the gutter.

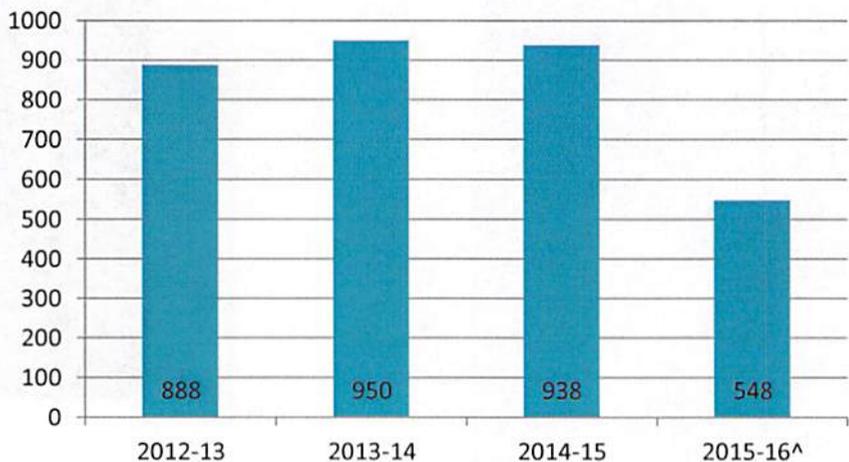
Winter Maintenance Labor Hours (to total annual snowfall)



Winter maintenance includes the following snow-related tasks: salting, plowing, sidewalk clearing, bus stop clearing, “bumping corners” (clearing snow from corners at all intersection to improve pedestrian access) and snow removal from the business district.

Comparing these hours to the annual snowfall does not give a true picture of efficiency as several consecutive light snowfalls will often require as many or more labor hours and salt usage as one larger storm.

Seasonal Salt Usage



[^] Through March 1, 2016

2015 Facts & Figures

Anti-icing is the pre-treatment of pavement surfaces with salt brine prior to a storm event. This application prevents the precipitation from bonding to the pavement, reducing salt use and labor hours.

In 2015, DPW staff used purchased components to fabricated anti-icing units to fit current fleet equipment at a potential savings of tens of thousands of dollars.



Top: Anti-icing unit for street pavement treatment.

Right: Anti-icing unit utilized for sidewalks areas at Village Center and parks.

