



City of
EvanstonTM

Serving the Community for 138 Years

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Good for the Environment

2012 Annual Report

Evanston Utilities Department

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Utilities Department Annual Accomplishments and Performance Measures

Introduction

The Utilities Department manages water and sewer operations as well as overseeing other utilities provided to the City of Evanston. The Water Division is responsible for operation and maintenance of the Water Treatment Plant, which supplies water to over 350,000 people in Evanston and five other communities. The Water Division also operates and maintains more than 157 miles of water mains, 2,000 valves, and 1,400 fire hydrants in the Evanston distribution system.

The Sewer Division is responsible for operation and maintenance of the sewer conveyance systems in Evanston, including a combined sewer system, a relief combined sewer system, and a storm sewer system. These systems are comprised of over 200 miles of sewer mains ranging in size from 6-inch diameter to 120-inch diameter, including over 5,500 manhole structures and over 9,000 drainage structures.

The Utilities Department also coordinates with ComEd, Nicor, AT&T, and other private utilities on behalf of Evanston residents and businesses to help resolve service issues and improvement needs.

The Department's FY 2013 budget is approximately \$39 million (\$20.6 million Water Fund and \$18.4 million Sewer Fund). Utilities Department staff includes 55.5 full-time equivalents (FTEs).

Year-to-Year Utility Department Comparables

	2009	2010	2011	2012
Total Water Pumped (millions of gallons)	14,200	14,202	13,870	14,547
Fire Hydrants Repaired or Replaced	143	144	217	321
Fire Hydrants Repainted	0	0	0	284
Water Main Valves Repaired or Replaced	55	92	59	51
Water Main Installed (miles)	1.5	1.5	1.4	1.8
Large Diameter Sewer Rehabilitated (feet)	0	0	0	0
Small Diameter Sewer Rehabilitated (feet)	7,152	2,081	5,595	8,321
Sewer Mains Inspected (feet of pipe)	127,148	104,460	106,856	103,678
Sewer Mains Cleaned (feet of pipe)	231,598	275,781	264,738	248,311
Sewer Structures Repaired or Replaced	176	136	108	123

2012 Major Accomplishments

Major Water Treatment Facility Improvements

Rehabilitation of the six filters installed in 1964 and the 1964 filter building itself was completed, prolonging the life of these critical treatment components. The replacement of the east section of the Pumping Station switchgear, destroyed by a fire on May 15, 2011, was completed and placed into service. Other improvements completed at the water treatment facility include installation of new turbidimeters on all 24 filters, replacement of roofing membranes over two garages, and installation of new windows on the Pumping Station.

Grant and Low Interest Loan Funding

The City was awarded a staff assistance grant through the Chicago Metropolitan Agency for Planning (CMAP) and developed a water conservation and efficiency plan utilizing this assistance. The Utilities Department also obtained a \$3,078,905 low interest (2.295%) loan through the Illinois Environmental Protection Agency's State Revolving Fund to rehabilitate nearly 6,900 feet of 100 year-old, brick sewer mains.

Water Supply Expansion

The City and potential wholesale water customers partnered together to complete an engineering study for a water supply transmission main. The report developed an opinion of probable construction cost, defined potential transmission main routes, established water demands, determined appropriate pipe diameters, and developed an allocation of costs among the partner communities and agencies.

Cross Connection Control Improvements

An ordinance was adopted that required anyone working on cross connection control devices within the City to become a City-licensed Cross Connection Control (C3) Contractor. This measure increased the compliance from these contractors to obtain the appropriate permits and submit timely and accurate test results, enhancing the City's ability to meet the federal and state requirements for cross connection control. This will improve the City's ability to ensure water quality and safety standards are met.

Safety Improvements

A sprinkler system and fire alarm system were extended into Garages 1 and 2 at the water treatment facility, and upgrades were made to the fire alarm system in the Service Building. In addition, a fourth asbestos abatement contract was completed in 2012, and now all known asbestos at the facility has been removed.

2013 Major Goals and Initiatives

Major Water Treatment Facility Improvements

Assure the quality and reliability of the potable water supply by completing the replacement of the SCADA system, replace the chlorine feed equipment, and make improvements to the 48-inch diameter intake pipeline.

Meter and Billing Improvements

Assure the reliability of the water meter reading system by completing the Automated Meter Information (AMI) project, which will result in the replacement of the meter transmission units (MTUs) at all properties and the replacement of approximately 1,300 meters. Additionally a new feature of the billing software will be implemented allowing customers to review their water usage and billing history online.

Rehabilitation of Large Diameter Sewers

Rehabilitate 8,000 feet of large diameter sewers, ranging in size from 36-inch to 72-inch diameter. These pipelines are over 100 years old and are critical components of the combined sewer system. They will be rehabilitated using the cured-in-place pipe (CIPP) lining process, to minimize surface disruption and complete the improvements as quickly and cost-effectively as possible.

Water Supply Expansion

Complete the cost of service study to determine appropriate rates to supply potential new wholesale water customers. Develop an appropriate water supply agreement format that would be utilized with new wholesale water customers, and negotiate with the various communities and agencies to determine the size of transmission main needed and plant expansion required to meet the demands of new customers.

Loans and Grants

Finalize and submit full loan application documents for the 48-inch diameter intake rehabilitation project (\$1.9 million) and for large diameter sewer rehabilitation (\$1.9 million). Submit preliminary loan application documents for projects proposed in 2014, including water plant reliability improvements, replacement of the finished water reservoir, replacement of the 30-inch diameter water feeder main to downtown Evanston, and additional large diameter sewer rehabilitation.

Safety Improvements

Complete a study of the electrical system within the water treatment facility. This study will include a hazard risk assessment, labeling of equipment, recommendations to reduce arc flash hazards, and testing of the switchgear.

Plant Data

Intakes

36/42" – 5,946' long, 28' deep

48" – 5,300' long, 28' deep

54" – 5,340' long, 28' deep

Suction Wells

2 – 22' diameter x 74' deep with
traveling screens

1 – 20' diameter x 52.5' deep

Low Lift Pumps

2 – 30 mgd, electric motor driven

3 – 15 mgd, dual drive, electric/natural gas

1 – 30 mgd, dual drive, electric/natural gas

Total capacity of 135 mgd

Emergency standby capacity of 75 mgd

Flash Mix Basin

14.75' x 14.75' x 31.58' deep

Single vertical shaft mixer

Counter-flow rotation

Application point for alum, chlorine,
fluoride, polymer, and carbon

Rated capacity 108 mgd w/ partial bypass

Slow Mix/Settling Basins

Four double-deck basins with series flow

2 – 2.865 MG capacity, five 60' shafts
per basin, 4 paddle wheel sections

2 – 4.3 MG capacity, eight 60' shafts per
basin, 4 paddle wheel sections

Retention time at 108 mgd (flash mix
capacity) is 3 hours and 11 minutes

Filters

Anthracite-capped rapid sand filters

12 – 4.25 mgd, 738 ft² each

12 – 8.01 mgd, 1,391 ft² each

Total rated capacity of 147 mgd at a
surface loading rate of 4 gpm/ft²

Automatic surface and backwash system
on all 24 filters

Underground Storage

8 clearwells – 4.4 MG total

1 reservoir – 5.0 MG

Total Plant Storage – 9.4 MG

High Lift Pumps

1 – 15 mgd, electric motor driven

2 – 25 mgd, electric motor driven

1 – 10 mgd, dual drive, electric/natural gas

2 – 15 mgd, dual drive, electric/natural gas

1 – 22 mgd, dual drive, electric/natural gas

1 – 20 mgd, natural gas engine

Total capacity of 147 mgd

Emergency standby capacity of 82 mgd

Wash Water Pumps

2 – 20 mgd

2 – 10 mgd

Detention Tank

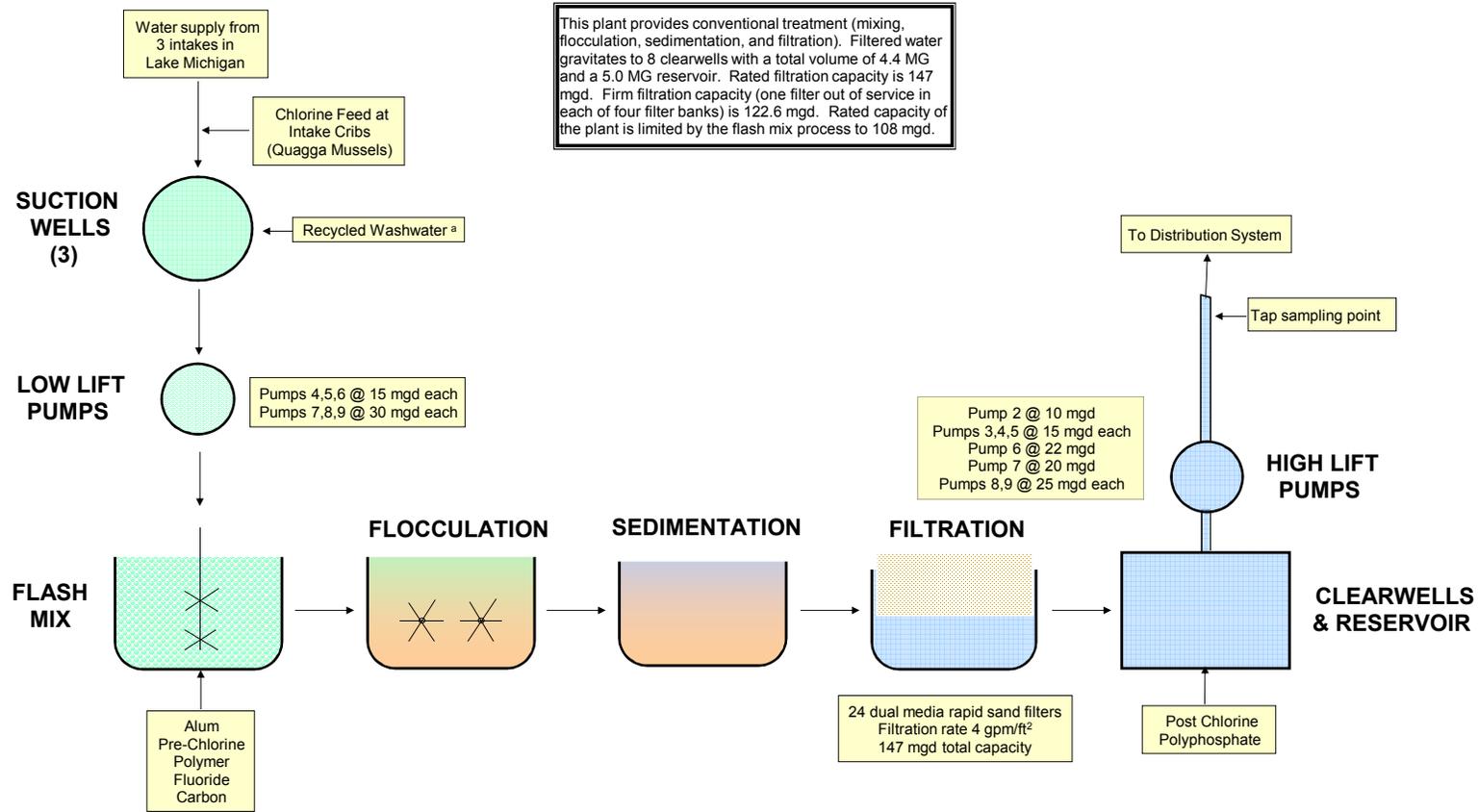
80' x 192' x 12' deep, divided in 2 sections

Total capacity of 1.1 MG

1 – submersible sludge pump at 700 gpm

Legend: MG = million gallons; mgd = million gallons per day; gpm = gallons per minute

City of Evanston Water Treatment Schematic



Volume (MG)	0.109	2.384	13.516	1.730	9.560*
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Notes:
*based on 8.0' depth

Water Works Improvements (1874 to 2012)

- 1874** Evanston Community Water System established
- 1913** Constructed 12 mgd filter plant
- 1923** Expanded filter plant to 24 mgd
- 1934** Constructed 5.0 million gallon underground reservoir at plant site
- 1944** Contracted to supply water to Skokie
- 1949** Constructed high lift (finished water) pumping station
Expanded filter plant to 48 mgd
Constructed slow mix basins 1 and 2
- 1956** Constructed 48" intake and low lift (raw water) pump station
Constructed 36" feeder main to Skokie
- 1964** Expanded filter plant to 72 mgd
Constructed additional 36" feeder main to Skokie
Constructed slow mix basins 3 and 4
- 1971** Installed 20 mgd high lift pump and natural gas engine
- 1974** Constructed filter wash water detention basin, 1.1 MG capacity
- 1976** Constructed 54" intake, 5,340 feet in length
Extended 48" intake to 5,300 feet in length
- 1981** Constructed material storage building at south water tank yard
Installed 3 new boilers (2 - 50 HP and 1 – 20 HP)
Replaced 5 kV switchgear and motor starter equipment for low lift pumps
Upgraded slow mix equipment in basins 1 and 2
- 1982** Installed two 30 mgd low lift pumps
Replaced 5 kV motor starter center for high lift pumps
- 1983** Constructed new chemical building and chemical feed system
Installed a 500 kW emergency generator
Rehabilitated six 1914 and six 1924 filters to increase rate to 3 MGD per filter
- 1984** Constructed 5 MG standpipe with booster station to replace the 1.5 MG elevated tank in southwest Evanston

- 1985** Began selling water to Northwest Water Commission at the rate of 10 MGD
Installed dual drive 22 MGD high lift pump and new piping
Installed two 48" diameter pipes from reservoir to east side of high lift suction tunnel
Completed system automation which provided a microprocessor-based digital control system to perform control and supervisory functions
- 1986** Constructed a 7.5 MG standpipe with booster station to replace the 1.0 MG elevated tank in northwest Evanston
Began pumping to Northwest Water Commission reservoir in Des Plaines
- 1988** Installed two 700 gpm sludge pumps with automatic samplers in the settling basins along with 3,400 feet of 8" diameter sludge main from the Filtration Plant to the MWRD interceptor at Lincoln Street and Asbury Ave
- 1989** Completed filter control upgrade to microprocessors
- 1990** Turndown and extension of 48" raw water intake lines into North and South suction wells
Upgraded west filter influent valves from 16" to 24"
- 1991** Upgraded electrical substation and switchgear to 3,750 kVA
Upgraded west filter effluent piping
- 1992** Installed chlorine feed system to intakes for zebra/quagga mussel control
Installed a 15 MGD high lift pump to replace one 8 MGD pump and one 6 MGD pump
Installed two 48" diameter butterfly valves on suction piping from reservoir to high lift suction wells
Installed hydrofluosilicic acid tank and feed system in garage #6
Installed 60" diameter flash mix bypass pipe to influent duct of settling basins
Replaced slow mix equipment and flushing system in basins 3 and 4
Replaced 480 V filter plant switchgear
Installed blended phosphate system and initiated blended phosphate treatment for corrosion control
- 1994** Constructed new chemical storage and handling building
- 1995** Replaced Low Lift Pump #6 gasoline engine with natural gas engine
- 1996** Replaced 1949 filter building roof
Constructed loading dock on 1913 filter building
- 1997** Replaced High Lift Pump #2 gasoline with a natural gas engine
- 1998** Replaced Low Lift Pump #5 and #7 dual drive gasoline engines with natural gas fueled engines

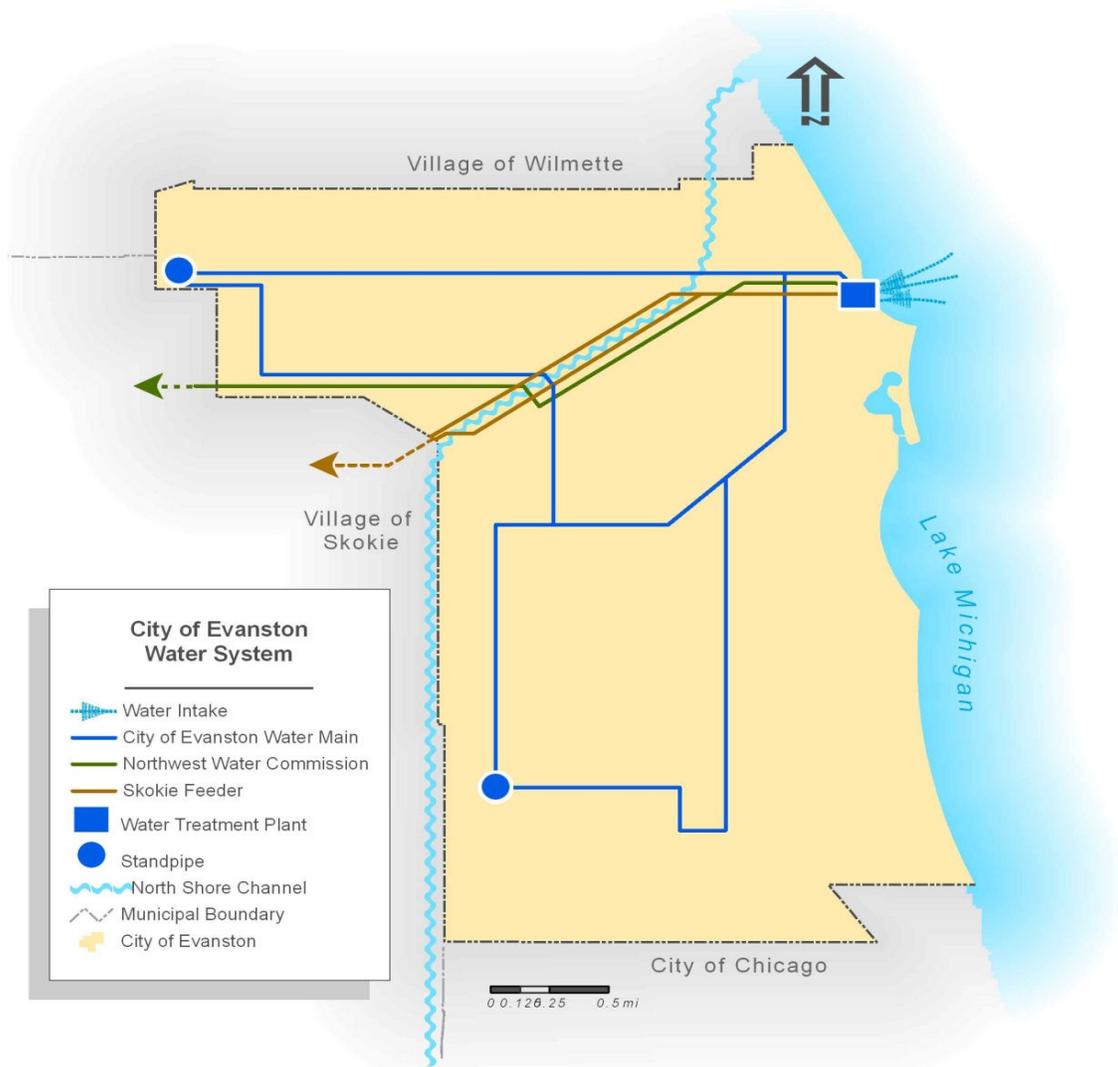
- 2000** Installed individual effluent turbidimeters on all 24 filters
- 2001** Converted High Lift Pump #3 to dual drive
Replaced filter bottoms and rehabbed six filters in 1948 filter addition
- 2002** Completed installation of automatic fixed radio meter reading system
Replaced effluent settling basin sluice gates with rectangular butterfly valves
- 2003** Installed uninterruptible power supply to filtration and pumping equipment
- 2004** Constructed garages east of the settling basins
Constructed an access way to the chemical building from filtration division
Installed a scrubber
- 2005** Replaced Low Lift Pump #4 gasoline engine with natural gas engine
- 2006** Replaced Low Lift Pump #7
- 2008** Renovated administrative offices
Expanded filter shop area
- 2009** Implemented AQUAS (Harris) Utility Billing System
Installed anchor ice and zebra mussel control systems in 54" intake
- 2010** Installed a 25 kW solar energy facility on the high lift pump station roof
- 2012** Rehabilitated Filters 19-24 with new media, underdrains, and backwash equipment
Rehabilitated the 1963 filter building structure and roof
Replaced all windows in the high lift pump station
Replaced electrical switchgear in high lift pump station

Notes: MG = million gallons
mgd = million gallons per day
HP = horsepower
kV = kilovolt
kW = kilowatt
kVA = kilovolt-ampere

Service Area & Population

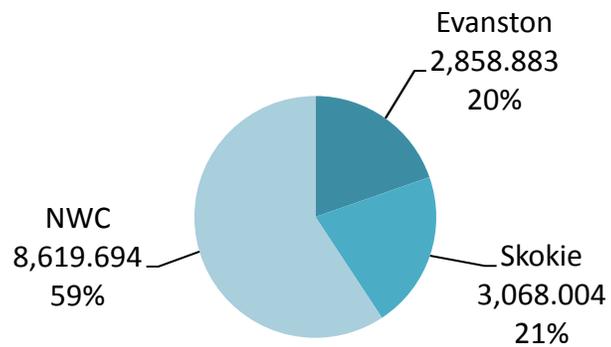
	Area (Square Miles)	2012 Persons*
Evanston	7.8	74,486
Skokie	10.5	64,784
NORTHWEST WATER COMMISSION		
Arlington Heights	15	75,101
Buffalo Grove	4.5	41,496
Palatine	9	68,557
Wheeling	7.5	37,648
Total Served	54.3	362,072

* U.S. Census Bureau, 2010 Census



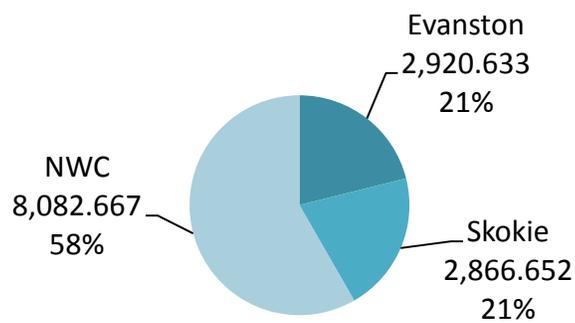
Pumpage to Distribution

2012 Pumpage to Distribution (MG)



2012 Total Pumpage: 14,546,581,000 gallons

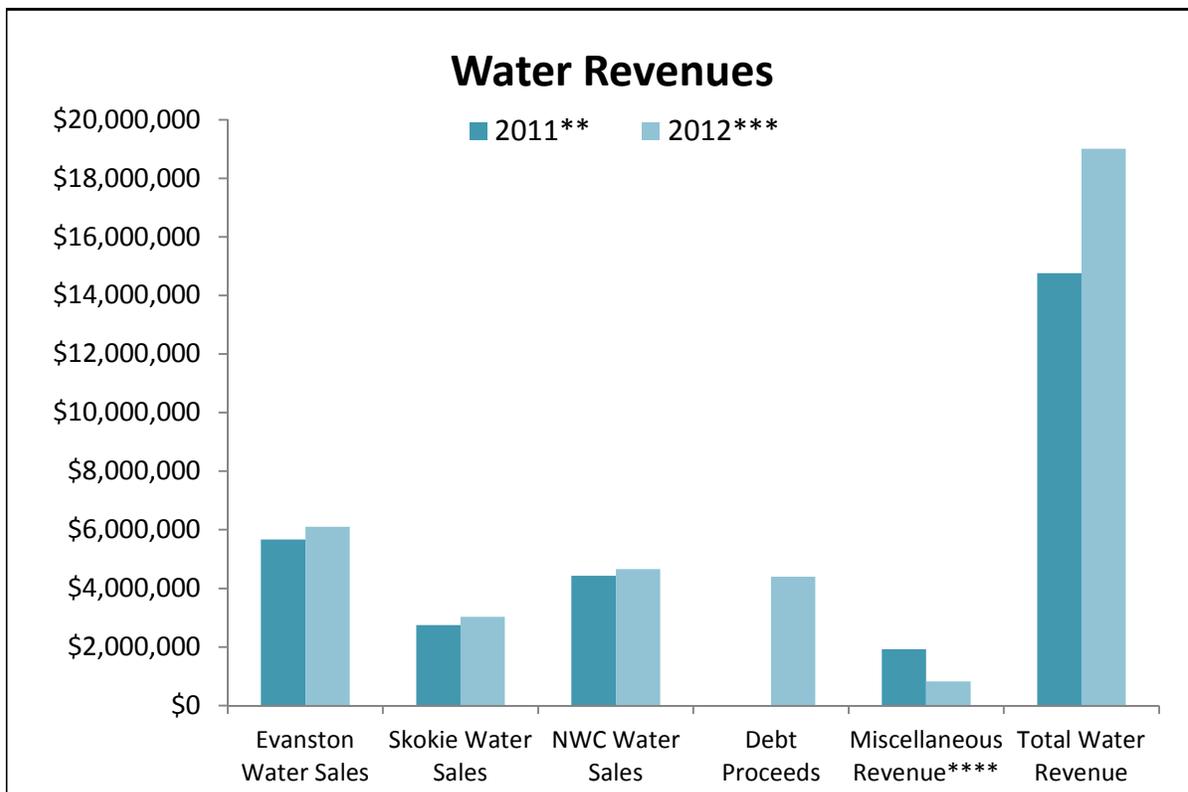
2011 Pumpage to Distribution (MG)



2011 Total Pumpage: 13,869,952,000 gallons

Water Revenues*

	2011**	2012***
Evanston Water Sales	\$5,667,776	\$6,100,000
Skokie Water Sales	\$2,748,314	\$3,030,000
NWC Water Sales	\$4,426,020	\$4,658,000
Debt Proceeds	\$0	\$4,400,000
Miscellaneous Revenue****	\$1,919,041	\$824,506
Total Water Revenue	\$14,761,151	\$19,012,506



* Financial data are based on actual expenses and do not include audit adjustments such as depreciation and inventory. For audited financial records, see the Comprehensive Annual Financial Report for the City of Evanston, cityofevanston.org/city-budget/.

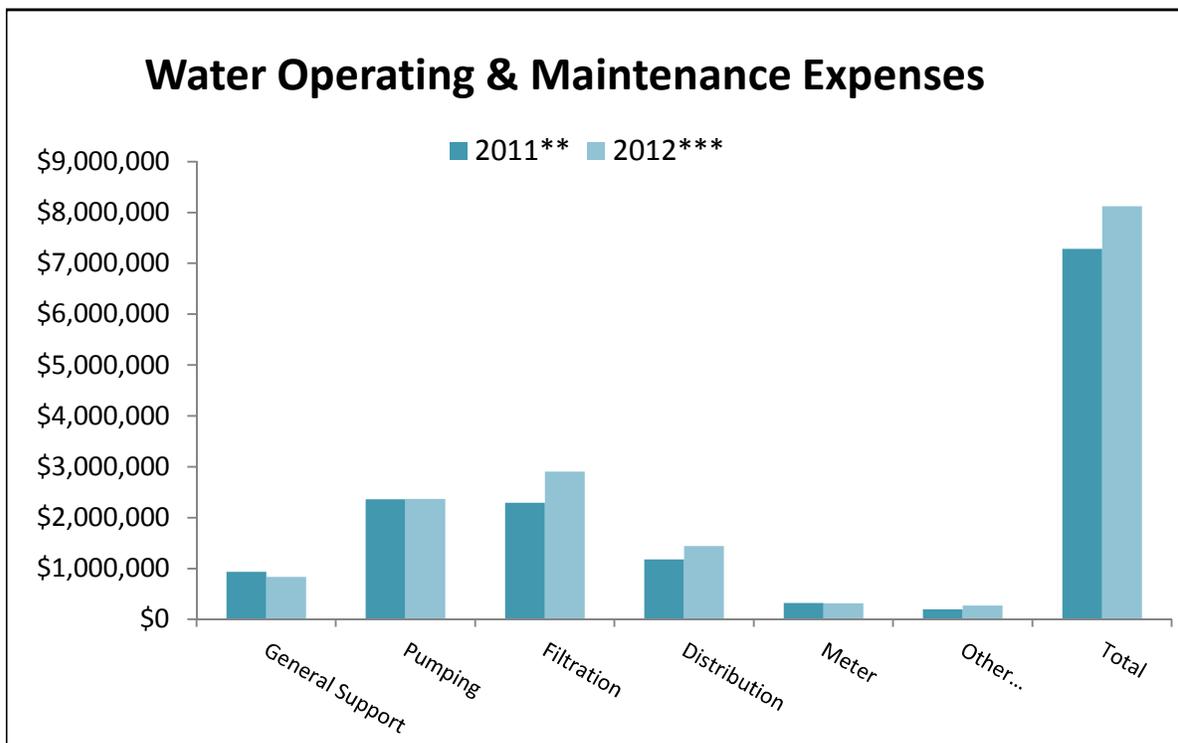
** Due to a change in the City's fiscal year calendar, audited financial data for 2011 was for the ten-month period from March 1, 2011 to December 31, 2011. The 2011 financial data were converted to a 12-month equivalent for comparison to 2012 data.

*** Estimated year-end financial data has not yet been reviewed by the City's auditors.

**** Miscellaneous Revenue includes cross connection control fees, investment earnings, property rental, interest income, fees, grants, insurance reimbursement, phosphate sales, and merchandise sales.

Water Operating & Maintenance Expenses*

	2011**	2012***
General Support	\$937,680	\$832,831
Pumping	\$2,359,750	\$2,364,465
Filtration	\$2,294,705	\$2,902,021
Distribution	\$1,178,872	\$1,441,374
Meter	\$321,003	\$313,841
Other Operating Expenses	\$193,646	\$270,530
Total	\$7,285,656	\$8,125,062



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**** Other Operating Expenses include capital outlay, interfund transfers, and other operating expenses.

Employee Profile and Safety

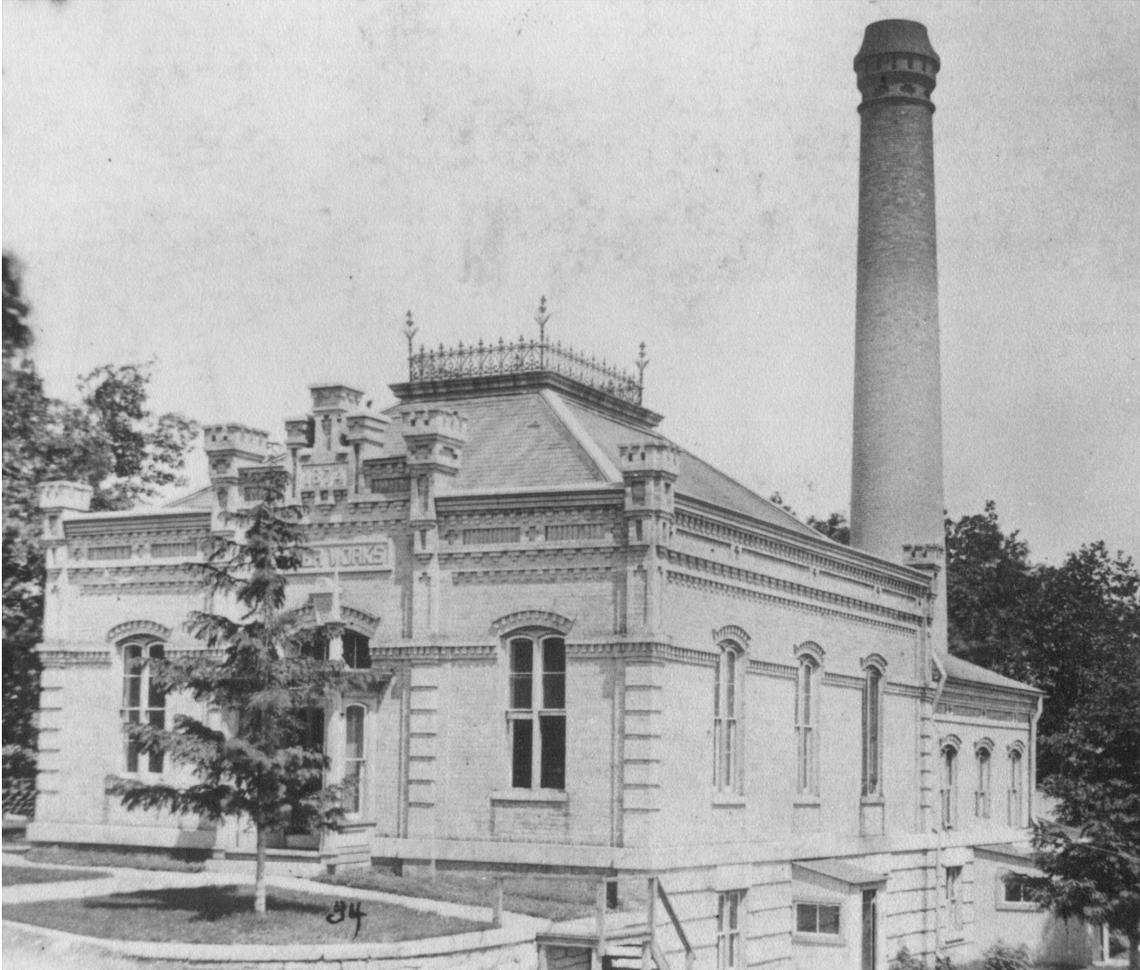
Section	Employee Full-Time Equivalents
Administration	5.0
Pumping	11.0
Filtration	14.0
Distribution*	10.5
Sewer	13.0
Meter	2.0
Apprentices	2.0
Total	57.5

Section	Number of AFMD** Beginning of Year	Number of Accidents	Highest consecutive AFMD achieved	Date Highest AFMD Achieved	Number of AFMD End of Year
Pumping	2,267.5	1	4,538.0	9/30/2012	227.5
Filtration	8,420.5	2	2,176.0	10/31/2012	2,176.0
Distribution	348.0	2	1,742.5	6/30/2012	704.5
Sewer	154.0	0	2,321.0	10/31/2012	2,321.0

* The 10.5 FTEs in Distribution include one Civil Engineer working in the Public Works Department.

** AFMD = Accident Free Man Days

Pumping



The original Water Works was built in 1874 to provide water for Evanston's 3,500 residents. The system consisted of a 16 inch intake pipe extending 1,200 feet into the lake, a small Holly steam engine capable of pumping 2 million gallons per day, a hand fired boiler, and a few miles of cast iron water main. The original cost of the steam engine and boiler was \$24,000. During the first year of operation the plant pumped 95 million gallons of water.

2012 Monthly Pumpage (MG)

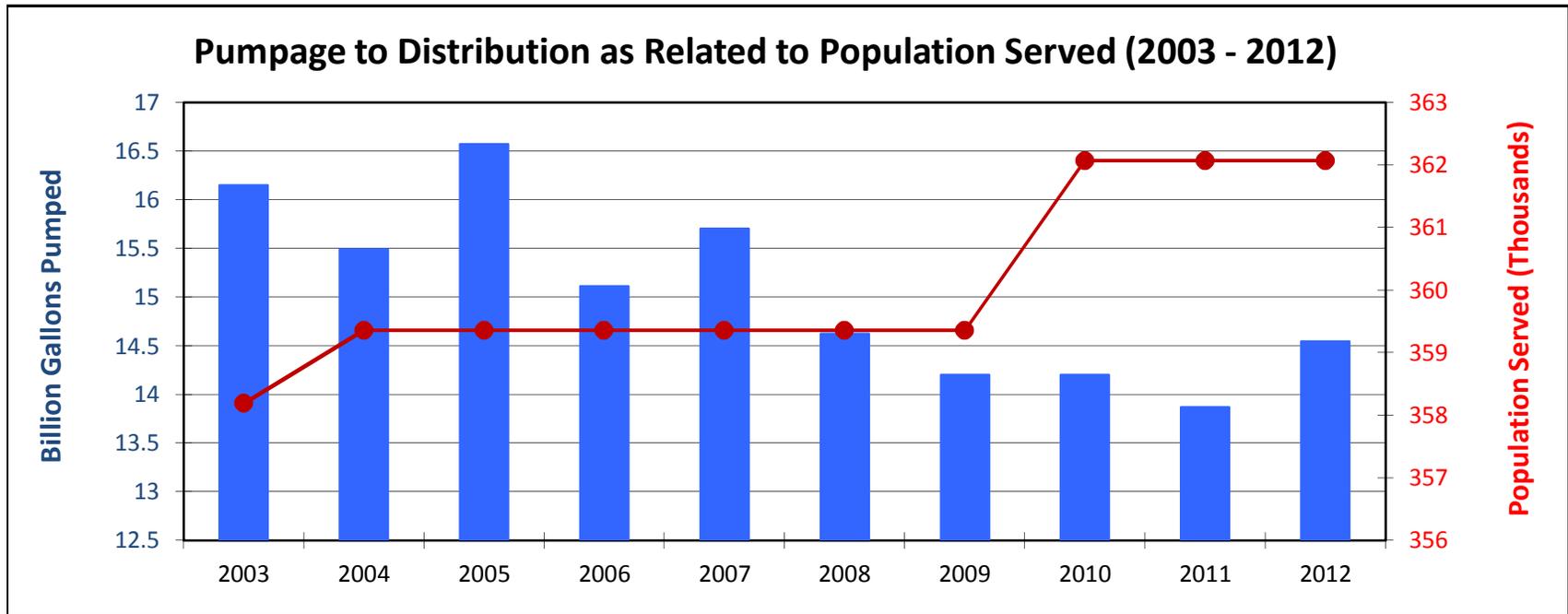
Month	Lake Water Pumpage	Wash Water Recycled	Net Raw Water Pumpage	Finished Water Pumpage	Plant Use	Pumpage To			
						Distribution	Evanston	Skokie	N.W.C.
Jan-12	1,104.665	14.737	1,089.928	1,095.405	5.618	1,089.787	209.601	246.834	633.253
Feb-12	1,032.777	21.433	1,054.210	1,022.496	5.957	1,016.539	207.992	217.104	591.443
Mar-12	1,072.317	13.834	1,086.151	1,063.491	6.460	1,057.031	222.386	227.675	606.971
Apr-12	1,083.573	16.207	1,099.780	1,058.465	7.663	1,050.802	220.747	218.182	611.873
May-12	1,304.982	25.140	1,330.122	1,270.244	8.547	1,261.697	254.489	254.694	752.514
Jun-12	1,598.533	32.315	1,630.848	1,578.712	8.242	1,570.470	296.070	337.120	937.280
Jul-12	1,719.192	47.489	1,766.681	1,720.298	8.955	1,711.343	319.229	348.128	1,043.987
Aug-12	1,428.439	42.077	1,470.516	1,408.888	6.229	1,402.659	271.111	294.138	837.410
Sep-12	1,259.794	34.447	1,294.241	1,241.710	6.269	1,235.441	229.765	261.118	744.558
Oct-12	1,134.695	29.789	1,164.484	1,113.754	7.787	1,105.967	227.446	234.549	643.973
Nov-12	1,036.301	27.900	1,064.201	1,021.757	4.677	1,017.080	204.674	213.517	598.889
Dec-12	1,042.369	16.934	1,059.303	1,031.895	4.035	1,027.860	195.373	214.945	617.543
Annual Total	14,817.637	322.302	15,110.465	14,627.115	80.439	14,546.676	2,858.883	3,068.004	8,619.694

2012 Average Day Pumpage (MGD)

Month	Lake Water Pumpage*	Wash Water Recycled	Net Raw Water Pumpage	Finished Water Pumpage	Plant Use	Pumpage To			
						Distribution	Evanston	Skokie	N.W.C.
Jan-12	35.634	0.475	35.159	35.336	0.181	35.154	6.761	7.962	20.428
Feb-12	36.885	0.765	37.650	36.518	0.213	36.305	7.428	7.754	21.123
Mar-12	34.591	0.446	35.037	34.306	0.208	34.098	7.174	7.344	19.580
Apr-12	36.119	0.540	36.659	35.282	0.255	35.027	7.358	7.273	20.396
May-12	42.096	0.523	35.477	40.976	0.276	40.700	8.209	8.216	24.275
Jun-12	53.284	1.077	54.362	52.624	0.275	52.349	9.869	11.237	31.243
Jul-12	55.458	1.532	56.990	55.493	0.201	55.205	10.298	11.230	33.677
Aug-12	46.079	1.357	47.436	45.448	0.202	45.247	8.746	9.488	27.013
Sep-12	41.993	1.148	43.141	41.390	0.260	41.181	7.659	8.704	24.819
Oct-12	36.603	0.961	37.564	35.928	0.151	35.676	7.337	7.566	20.773
Nov-12	34.543	0.930	35.473	34.059	0.156	33.903	6.822	7.117	19.963
Dec-12	33.625	0.546	34.171	33.287	0.130	33.157	6.302	6.934	19.921
Annual Average	40.596	0.883	41.399	40.074	0.220	39.854	7.833	8.405	23.616

Annual Pumpage (MG)

Year	Lake Water Pumpage	Wash Water Recycled	Total Raw Water Pumpage	Finished Water Pumpage	Plant Use	Pumpage To			
						Distribution	Evanston	Skokie	N.W.C.
2012	14,817.637	322.302	15,110.465	14,627.115	80.439	14,546.676	2,858.883	3,068.004	8,619.694
2011	13,939.618	212.426	14,152.042	13,941.167	71.215	13,869.954	2,920.633	2,866.652	8,082.667
2010	14,087.849	218.251	14,306.100	14,268.257	66.081	14,202.176	2,635.488	3,094.554	8,472.134
2009	14,363.047	193.841	14,556.888	14,350.335	150.804	14,199.531	2,990.094	2,829.824	8,379.613
2008	14,872.552	134.595	15,007.147	14,693.877	67.581	14,626.296	3,089.536	2,961.341	8,589.720
2007	15,905.381	192.088	16,097.469	15,771.451	66.705	15,704.746	3,140.717	3,564.781	8,999.248
2006	15,332.651	160.528	15,493.179	15,174.631	58.810	15,115.821	2,891.989	3,329.305	8,894.627
2005	16,823.362	184.937	17,008.299	16,634.025	61.313	16,572.712	3,303.763	3,544.779	9,724.170
2004	15,760.615	126.348	15,886.963	15,550.728	56.788	15,493.940	3,200.427	3,365.418	8,928.095
2003	16,387.185	152.037	16,539.222	16,204.109	51.259	16,152.850	3,448.090	3,624.902	9,079.858



Average Daily per Capita Consumption

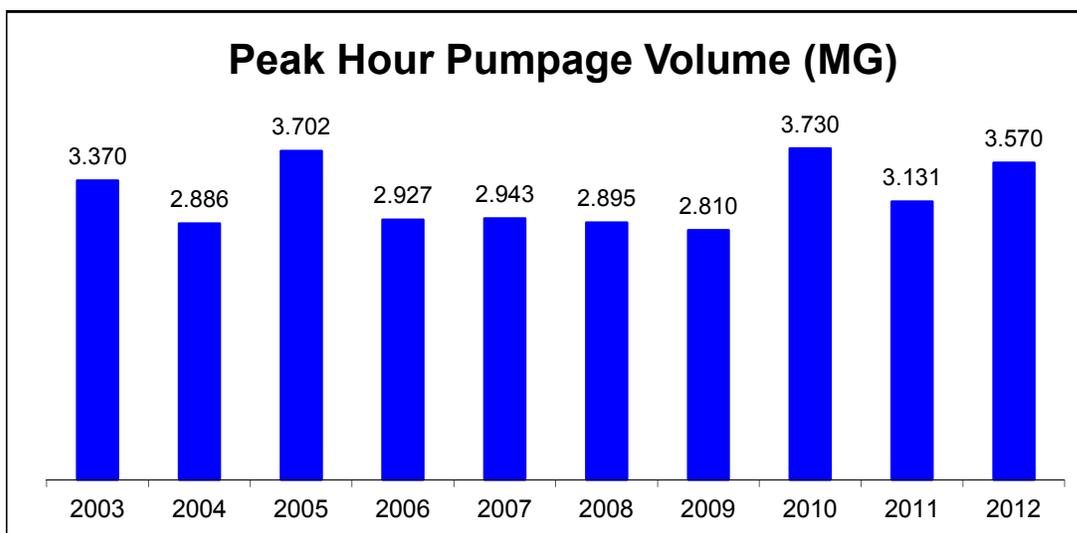
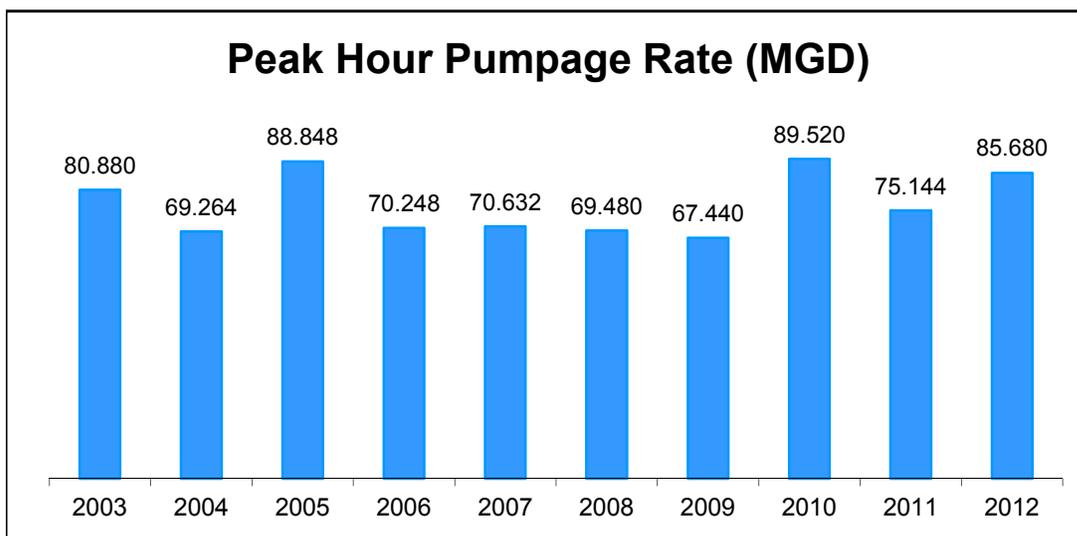
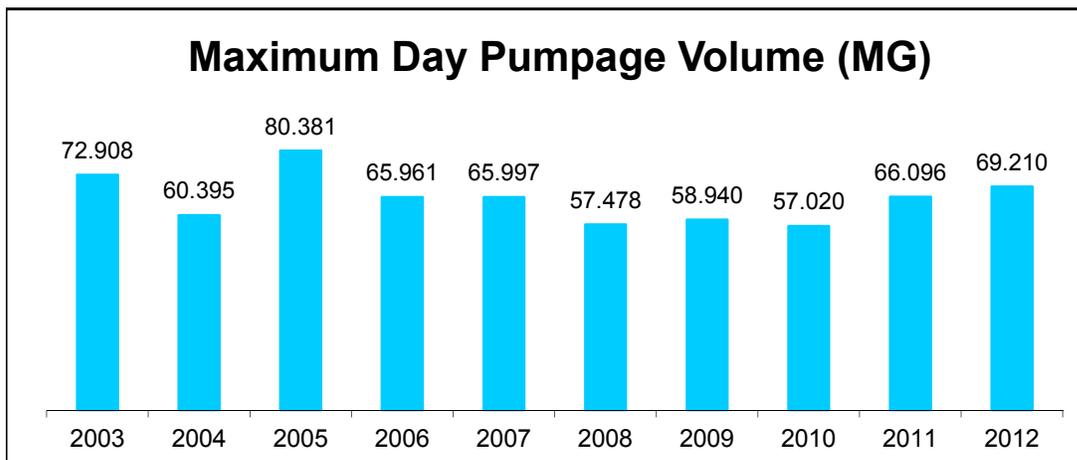
Year	Evanston		Skokie		NWC		Total	
	Population	Usage (gpcd)*	Population	Capita Use	Population	Capita Use	Population	Capita Use
2012	74,486	105	64,784	130	222,802	106	362,072	110
2011	74,486	107	64,784	121	222,802	99	362,072	105
2010	74,486	97	64,784	131	222,802	104	362,072	107
2009	74,360	110	63,333	122	221,364	104	359,057	108
2008	74,360	114	63,333	128	221,364	106	359,057	112
2007	74,360	116	63,333	154	221,364	111	359,057	120
2006	74,360	107	63,633	143	221,364	110	359,357	115
2005	74,360	122	63,633	153	221,364	120	359,357	126
2004	74,360	118	63,633	145	221,364	110	359,357	118
2003	73,421	129	63,126	157	221,643	112	358,190	124

Maximum Pumpage to Distribution

Year	Max Day Pumpage Volume (MG)	Peak Hour Pumpage Rate (MGD)	Peak Hour Pumpage Volume (MG)
2012	69.210	85.680	3.570
2011	66.096	75.144	3.131
2010	57.020	89.520	3.730
2009	58.940	67.440	2.810
2008	57.478	69.480	2.895
2007	65.997	70.632	2.943
2006	65.961	70.248	2.927
2005	80.381	88.848	3.702
2004	60.395	69.264	2.886
2003	72.908	80.880	3.370

Historical Maximum Day Pumpage: July 7, 1989 @ 95.154 MG

Maximum Day and Peak Hour Pumpage



Maximum Pumpage Days (MGD)

Year	Maximum Day Pumpage To			
	Distribution	Evanston	Skokie	NWC
2012	July 17th	July 17th	July 17th	July 6th
	69.210	18.580	13.579	43.775
2011	July 18th	July 18th	July 18th	July 19th
	66.096	12.614	13.724	40.820
2010	July 17th	July 29th	August 20th	July 19th
	57.020	13.643	12.957	34.661
2009	August 14th	August 13th	August 14th	August 6th
	58.940	13.992	11.495	34.725
2008	July 30th	July 30th	July 30th	July 29th
	57.478	11.788	11.495	33.670
2007	August 2nd	August 2nd	June 11th	August 2nd
	65.997	17.774	16.493	35.946
2006	August 1st	July 29th	August 1st	August 1st
	65.961	14.127	15.236	37.221
2005	June 24th	July 17th	June 24th	June 24th
	80.381	16.926	17.268	47.233
2004	August 2nd	August 3rd	July 2nd	July 30th
	60.395	14.497	11.895	35.471
2003	July 2nd	July 2nd	July 2nd	July 3rd
	72.908	16.650	16.269	40.619

Historical Maximum Day Pumpage to Distribution: July 7, 1989 @ 95.154 MG

Energy Costs

Electric Power - Kilowatt Hours (kWh) Used

Year	Total kWh	High Lift Pumping	Low Lift Pumping	Other Plant Use	Total Cost	Average Cost \$/kWh
2012	13,706,324	8,746,588	2,653,728	2,306,007	\$924,422	\$0.067
2011	13,462,281	8,638,793	2,632,361	2,191,127	\$841,245	\$0.062
2010	12,009,162	7,560,661	2,254,243	2,194,258	\$821,166	\$0.068
2009	11,290,287	7,261,345	2,230,893	1,798,049	\$829,181	\$0.073
2008	13,721,463	7,947,533	2,997,940	2,775,990	\$934,832	\$0.068

Natural Gas Used for Pumping and Emergency Engines*

Year	Therms	Total Cost**	Average Cost \$/Therm
2012	124,954	\$83,901	\$0.671
2011	225,100	\$116,272	\$0.517
2010	51,552	\$32,237	\$0.625
2009	37,203	\$28,274	\$0.760
2008	41,795	\$87,324	\$2.089

* Includes natural gas purchase and delivery charges.

** 2011 cost is elevated due to switchgear fire, which required extended emergency generator use.

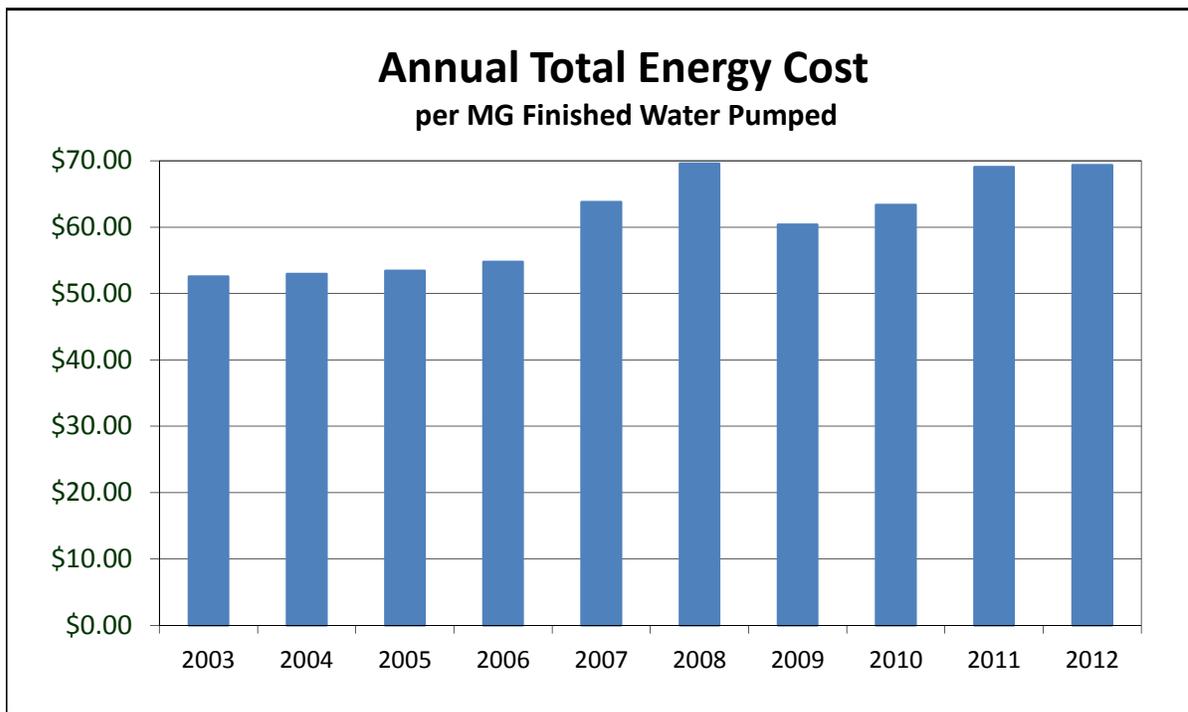
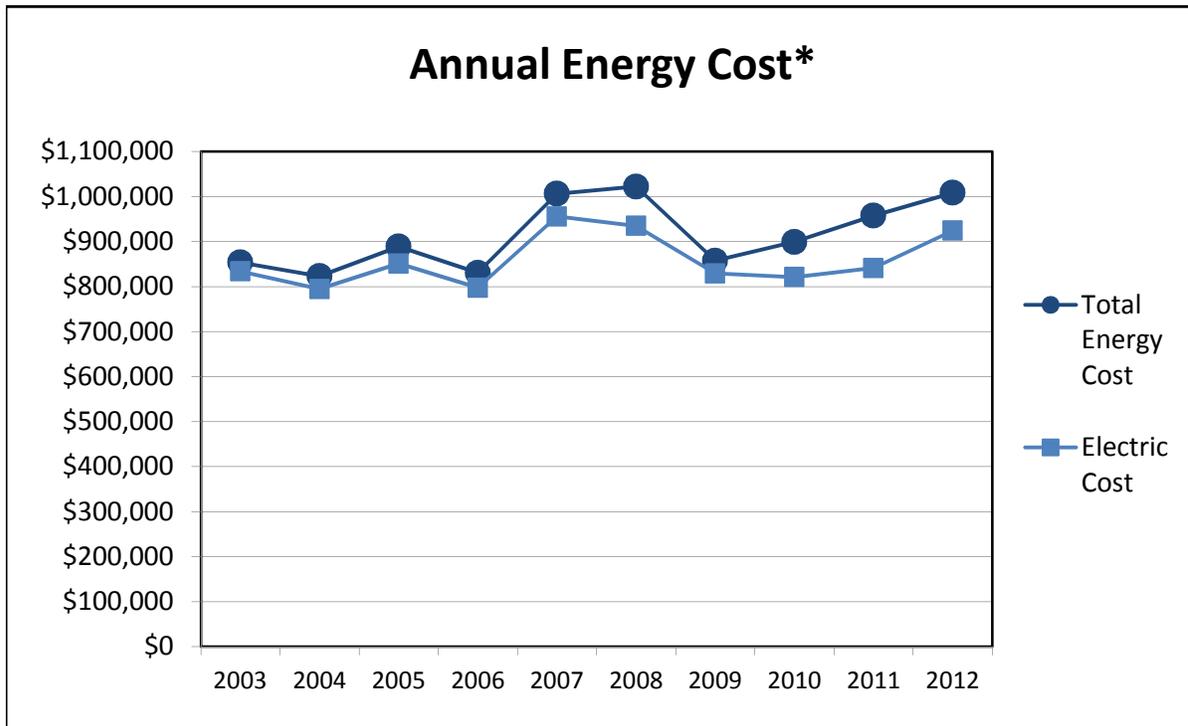
Total Energy Cost (Electric & Gas)

Year	High Lift	Low Lift	Plant Use	Total
2012	\$643,454	\$195,225	\$169,644	\$1,008,323
2011	\$614,442	\$187,229	\$155,846	\$957,517
2010	\$547,791	\$201,441	\$150,038	\$899,264
2009	\$551,481	\$169,433	\$136,541	\$857,455
2008	\$592,037	\$223,326	\$206,792	\$1,022,156

Total Energy Cost Per Million Gallons of Finished Water Pumped

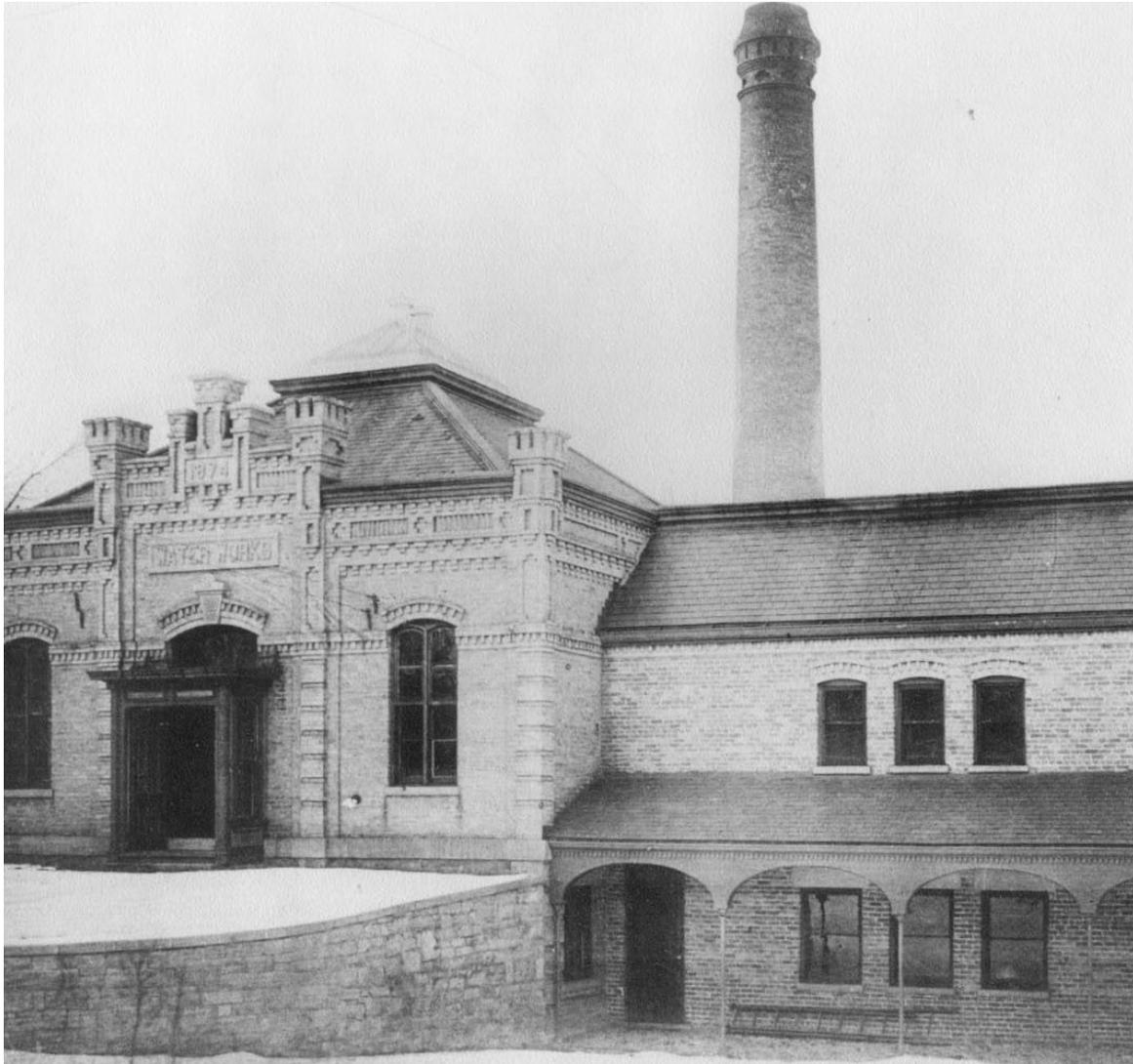
2012	\$69.32
2011	\$69.04
2010	\$63.32
2009	\$60.38
2008	\$69.56

Energy Costs



* Energy costs increased in 2012 due to increased pumping during the summer drought.

Filtration



The original plant received an addition in 1888, allowing the installation of a second Holly engine. This was originally intended to replace the first engine, but growing demand kept both engines running. In 1892, the village of South Evanston was annexed, becoming a water user.

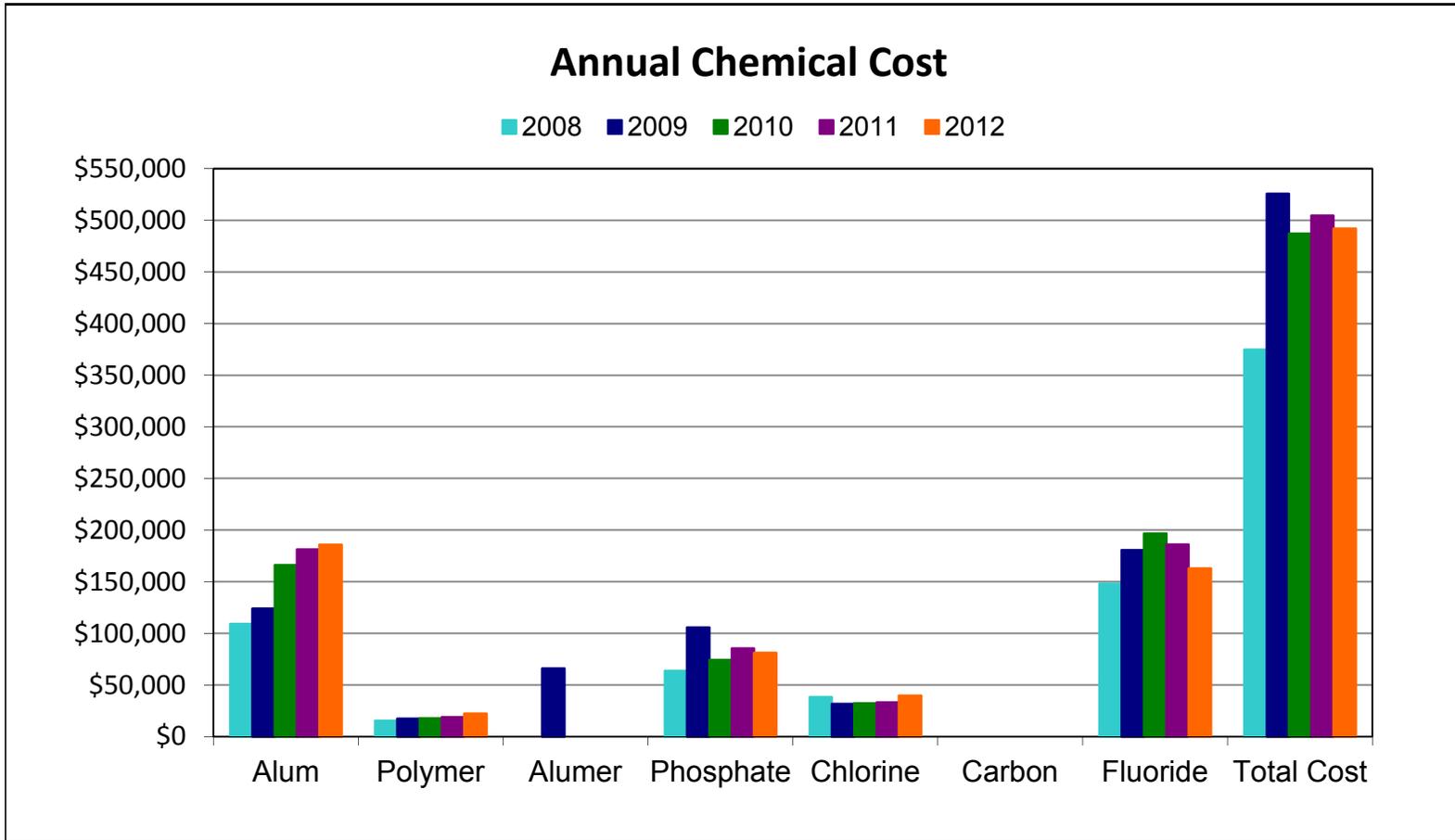
Chemical Treatment: Chemicals Used and Costs

	Chemical Feed (lbs/MG)			Unit Cost	Pounds per Year	Total Cost	Cost per MG Treated
	Avg Daily	Max Day	Min Day				
Aluminum Sulfate							
2012	55.9	101.6	30.2	\$447.28 / dry ton	830,624	\$185,761	\$12.27
2011	63.0	103.8	39.6	\$413.87 / dry ton	870,836	\$181,138	\$12.80
2010	59.0	103.8	39.3	\$400.10 / dry ton	830,688	\$166,179	\$11.62
2009	53.6	100.5	31.7	\$440.00 / dry ton	607,724	\$124,161	\$12.09
2008	56.3	92.4	39.2	\$261.28 / dry ton	835,780	\$109,186	\$7.27
Alumer*							
2009	35.5	76.5	24.3	\$420.00/ dry ton	146,180	\$66,116	\$15.93
2004	30.1	55.6	18.1	\$122.00/ dry ton	476,768	\$66,582	\$4.19
Chlorine							
2012	12.0	20.0	7.0	\$424.50 / ton	187,315	\$39,758	\$2.63
2011	12.7	18.8	8.4	\$367.50 / ton	180,870	\$33,235	\$2.35
2010	12.3	16.2	8.8	\$367.50 / ton	176,125	\$32,363	\$2.26
2009	11.9	17.6	7.3	\$367.00 / ton	172,880	\$31,767	\$2.20
2008	13.8	16.5	8.2	\$420.00 / ton	182,965	\$38,423	\$2.56
Activated Carbon**							
Hydrofluosilic Acid (Fluoride)							
2012	36.2	38.2	33.3	\$596.00 / ton	547,011	\$163,009	\$10.77
2011	38.4	53.0	26.5	\$685.00 / ton	542,886	\$185,938	\$13.14
2010	40.1	42.8	37.8	\$685.00 / ton	574,004	\$196,597	\$13.75
2009	39.4	43.0	23.1	\$635.00 / ton	568,907	\$180,628	\$12.51
2008	38.9	64.7	27.6	\$507.00 / ton	584,214	\$148,098	\$9.86
Polymer							
2012	3.4	6.1	2.0	\$870.00 / ton	51,318	\$22,323	\$1.47
2011	3.9	6.5	2.3	\$700.00 / ton	53,499	\$18,725	\$1.32
2010	3.6	6.2	2.3	\$700.00 / ton	50,316	\$17,611	\$1.23
2009	3.7	6.2	2.0	\$660.00 / ton	52,801	\$17,424	\$1.21
2008	3.4	5.7	2.2	\$612.00 / ton	50,488	\$15,449	\$1.03
Blended Phosphate							
2012	12.3	18.5	11.0	\$5.15 / gallon	181,034	\$81,072	\$5.35
2011	14.7	19.1	10.7	\$4.83 / gallon	203,601	\$85,512	\$6.04
2010	12.5	18.4	10.7	\$4.83 / gallon	176,954	\$74,321	\$5.20
2009	12.7	14.9	10.9	\$6.71 / gallon	181,070	\$105,650	\$7.32
2008	13.9	14.8	12.4	\$3.58 / gallon	204,336	\$63,691	\$4.24

* Alumer is a mixture of aluminum sulfate and polymer that was tested in 2004, and used from 5/27/09 to 8/29/09.

** Carbon can be fed for taste and odor control, though this has not been necessary since 2005.

Annual Chemical Costs



Filter Operations

Filter Runs

Year	Avg Hours per Filter Run		Total Hours per Year	
	3 MGD	6 MGD	3 MGD	6 MGD
2012	208.7	171.5	96,000	92,402
2011	229.1	197.3	96,336	88,162
2010	229.2	198.8	96,286	100,046
2009	253.8	239.2	97,313	94,790
2008	266.7	228.5	97,050	100,601
2007	234.9	200.7	91,395	104,530
2006	245.4	226.9	105,043	105,059
2005	224.7	201.7	104,595	105,031
2004	266.7	249.5	105,965	105,110
2003	231.4	191.4	104,419	105,419

Filter Washes

Year	Total Washes per Year		Max # of Washes per Day	
	3 MGD	6 MGD	3 MGD	6 MGD
2012	476	611	7	9
2011	430	486	5	6
2010	452	559	7	7
2009	387	409	6	5
2008	369	460	6	6
2007	425	569	6	7
2006	453	503	5	6
2005	522	614	6	8
2004	404	419	6	7
2003	687	620	7	8

Wash Water

Year	Total (MG)	Avg Daily %	Max Daily %
2012	321.030	2.13	9.72
2011	211.546	1.49	5.14
2010	223.704	1.53	15.20
2009	149.063	1.02	4.54
2008	145.593	0.95	4.15
2007	192.135	1.15	4.86
2006	160.264	1.01	3.25
2005	184.088	1.03	3.45
2004	127.261	0.79	4.22
2003	151.751	0.88	2.93

Bacteriological Water Analysis (Membrane Filter Method)

Report of Evanston Water Quality Control Laboratory

The U.S. Environmental Protection Agency (EPA) standard is based on the presence or absence of total coliform bacteria in a water sample. The EPA requires that no more than 5% of monthly samples from the City's water distribution system test positive for the presence of total coliform. Evanston is required to collect 80 water samples per month from the distribution system.

Distribution System		Positive for	Positive for
Year	Number Sampled	Total Coliform	Fecal Coliform
2012	995	2	0
2011	993	4	0
2010	994	4	1
2009	965	2	0
2008	992	2	0

Additional Bacteriological Samples Analyzed for the Village of Skokie

Year	Number Sampled
2012	914
2011	900
2010	941
2009	918
2008	927

Raw Water	Number Sampled	Colony Count	
		Average	Maximum
2012	732 (Twice Daily)	41	>200
2011	730 (Twice Daily)	102	>200
2010	730 (Twice Daily)	96	>200
2009	730 (Twice Daily)	59	>200
2008	730 (Twice Daily)	46	>200

After Primary Treatment	Number Sampled	Colony Count	
		Average	Maximum
2012	732 (Twice Daily)	0	0
2011	730 (Twice Daily)	0	0
2010	730 (Twice Daily)	0	0
2009	730 (Twice Daily)	0	0
2008	732 (Twice Daily)	0	0

Plant Tap A.M. and P.M. Samples	Number Sampled	Colony Count	
		Average	Maximum
2012	1464 (4 times Daily)	0	0
2011	1460 (4 times Daily)	0	0
2010	1460 (4 times Daily)	0	0
2009	1460 (4 times Daily)	0	0
2008	1460 (4 times Daily)	0	0

Taste & Odor, Turbidity, Temperature and Fluoride Report of Water Quality Control Laboratory

Taste & Odor

Year	Number of Tests*
2012	504
2011	756
2010	2,190
2009	2,190
2008	2,190

Turbidity (Expressed in Nephelometric Turbidity Units or NTU)

EPA standard is <0.3 NTU in 95% of samples and never >1 NTU in any single sample of finished water.

Year	Raw Water			After Primary Treatment			Plant Tap		
	Avg	Max	Min	Avg	Max	Min	Avg	Max	Min
2012	9.59	124.0	0.55	0.74	2.71	0.25	0.08	0.18	0.06
2011	19.66	143.0	0.54	0.98	4.20	0.06	0.08	0.40	0.06
2010	13.50	127.0	0.51	0.79	2.60	0.27	0.09	0.23	0.06
2009	10.07	100.0	0.42	0.72	1.81	0.27	0.08	0.14	0.05
2008	8.27	65.4	0.41	0.68	1.62	0.21	0.08	0.14	0.06

Raw Water Temperature

Year	Average	Maximum	Minimum
2012	12.9°C / 55.3°F	26.8°C / 80.2°F	2.1°C / 35.8°F
2011	11.3°C / 52.3°F	25.0°C / 77.0°F	0.8°C / 33.4°F
2010	10.6°C / 51.2°F	22.0°C / 71.6°F	0.8°C / 33.4°F
2009	10.3°C / 50.5°F	22.3°C / 72.1°F	0.8°C / 33.4°F
2008	11.2°C / 52.2°F	24.1°C / 75.4°F	1.0°C / 33.8°F

Fluoride Content (ppm)

E.P.A. standard is 0.9 to 1.2 ppm.

Year	Plant Tap			Distribution		
	Avg	Max	Min	Avg	Max	Min
2012	0.98	1.09	0.90	0.98	1.08	0.90
2011	0.99	1.11	0.90	1.00	1.11	0.90
2010	0.98	1.11	0.90	0.98	1.09	0.90
2009	1.01	1.20	0.90	1.03	1.19	0.92
2008	0.96	1.08	0.90	0.98	1.11	0.90

* Taste & Odor testing requirements changed in 2011 (fewer days per week and fewer samples per day)

Chlorine Residual (ppm)

Report of Water Quality Control Laboratory

Filter Influent

Year	Free Residual			Total Residual		
	Avg	Max	Min	Avg	Max	Min
2012	0.68	1.04	0.44	0.81	1.19	0.54
2011	0.67	0.96	0.42	0.81	1.14	0.49
2010	0.63	0.94	0.26	0.78	1.11	0.36
2009	0.59	0.89	0.28	0.76	1.13	0.46
2008	0.65	0.90	0.41	0.82	1.12	0.36

Filter Effluent

Year	Free Residual			Total Residual		
	Avg	Max	Min	Avg	Max	Min
2012	0.59	0.92	0.40	0.71	1.04	0.51
2011	0.58	0.86	0.36	0.71	0.99	0.48
2010	0.55	0.85	0.23	0.70	0.96	0.48
2009	0.50	0.86	0.22	0.66	1.06	0.39
2008	0.54	0.76	0.27	0.70	0.92	0.43

Plant Tap

Year	Free Residual			Total Residual		
	Avg	Max	Min	Avg	Max	Min
2012	0.67	1.00	0.48	0.81	1.15	0.60
2011	0.67	0.94	0.49	0.81	1.17	0.62
2010	0.66	0.83	0.48	0.82	1.05	0.62
2009	0.65	0.89	0.48	0.82	1.11	0.56
2008	0.68	0.91	0.51	0.84	1.08	0.64

Distribution Tap

Year	Free Residual			Total Residual		
	Avg	Max	Min	Avg	Max	Min
2012	0.44	0.90	0.13	0.59	1.05	0.30
2011	0.43	0.94	0.15	0.59	0.86	0.28
2010	0.41	0.82	0.07	0.58	0.98	0.20
2009	0.42	0.71	0.10	0.59	0.87	0.23
2008	0.44	0.65	0.02	0.61	0.88	0.11

pH, Alkalinity and Hardness

Report of Water Quality Control Laboratory

pH

EPA standard is 7.1 - 7.9.

Year	Number of Tests	Raw Water			Plant Tap		
		Avg	Max	Min	Avg	Max	Min
2012	732	8.3	8.5	8.1	7.6	7.9	7.6
2011	730	8.3	8.5	8.0	7.6	7.8	7.4
2010	730	8.3	8.6	7.9	7.6	7.8	7.3
2009	729	8.3	8.6	7.6	7.6	7.8	7.1
2008	730	8.2	8.5	7.7	7.6	7.8	7.1

Alkalinity (ppm)

Year	Number of Tests	Raw Water			Plant Tap		
		Avg	Max	Min	Avg	Max	Min
2012	732	105	112	92	98	108	84
2011	730	106	116	93	99	110	74
2010	730	103	115	85	97	111	84
2009	730	104	118	91	97	119	80
2008	730	106	134	11	98	130	86

Hardness (ppm as CaCO₃)

Year	Number of Tests	Raw Water			Finished Water		
		Avg	Max	Min	Avg	Max	Min
2012	732	136	149	124	132	149	134
2011	730	135	148	120	133	149	118
2010	730	133	151	122	132	151	120
2009	730	132	152	100	130	150	94
2008	730	132	144	123	131	150	120

Detected Substances

2012 Water Quality Data

Substance	Highest Allowed (MCL)	MCL Goal	Evanston Result	Evanston Minimum	Evanston Maximum	Source of Contamination
Turbidity (NTU)	TT=Monitored by % Exceeding 0.3 NTU and max allowed is 1 NTU	NA	100% of samples meet 0.3 NTU	0.06	0.18	Soil runoff
Fluoride (ppm)	4.00	4.00	1.0	0.90	1.08	Added to promote strong teeth
Nitrate (measured as Nitrogen in ppm)	10	10	0.3	0.3	0.3	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Sodium (ppm)	NA	NA	7.3	7.3	7.3	Runoff and natural erosion
Barium (ppm)	2	2	0.020	0.020	0.020	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Total Coliform Bacteria	5% of Monthly Samples are Positive	0	1.2%	NA	NA	Naturally present in the environment
Combined Radium 226/228 (pCi/L)	15	0	0.82	0.82	0.82	Erosion of natural deposits
Gross Alpha excluding Radon and Uranium (pCi/L)	15	0	3.9	3.9	3.9	Erosion of natural deposits
Lead (ppb)	Action Level = 15	0	4.2	<1	6.1	Corrosion of household plumbing systems; Erosion of natural deposits
Copper (ppm)	Action Level = 1.3	1.3	0.1800	0.0023	0.9400	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems
Sulfate (ppm)	<i>Unregulated Contaminant</i>	250	23	23	23	Naturally occurring coagulant residual
Nicotine (ppb)	<i>Unregulated Contaminant</i>	N/A	0.007	0.007	0.007	Alkaloid found in tobacco, insecticide
Theobromine (ppb)	<i>Unregulated Contaminant</i>	N/A	0.06	0.06	0.06	Stimulant found in cocoa beans, kola nut, tea

Disinfectants and Disinfection By-Products

2012 Water Quality Data

Substance	Highest Allowed (MCL)	MCL Goal	Evanston Result	Evanston Minimum	Evanston Maximum	Source of Contamination
Total Trihalomethanes (ppb)	80	NA	23	15.2	36	By-product of drinking water chlorination
Total Haloacetic Acids (ppb)	60	NA	9.0	2.6	9.6	By-product of drinking water chlorination
Chlorine (ppm)	4 MRDL	4 MRDLG	0.50	0.38	0.50	Water additive used to control microbes

Non-Detected Contaminants

2012 Water Quality Data

Inorganic Contaminants	MCLG	MCL	UL MRL	Level Found
ARSENIC (ppb)	none	50	2	nd
CADMIUM (ppb)	5	5	1	nd
CHROMIUM (ppb)	100	100	2.0	nd
CYANIDE (ppb)	200	200	0.02	nd
IRON (ppb)	n/a	1000	0.02	nd
MANGANESE (ppb)	n/a	150	2	nd
MERCURY (INORGANIC) (ppb)	2	2	0.1	nd
NICKEL	n/a	100	1	nd
SELENIUM (ppb)	50	50	2	nd
ANTIMONY (ppb)	6	6	1	nd
BERYLLIUM (ppb)	4	4	0.3	nd
THALLIUM (ppb)	0.5	2	0.4	nd
ZINC (ppb)	n/a	5000	5	nd
NITRITE (AS NITROGEN) (ppm)	1	1	0.01	nd

Synthetic Organic Contaminants

ENDRIN (ppb)	2	2	0.1	nd
BHC- GAMMA (LINDANE)	200	200	0.1	nd
METHOXYCHLOR (ppb)	40	40	0.1	nd
TOXAPHENE (ppb)	0	3	1	nd
DIQUAT (ppb)	20	20	2	nd
DALAPON (ppb)	200	200	5	nd
ENDOTHALL (ppb)	100	100	9	nd
DI(2-ETHYLHEXYL)ADIPATE (ppb)	400	400	0.6	nd
OXAMYL (VYDATE) (ppb)	200	200	2	nd
SIMAZINE (ppb)	4	4	0.35	nd
DI(2-ETHYLHEXYL)PHTHALATE (ppb)	0	6	0.6	nd
PICHLORAM (ppb)	500	500	0.4	nd
DINOSEB (ppb)	7	7	1	nd
HEXACHLOROCYCLOPENTADIENE (ppb)	50	50	0.5	nd
ALDICARB SULFOXIDE	n/a	n/a	1	nd
ALDICARB SULFONE	n/a	n/a	1	nd
CARBOFURAN (ppb)	40	40	0.9	nd
ALDICARB	n/a	n/a	1	nd
ATRAZINE (ppb)	3	3	0.3	nd
ALACHLOR (LASSO)(ppb)	0	2	0.2	nd
HEPTACHLOR	0	100	0.04	nd
HEPTACHLOR EPOXIDE (ppt)	0	100	0.02	nd
DIELDRIN	n/a	1	0.05	nd
2,4-Dichloro-Phenoxyacetic Acid (2,4-D) (ppb)	10	10	1	nd
2,4,5-TP (SILVEX) (ppb)	50	50	1	nd
HEXACHLOROBENZENE (ppb)	0	1	0.1	nd
BENZO (A) PYRENE (ppb)	0	200	0.1	nd
PENTACHLOROPHENOL (PCP) (ppb)	0	1	0.4	nd
ALDRIN (ppb)	n/a	1	0.05	nd
POLYCHLORINATED BIPHENYLS (PCB) (ppb)	0	500		nd
TOTAL DDT (ppb)	n/a	50*	1	nd
1,2 DIBROMO3-CHLOROPROPANE (DBCP) (ppb)	0	0.2	0.02	nd
ETHYLENE DIBROMIDE (EDB) (ppb)	0	50	0.01	nd
CHLORDANE (ppb)	0	2	0.2	nd

Non-Detected Contaminants

2012 Water Quality Data

Radionuclides	MCLG	MCL	UL MRL	Level Found
COMBINED RADIUM - 226,228 (pCi/L)	0	5		nd

THM/HAA s	MCLG	MCL	UL MRL	Level Found
MONOCHLORACETIC ACID (ppb)	70	70	2.0	nd
MONOBROMOACETIC ACID (ppb)	na	na	1.0	nd

Unregulated Contaminants	MCLG	MCL	UL MRL	Level Found
Epichlorohydrin (ppb)	na	na	1	nd
Acrylamide (ppb)	na	na	0.5	nd
Bisphenol A (ppb)	na	na	0.1	nd
Nonylphenol, isomer mix (ppb)	na	na	0.5	nd
4-n-Octylphenol (ppb)	na	na	0.5	nd
4-tert-Octylphenol (ppb)	na	na	0.5	nd
Pentachlorophenol (ppb)	na	na	0.1	nd
Phenylphenol (ppb)	na	na	0.1	nd
Tetrabromobisphenol A (ppb)	na	na	0.1	nd
2,4,6-Trichlorophenol (ppb)	na	na	0.1	nd
Pharmaceutically Active Compounds Positive	na	na	varies	nd
Pharmaceutically Active Compounds Negative	na	na	varies	nd
Perfluorooctanoic acid (PFOA)	na	na	0.01	nd

MCL= Maximum Contaminant Level

MCLG = Maximum Contaminant Level Goal

UL MRL= Underwriters Laboratories Minimum Reporting Level

Lead and Copper Statement

Report of Water Quality Control Laboratory

There is no detectable lead in the water produced by the City of Evanston's water treatment plant. Lead enters the water from lead solder and/or lead pipes in water services, or through plumbing fixtures. To minimize contamination resulting from corrosion, the EPA established a lead action level of 15 parts per billion (ppb) in 1992. The 90th percentile result of samples analyzed for lead and copper content in homes with lead pipes must be less than the action levels of 15 ppb and 1.3 ppm, respectively.

Lead and copper sampling is performed every three years in compliance with state law. In 2011, Evanston sampled water from 30 homes with lead service lines and analyzed them for lead and copper content. All results were below the action levels. The 90th percentile level for lead in these samples was 4.2 ppb. The 90th percentile level for copper was 0.18 ppm.

Definitions and General Explanations

Action Level – The concentration of a contaminant, which, if exceeded, triggers treatment or other required actions by the water supply.

Disinfection By-Products – Total Trihalomethanes and Total Haloacetic Acids are used to regulate the amount of allowable by-products of chlorination.

EPA – Environmental Protection Agency

Fluoride – The Illinois Department of Public Health recommends an optimal fluoride range of 0.9 to 1.2 ppm

Lead and Copper – There is no detectable lead in the water provided to the Evanston community. Lead enters the water from lead solder, lead pipes, or plumbing fixtures. To minimize contamination resulting from corrosion, the EPA established a lead action level of 15 parts per billion (ppb) in 1992. The 90th percentile result of samples analyzed for lead and copper content in homes with lead pipes must be less than the action level of 15 ppb and 1.3 ppm respectively.

MCL – Maximum Contaminant Level, the highest level of a contaminant that is allowed in drinking water. A MCL is set as close to a MCLG as feasible using the best available treatment technology.

MCLG – Maximum Contaminant Level Goal, the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

mg CaCO₃/L – milligrams of calcium carbonate per liter.

mrem/yr – Millirems Per Year. A measure of radiation absorbed by the body.

MRDL – Maximum Residual Disinfection Level. The highest level of disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

MRDLG – Maximum Residual Disinfection Level Goal. The level of disinfectant in drinking water below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

NA – Not applicable.

NTU – Nephelometric Turbidity Units. A measure of the cloudiness of water.

pCi/L – Picocuries per liter. A measure of radioactivity.

ppm – Parts per million. A measure of the concentration of a substance in water. An equivalent unit of measurement is milligrams per liter (mg/L).

ppb – Parts per million. A measure of the concentration of a substance in water. An equivalent unit of measurement is micrograms per liter (µg/L).

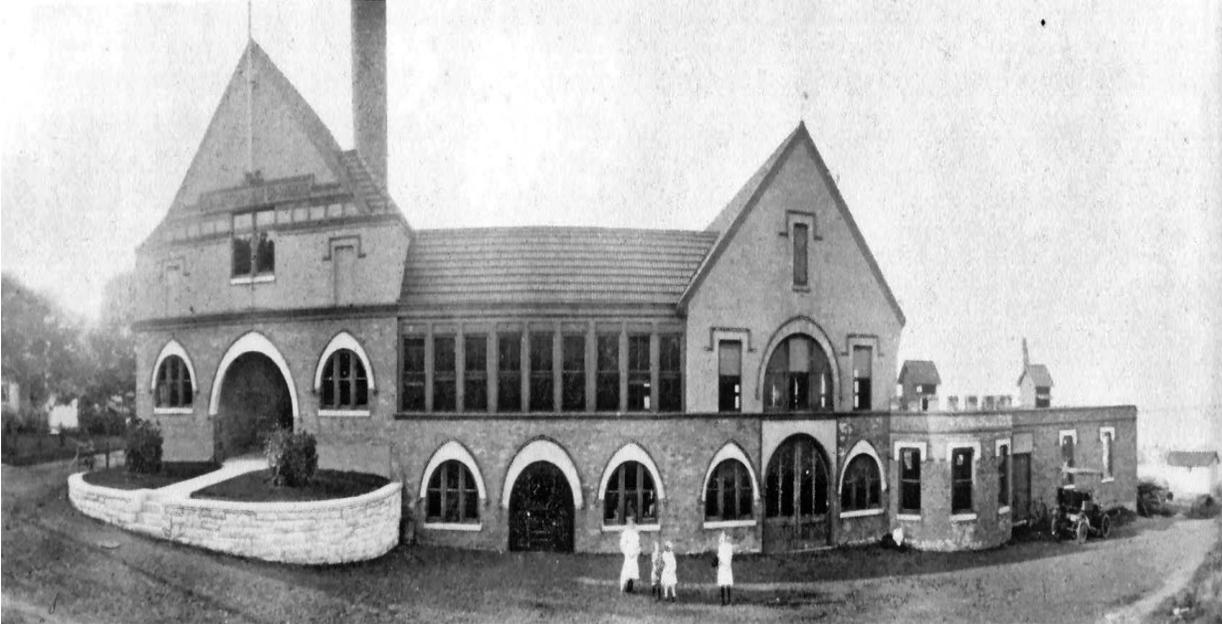
Sodium – There is not a state or federal MCL for sodium. Sodium levels below 20 mg/L (ppm) are not considered to be a public health issue.

TT – Treatment Technique. A required process to reduce the level of a contaminant.

Turbidity – A measurement of the cloudiness of the water caused by suspended particles. This is monitored because it is a good indicator of water quality as well as the effectiveness of the filtration and disinfection processes.

TOC – Total Organic Carbon. The Evanston Water Supply monitored the percentage of TOC removal quarterly and met all TOC removal requirements set by the EPA.

Distribution



In 1897, the plant received a remodeling and enlargement, as well as a third Holly engine with a capacity of 12 million gallons a day. In 1914, a filter plant was built, making Evanston the first city along Lake Michigan with water treatment. The decline in typhoid and dysentery rates as a result of clean water helped spur Evanston's growth in the years to come.

Fire Hydrants

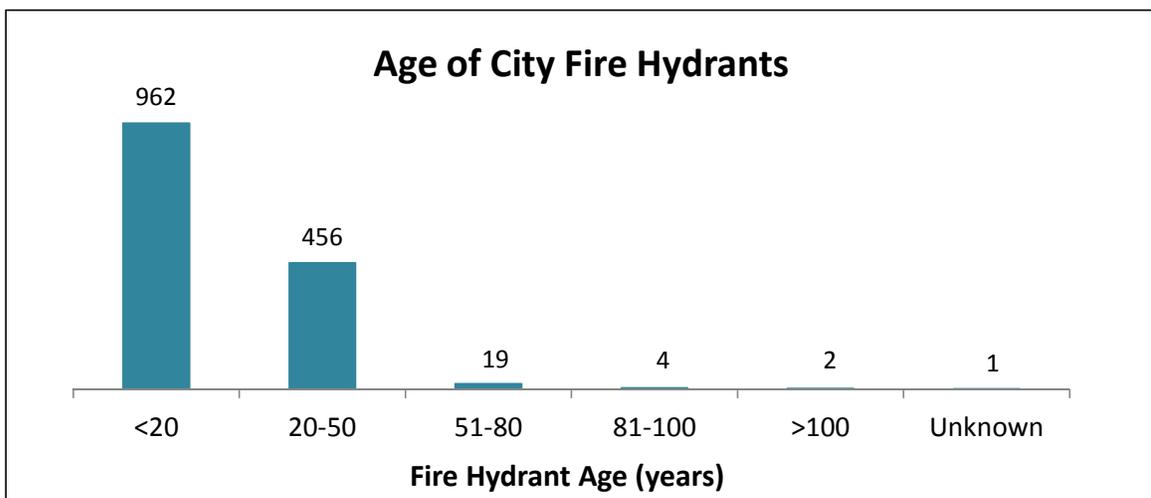
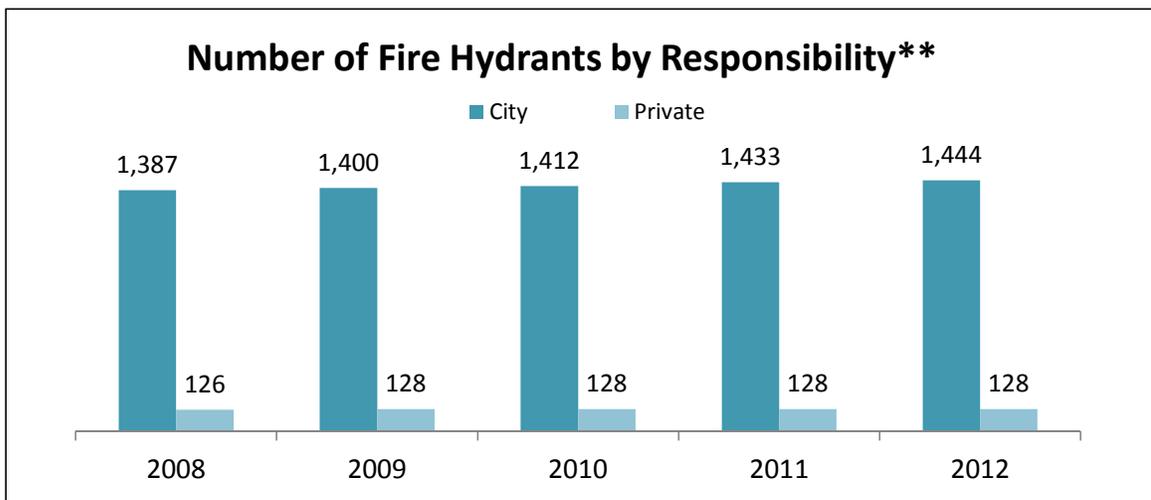
System Data and Maintenance*

Hydrants Tested

for Proper Operation	2008	2009	2010	2011	2012
Fire Department	1,330	1,630	1,394	1,410	1,400
Utilities Department	57	84	92	126	42

Hydrant Installation and Maintenance

	2008	2009	2010	2011	2012
Installed (new)	11	6	11	19	10
Replaced	19	18	19	22	17
Repaired	33	119	114	176	73



* All work completed by Utilities Department staff unless otherwise noted.

** Changes from year to year are primarily due to removal/addition of hydrants during water main replacement projects, and GIS map corrections.

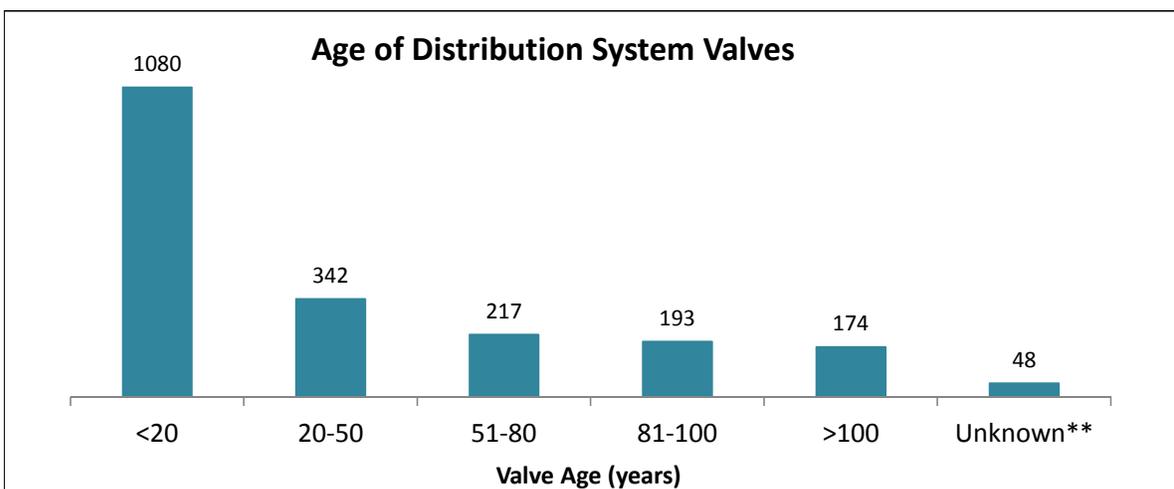
Valves

System Data and Maintenance*

Valves Turned for Proper Operation	2008	2009	2010	2011	2012
In-House	267	254	1,400	807	1,071
Contractor	488	0	0	0	0

Valve Installation and Maintenance	2008	2009	2010	2011	2012
Installed (new)	11	14	12	10	11
Replaced	20	20	36	25	26
Repaired	19	21	44	24	38

Number of Distribution Valves by Size	2008	2009	2010	2011	2012
3"	1	1	1	1	1
4"	30	34	30	30	29
6"	1053	1050	1033	1,021	1,007
8"	433	435	452	469	484
10"	178	183	183	183	184
12"	205	211	222	227	235
14"	2	2	2	2	2
16"	48	49	49	49	49
18"	4	4	4	4	4
20"	2	2	1	1	2
24"	30	30	30	30	30
30"	11	11	11	11	11
36"	12	12	12	12	12
42"	2	2	2	2	2
48"	2	2	2	2	2
Total	2,013	2,028	2,034	2,044	2,054



* All work completed by Utilities Department staff unless otherwise noted.

** Valves are not accessible for field verification of age and other attributes because they are buried beneath paved surfaces. These valves are only accessible for operation from the surface.

Water Mains

System Data and Maintenance*

Water Main Installation (lineal feet installed)

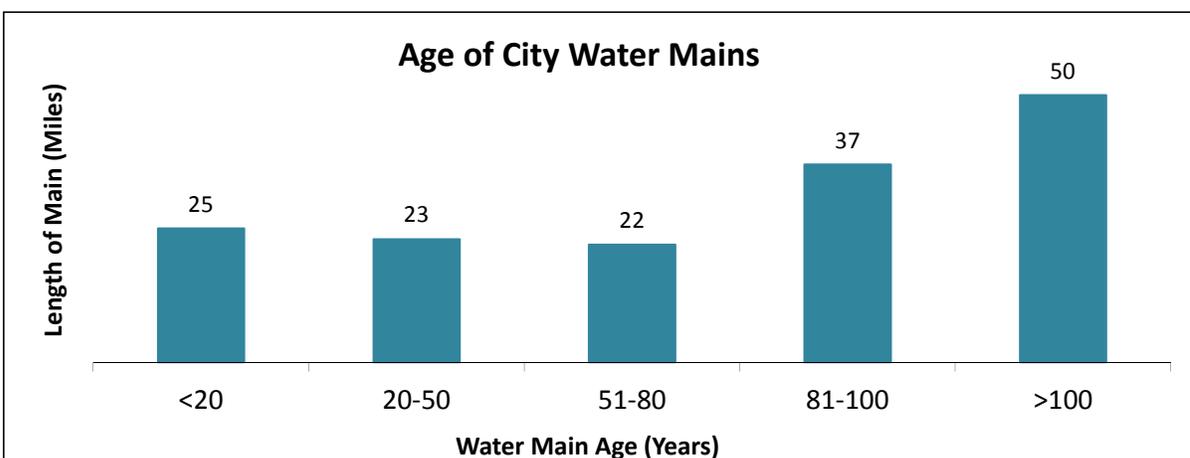
	2008	2009	2010	2011	2012
In-House	0	7	0	0	181
Contractor	0	0	7,712	7,235	10,485

Water Main Break Repairs

	2008	2009	2010	2011	2012
Blow-Out	23	17	26	16	56
Shear Break	32	10	10	11	8
Damage	1	0	0	0	2
Total	56	27	36	27	66

Water Main Sizes**

(length in miles)	2008	2009	2010	2011	2012
3"	0.15	0.15	0.15	0.15	0.15
4"	2.38	2.38	1.95	1.95	1.69
6"	79.71	79.71	78.66	77.49	76.03
8"	29.06	29.06	25.72	26.69	27.74
10"	12.43	12.43	12.46	12.46	12.32
12"	16.05	16.05	16.55	16.88	17.42
14"	0.37	0.37	0.37	0.37	0.37
16"	6.35	6.35	6.35	6.35	6.35
18"	0.83	0.83	0.83	0.83	0.83
20"	0.56	0.56	0.49	0.56	0.56
24"	8.25	8.25	8.25	8.30	8.30
30"	1.69	1.69	1.69	1.69	1.69
36"	3.28	3.29	3.30	3.30	3.30
42"	0.04	0.04	0.04	0.04	0.04
48"	0.68	0.69	0.68	0.68	0.68
Total	161.83	161.85	157.48	157.73	157.45



* All work completed by Utilities Department staff unless otherwise noted.

** Changes from year to year are primarily due to removal/addition of water main during water main replacement projects and GIS map corrections.

Water Services

System Data and Maintenance*

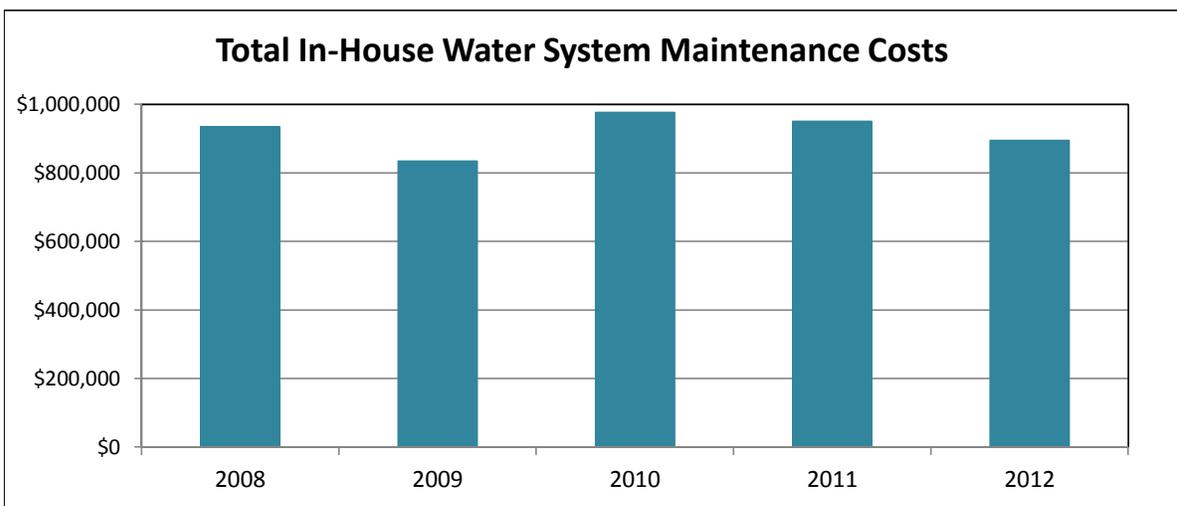
Number of Water Service Accounts: 14,861**

Water Service Installation and Maintenance

	2008	2009	2010	2011	2012
Installed (new)	59	48	31	19	4
Replaced***	-	-	-	-	55
Service Leaks Repaired	25	26	26	22	14

Breakdown of In-House Maintenance Costs****

	2008	2009	2010	2011	2012
Water Mains	\$215,959	\$166,657	\$171,124	\$145,934	\$274,946
Fire Hydrants	\$168,458	\$194,376	\$38,467	\$207,625	\$95,065
Water Services	\$157,686	\$127,230	\$189,912	\$211,007	\$135,193
Valves	\$138,592	\$117,947	\$202,871	\$76,172	\$102,763
Snow & Ice Removal	\$73,201	\$22,794	\$70,745	\$59,479	\$24,085
Assist Contractor	\$40,793	\$40,067	\$42,597	\$43,969	\$70,848
JULIE Locates	\$40,632	\$34,210	\$34,560	\$58,975	\$62,845
Equip/Facility Maint.	\$36,763	\$55,004	\$67,348	\$85,559	\$62,757
Assist Other City Depts.	\$32,366	\$29,180	\$46,640	\$21,390	\$16,053
Assist W&S Divisions	\$12,995	\$25,583	\$18,067	\$11,433	\$13,739
Safety & Training	\$9,556	\$9,595	\$86,878	\$19,270	\$10,853
Misc.	\$7,831	\$11,984	\$7,666	\$10,337	\$25,370
Total	\$934,832	\$834,627	\$976,874	\$951,150	\$894,518



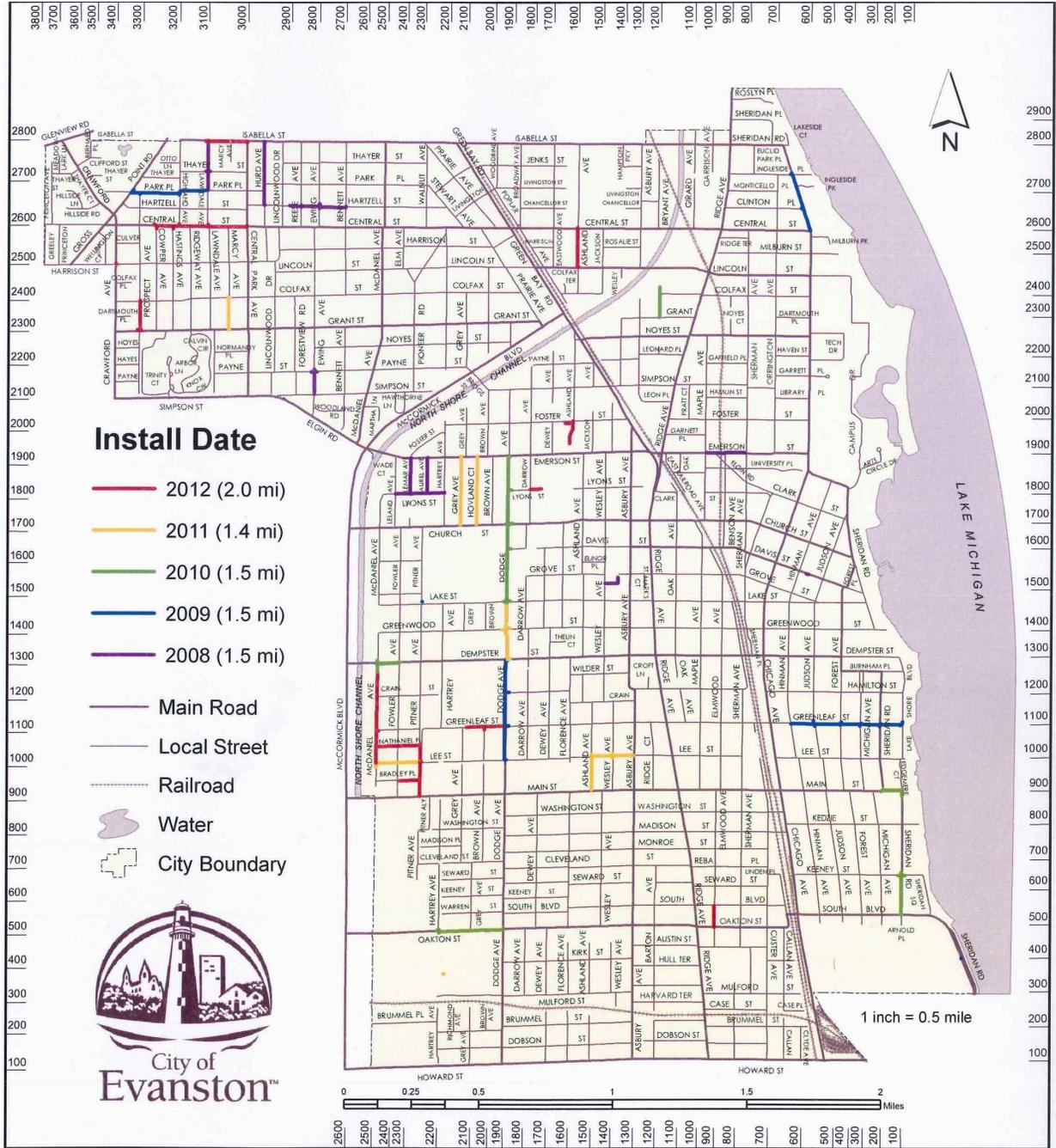
* All work completed by Utilities Department staff unless otherwise noted.

** Includes metered domestic water service accounts and unmetered fire service accounts.

*** Differentiation of new water service installations from replacement of existing water services began in 2012.

**** Costs fluctuate from year to year due to changes in maintenance needs and prioritization of repair projects.

Water Mains Installed



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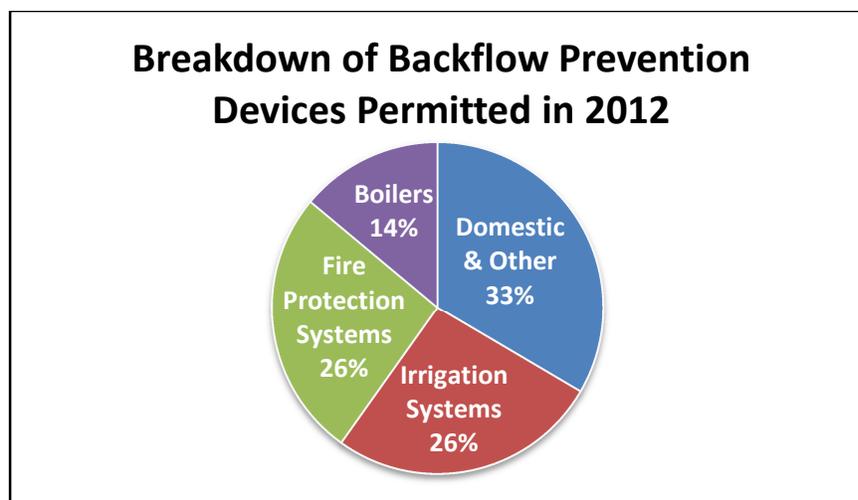
Cross Connection Control

A cross connection is a point in a plumbing system where the potable (safe, drinkable) water supply is connected to a non-potable (polluted or untreated) source. A cross connection exists whenever the drinking water system is or could be connected to any non-potable source. If cross connections are not properly protected and there is a drop in pressure, untreated sources and dirt can be pulled into household plumbing systems.

The State of Illinois and the City of Evanston require mandatory backflow protection on certain households and facilities where high health-hazard-type cross connections are normally found. Underground lawn sprinkling systems, fire protection systems, hospitals and health clinics, mortuaries, laboratories, food and beverage processing and car washes are just a few of the locations where backflow prevention is necessary to protect the quality of our public water supply.

In 2008, the Utilities Department hired a plumbing inspector to manage the City's cross connection control program. Since that time, over 2,000 backflow prevention devices have been added to the City's inventory and are now regularly inspected for compliance with State and City codes. An annual permitting system enables the City to ensure these devices are properly maintained throughout their life cycle. This helps keep the high quality drinking water produced by the City's water treatment plant safe to drink after entering the water distribution system.

Year	Backflow Prevention Devices Billed for Permitting Fees
Pre-2008	814
2008	1,465
2009	2,061
2010	2,292
2011	2,609
2012	2,786

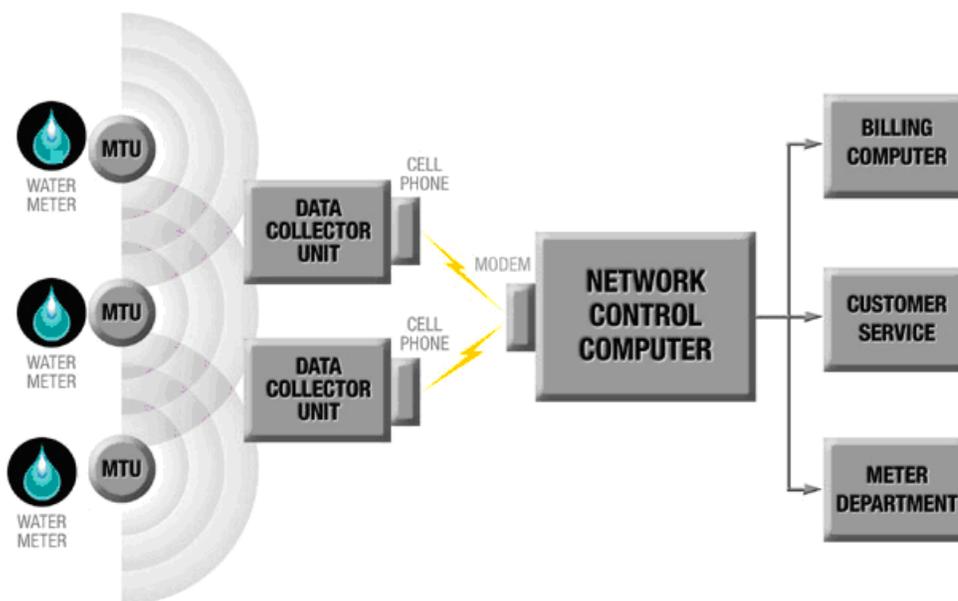


Metering



In 1944, Skokie requested a direct water supply, which Evanston provided in the form of a direct pressure pipeline. By 1948, the growth of Skokie and Evanston made expanding the water plant a necessity. The expansion included a new all-electric high lift pumping station, new mixing and settling basins, a chemical building and laboratory, dry chemical feeders, and the addition of six 4 mgd filters, bringing the total filter capacity to 48 mgd. In 1950, the steam plant was shut down, giving way entirely to electric pumps with two backup gasoline engines.

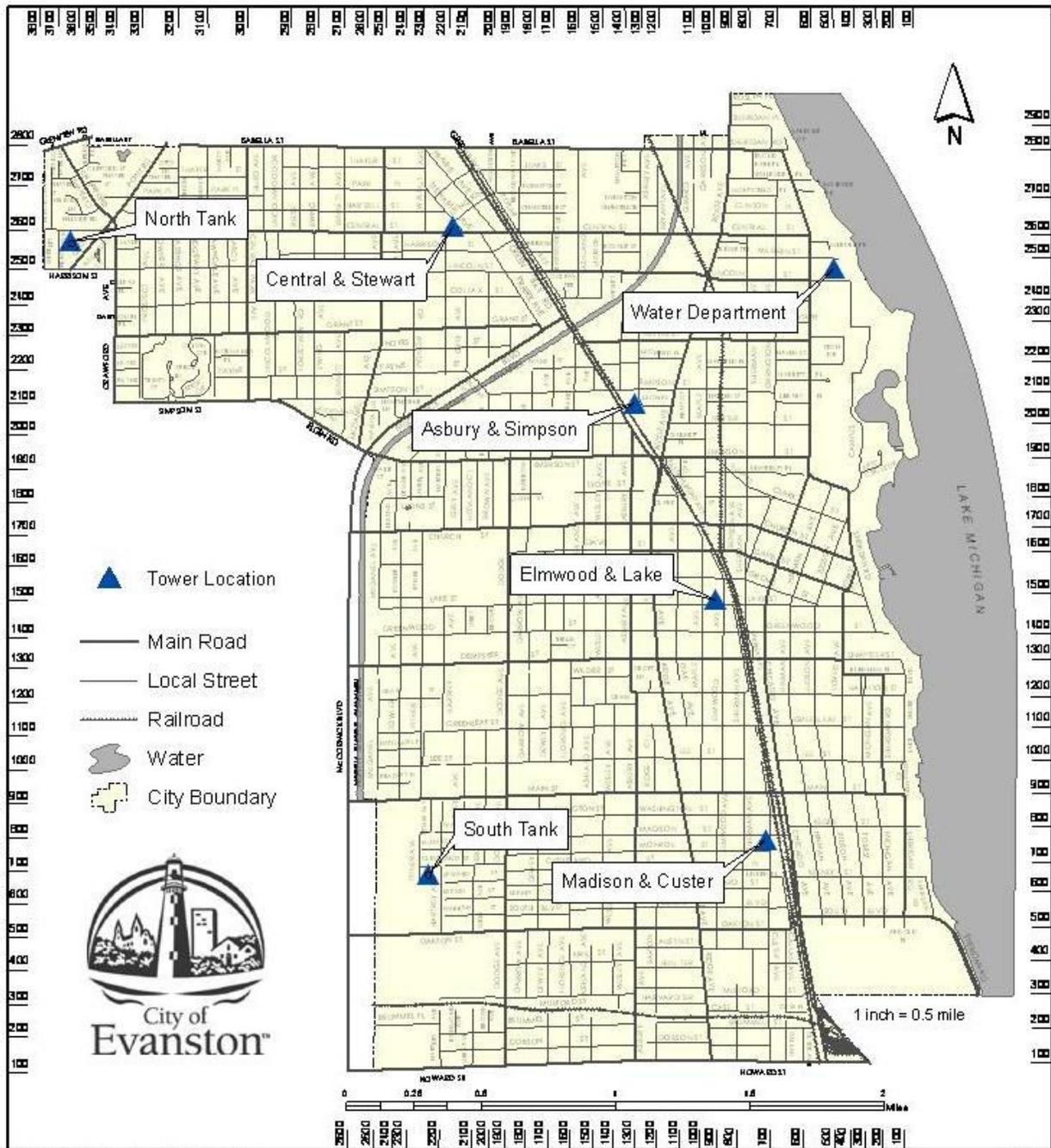
Fixed Network Meter Reading System



How it works:

- The Meter Transmission Unit (MTU) is attached to every water meter in Evanston. Each MTU contains a radio transmitter that, twice per day, broadcasts the meter reading.
- The Data Collector Unit (DCU) receives the meter readings from the MTUs and stores this data. Evanston currently has 7 DCUs located on various buildings throughout the community. Daily each DCU sends its meter reading information to the Network Control System at the Water Plant.
- The Network Control System supports customer service and system management activities and transfers the meter readings to the billing system.

Transmitter Tower Locations



Water Meter Inventory

Water is billed bi-monthly in units of 100 cubic feet (CCF). The minimum service charge every two months is based on water meter size as follows:

Meter Size	Minimum Charge, Effective 1/1/2012
5/8"	11,831
3/4"	773
1"	1,047
1 1/2"	245
2"	456
3"	51
4"	26
6"	4
8"	3
Total	14,436

Water Rates to Evanston Customers

Water is billed bi-monthly in units of 100 cubic feet (CCF). The minimum service charge every two months is based on water meter size as follows:

Meter Size	Minimum Charge, Effective 1/1/2012
5/8" & 3/4"	\$ 6.24
1"	\$ 12.47
1 1/2"	\$ 23.33
2"	\$ 36.73
3"	\$ 64.68
4"	\$103.61
6"	\$182.72
8"	\$309.31

The minimum demand charge includes the first five hundred cubic feet (5 CCF) of water consumed every two months, which is roughly equivalent to 3,740 gallons of water.

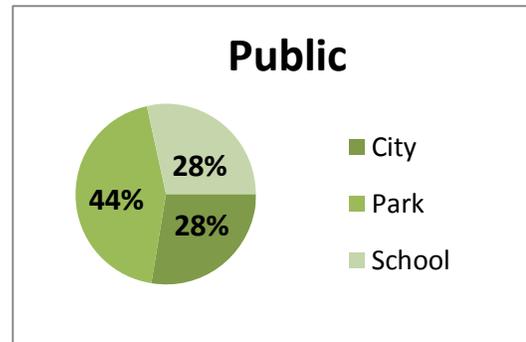
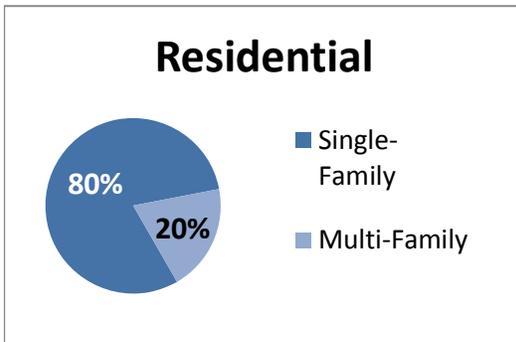
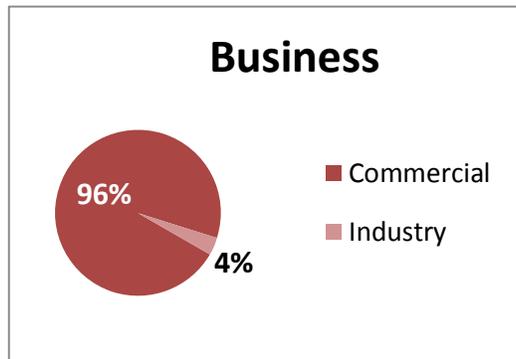
Water usage over the minimum is billed at \$1.75 per CCF effective 1/1/2012. This is equivalent to a rate of \$2.34 per 1,000 gallons.

Water Service Accounts

Billed by Category and Water Usage for 2012

Category	Number of Accounts	2012 Usage (CCF)*
Metered Water Services		
Single-Family	10,690	1,082,473
Multi-Family	2,626	1,194,019
Commercial	965	1,117,431
Industry	35	14,758
City	33	15,174
Park	53	5,416
School	34	45,971
Subtotal	14,436	3,475,242
Unmetered Water Services		
Fire Services**	425	-
Totals	14,861	3,475,242

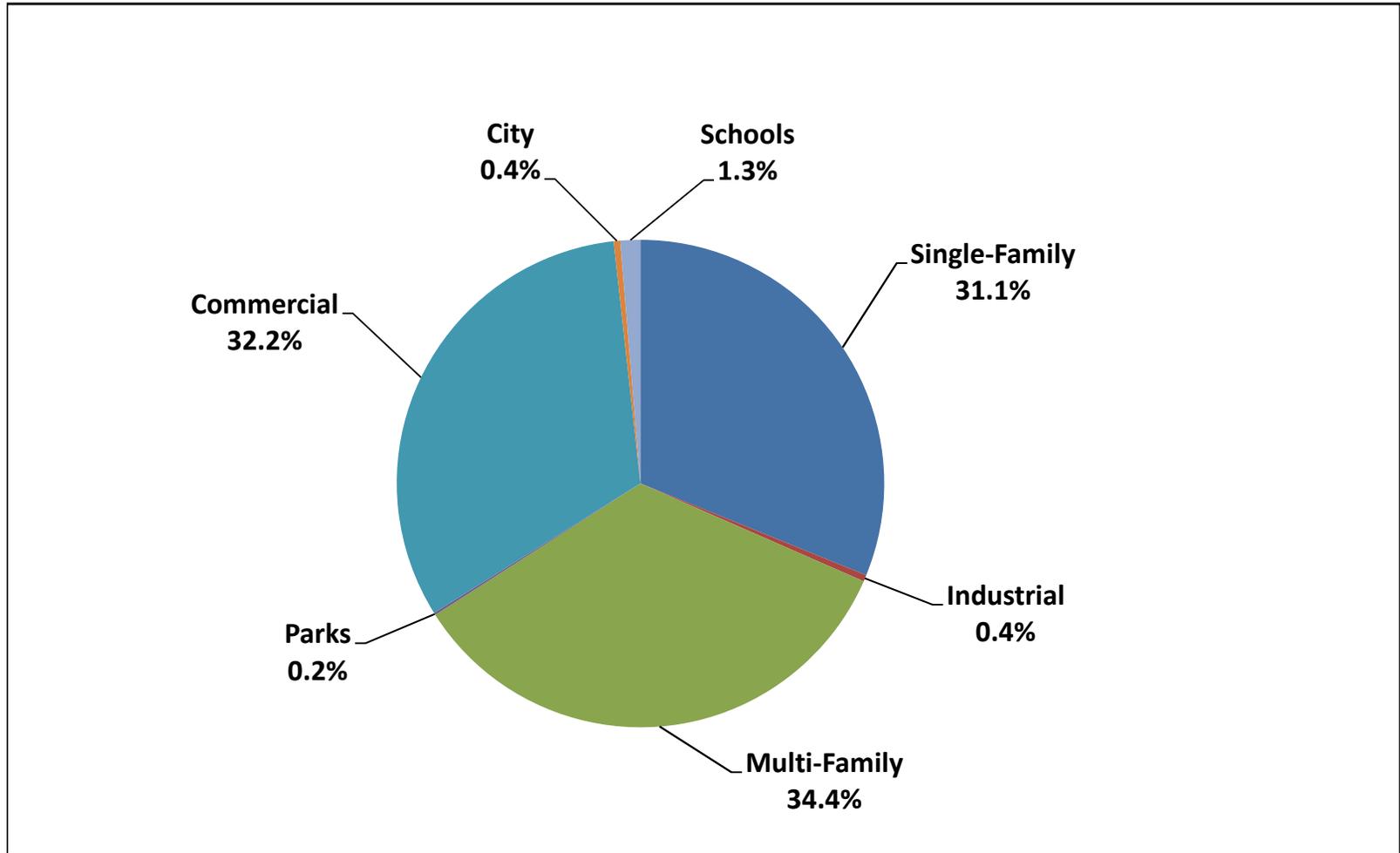
Water Service Accounts by Category:



* Water usage is metered in units of 100 cubic feet (CCF). 1 CCF is approximately 748 gallons

** Fire services are not metered. They are billed a flat charge twice per year.

2012 Water Usage by Evanston Customers



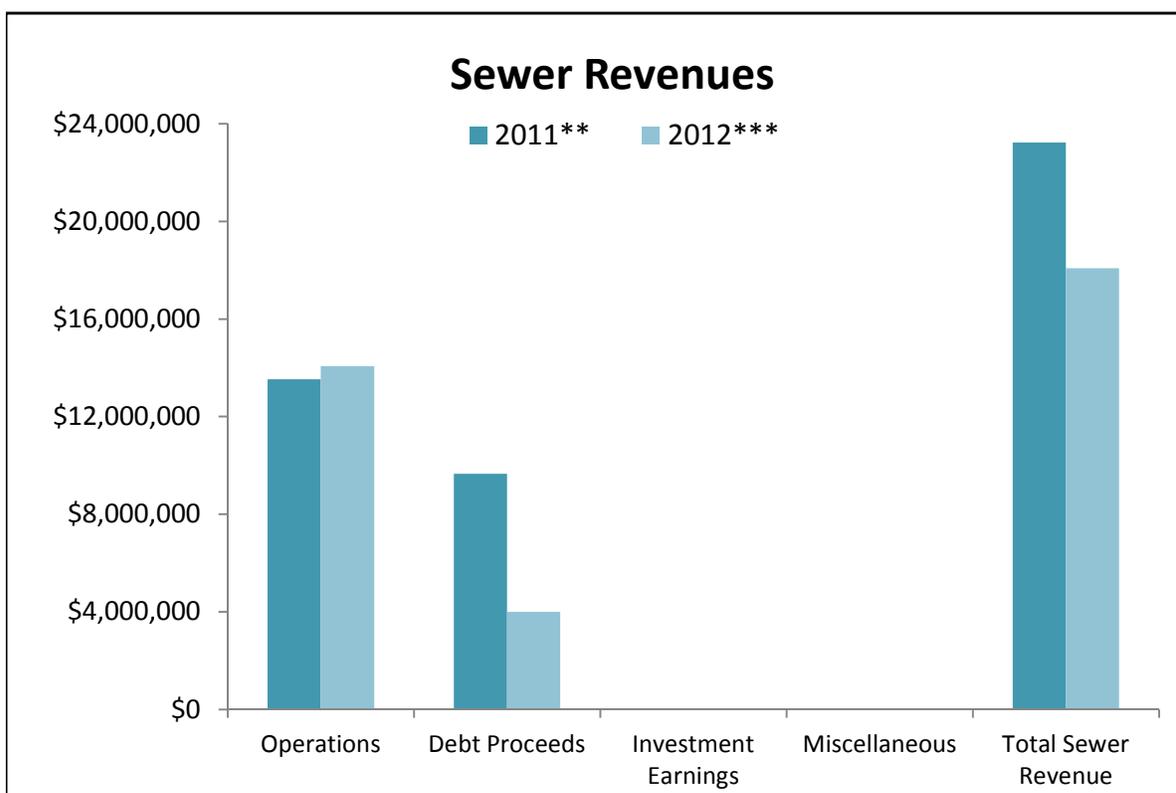
Sewer



More improvements occurred throughout the 1950s and 1960s, including eliminating all pollution to Lake Michigan from the water treatment plant and increasing the plant's total pumping capacity to 147 mgd. In 1980, Evanston signed a contract to provide water to the Northwest Water Commission, consisting of the municipalities of Arlington Heights, Buffalo Grove, Palatine, and Wheeling. From 1980 to 1985, the Evanston utilities underwent major capital improvements, updating many of the systems and building two standpipes for the northern and southern parts of Evanston.

Sewer Revenues*

	2011**	2012***
Operations	\$13,525,413	\$14,063,000
Debt Proceeds	\$9,660,992	\$4,000,000
Investment Earnings	\$2,498	\$1,000
Miscellaneous	\$44,716	\$14,700
Total Sewer Revenue	\$23,233,618	\$18,078,700



* Financial data are based on actual expenses and do not include audit adjustments such as depreciation and inventory. For audited financial records, see the Comprehensive Annual Financial Report for the City of Evanston, cityofevanston.org/city-budget/.

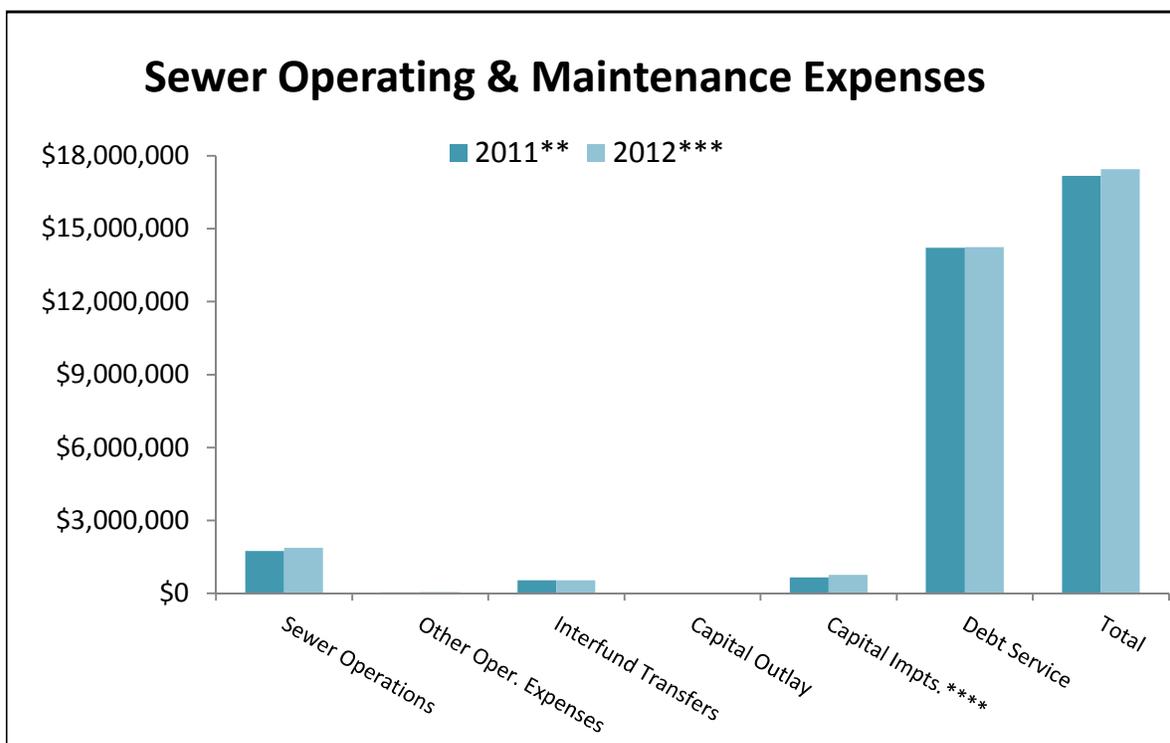
** Due to a change in the City's fiscal year calendar, audited financial data for 2011 was for the ten-month period from March 1, 2011 to December 31, 2011. The 2011 financial data were converted to a 12-month equivalent for comparison to 2012 data.

*** Estimated year-end financial data has not yet been reviewed by the City's auditors.

**** Miscellaneous Revenue includes cross connection control fees, investment earnings, property rental, interest income, fees, grants, insurance reimbursement, phosphate sales, and merchandise sales.

Sewer Operating & Maintenance Expenses*

	2011**	2012***
Sewer Operations	\$1,742,916	\$1,866,650
Other Oper. Expenses	\$27,798	\$48,100
Interfund Transfers	\$532,778	\$529,403
Capital Outlay	\$13,089	\$18,000
Capital Impts. ****	\$653,466	\$753,000
Debt Service	\$14,215,356	\$14,242,252
Total	\$17,185,403	\$17,457,405



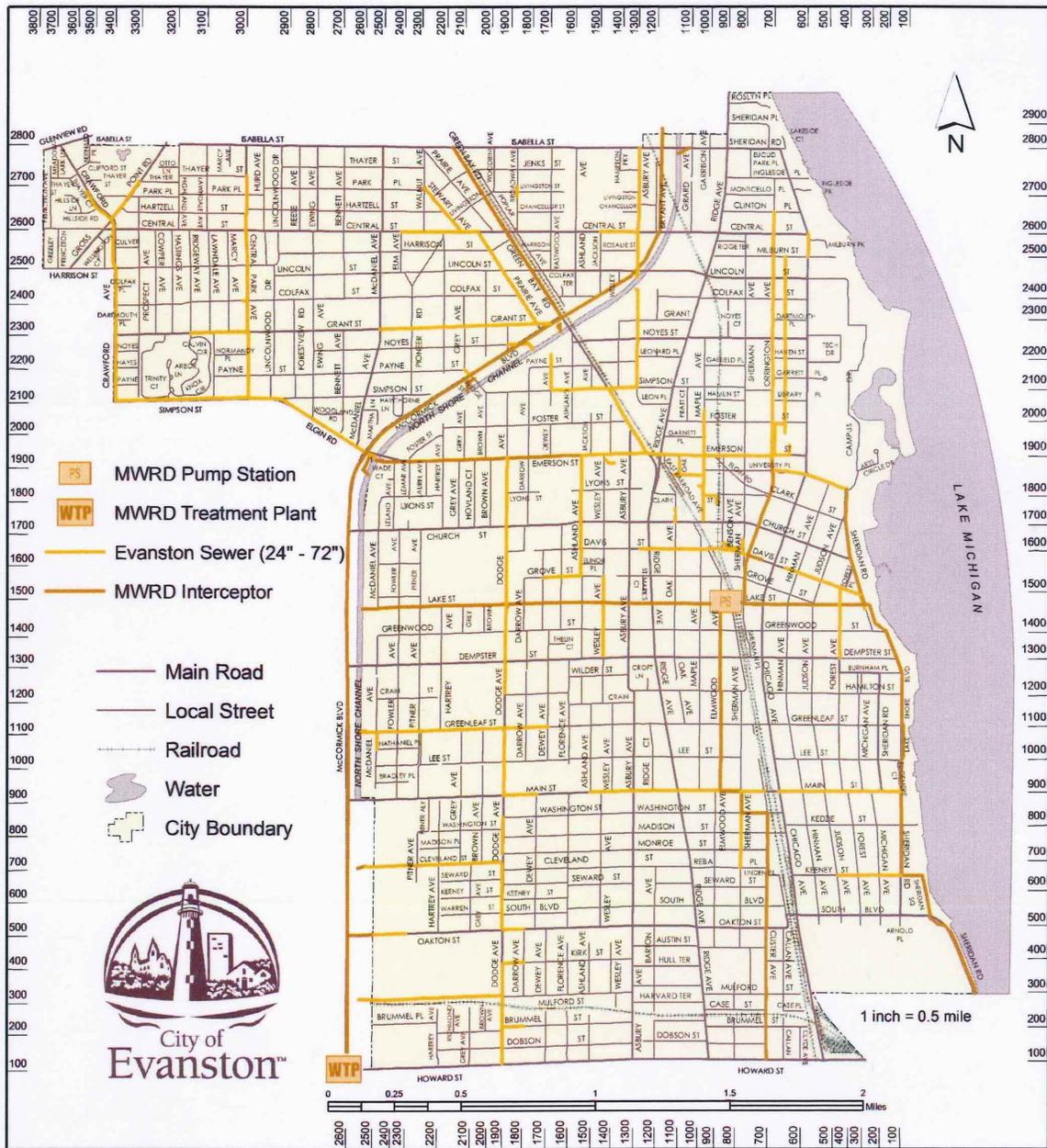
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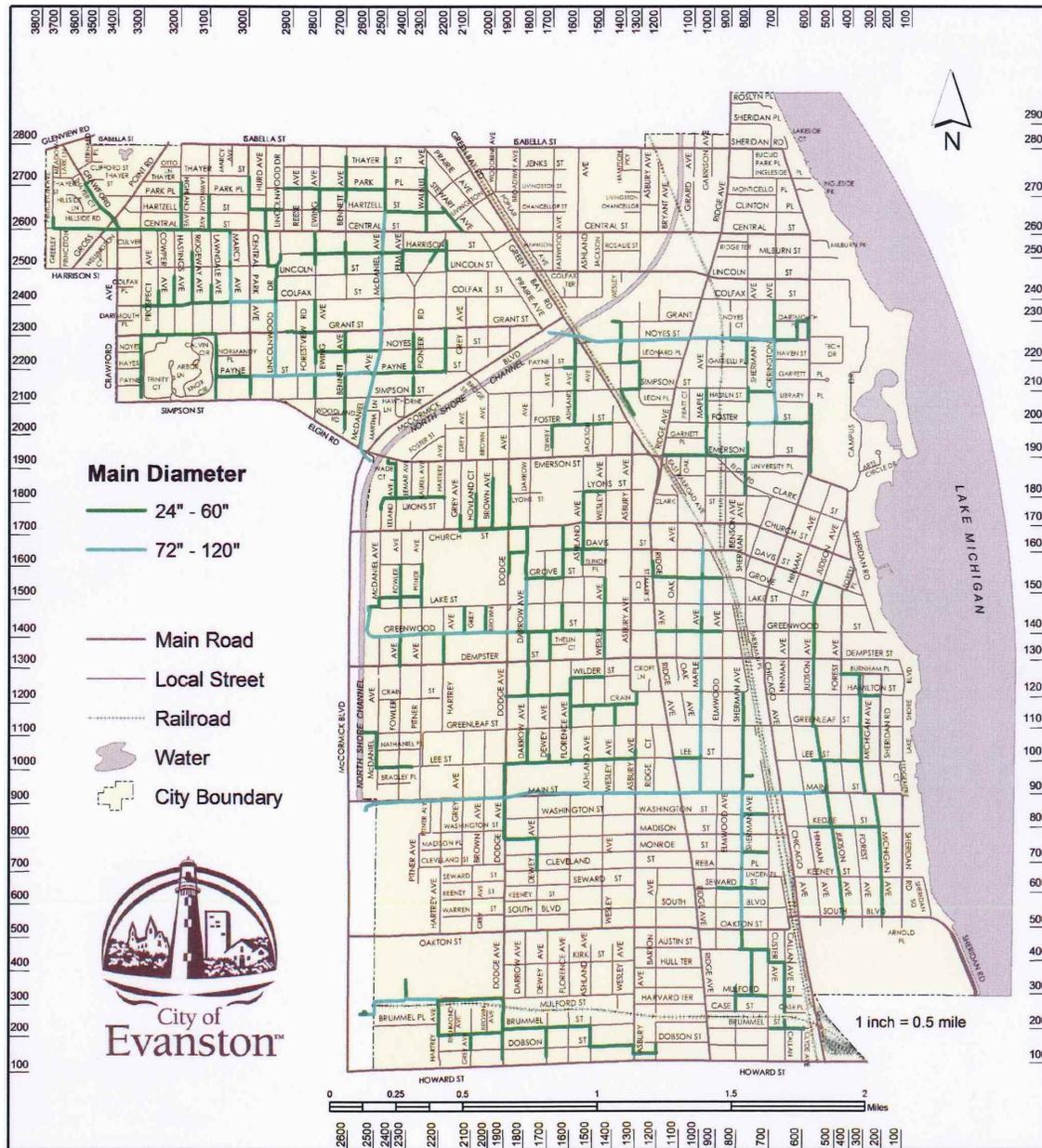
*** Estimated year-end financial data has not yet been reviewed by the City's auditors.

****Includes sewer system rehabilitation projects such as sewer lining and manhole replacement.

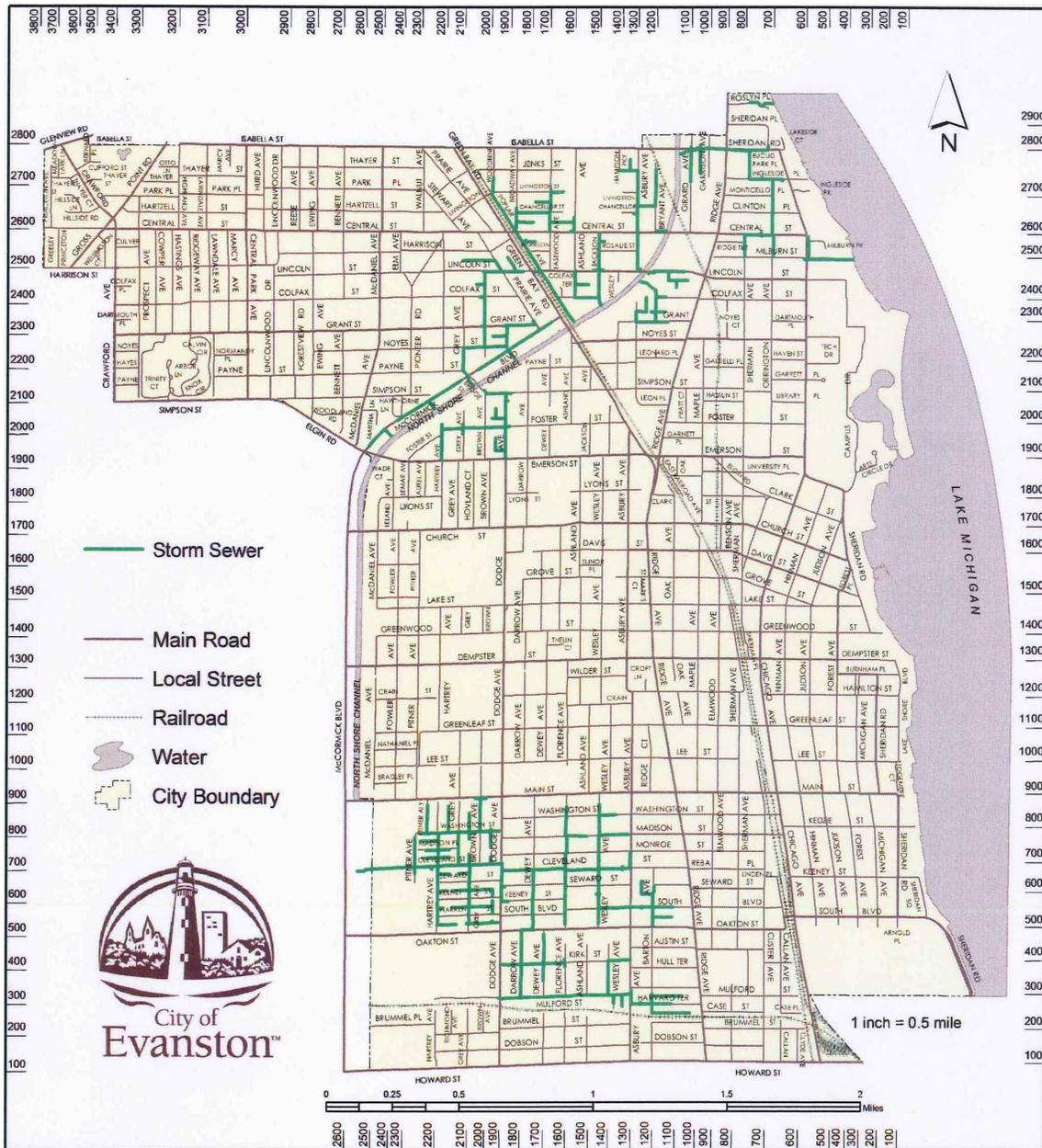
Major Combined Sewer System



Major Relief Sewer System



Major Storm Sewer System

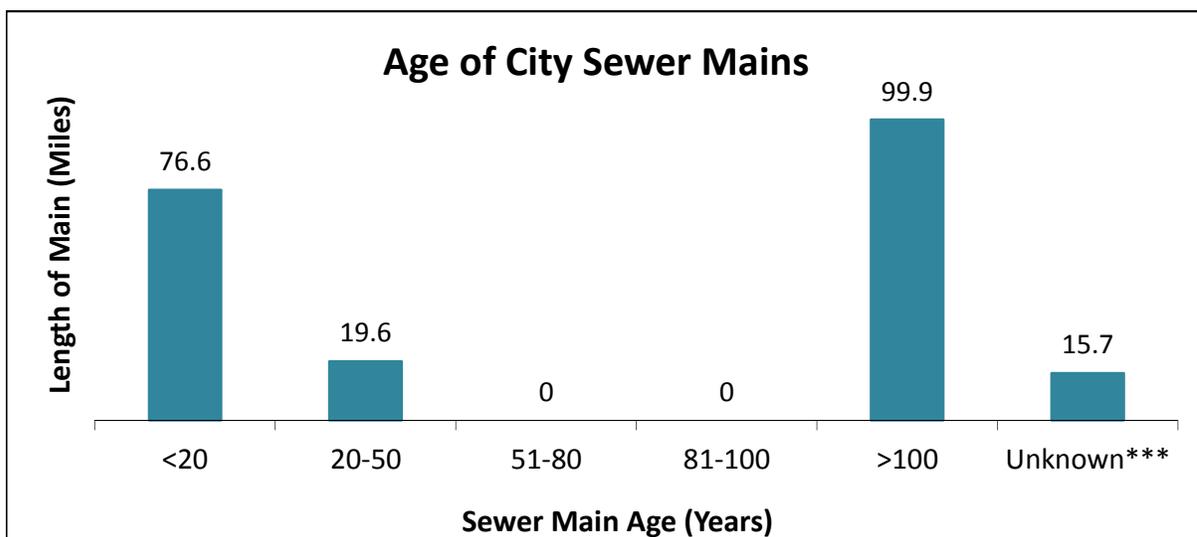


Sewer Mains

System Data and Maintenance*

Sewer Length by Type	Pipe Length (miles)				
	2008	2009	2010	2011	2012
Combined Sewer	142.00	143.08	142.91	143.60	143.78
Relief Sewer	46.53	48.10	50.51	51.51	51.78
Storm Sewer	18.41	18.48	16.11	16.21	16.21
Total Length	206.94	209.66	209.53	211.32	211.77

Sewer Installation and Maintenance	Pipe Length (feet)				
	2008	2009	2010	2011	2012
Installed (new)	239	28	430	424	239
Replaced	178	17	86	0	0
CIPP Rehabilitation (Lining)	5,248	7,741	2,081	6,997	8,850
Spot Repair	3,810	4,444	1,845	3,280	1,183
Clean - Hydroflush	53,749	125,505	262,451	247,195	242,791
Clean - Root Cut	1,265	2,252	13,330	17,543	5,372
Inspection - General	87,318	34,150	38,527	25,354	19,695
Inspection - Televised	62,353	59,654	65,933	81,502	83,942
Inspection - Storm-related**	35,713	33,394	4,043	2,070	0



* All work performed by Utilities Department except CIPP Rehabilitation (Lining).

** Inspection of City sewer mains as a result of sewer surcharge during or after a wet weather event, and inspection of storm sewer outfalls into the North Shore Channel.

*** Mains of unknown age were installed prior to detailed record keeping on sewer installations.

Length of Sewer Mains

By Type and Diameter

Diameter	Combined Sewer		Relief Sewer		Storm Sewer	
	Feet	Miles	Feet	Miles	Feet	Miles
6"	2,969	0.56	243	0.05	0	0.00
8"	19,158	3.63	9,851	1.87	2,130	0.40
9"	121,737	23.06	6,974	1.32	895	0.17
10"	109,984	20.83	25,019	4.74	9,975	1.89
12"	227,205	43.03	24,603	4.66	9,883	1.87
14"	1,019	0.19	0	0.00	0	0.00
15"	92,743	17.56	5,652	1.07	5,249	0.99
16"	2,085	0.39	6,097	1.15	724	0.14
18"	60,528	11.46	15,341	2.91	7,695	1.46
20"	8,410	1.59	127	0.02	0	0.00
21"	15,036	2.85	2,747	0.52	1,910	0.36
22"	858	0.16	0	0.00	0	0.00
24"	20,855	3.95	45,082	8.54	15,959	3.02
27"	6,161	1.17	6,373	1.21	3,240	0.61
30"	6,973	1.32	18,643	3.53	3,913	0.74
33"	3,771	0.71	1,309	0.25	482	0.09
36"	19,771	3.74	18,386	3.48	6,730	1.27
39"	421	0.08	0	0.00	0	0.00
40"	377	0.07	0	0.00	0	0.00
42"	6,700	1.27	12,266	2.32	3,570	0.68
45"	1,029	0.19	0	0.00	0	0.00
48"	13,396	2.54	22,579	4.28	7,966	1.51
51"	1,104	0.21	0	0.00	0	0.00
54"	1,985	0.38	3,159	0.60	609	0.12
57"	784	0.15	0	0.00	0	0.00
60"	7,202	1.36	4,916	0.93	3,633	0.69
72"	4,079	0.77	11,661	2.21	0	0.00
78"	0	0.00	5,440	1.03	0	0.00
84"	0	0.00	88	0.02	0	0.00
96"	0	0.00	2,366	0.45	0	0.00
108"	0	0.00	5,025	0.95	0	0.00
113"	0	0.00	9,275	1.76	0	0.00
120"	0	0.00	7,340	1.39	0	0.00
Unknown	2,823	0.53	2,842	0.54	1,025	0.19
Totals	759,162	143.78	273,403	51.78	85,589	16.21

Total Sewer Main Length: 211.77 miles

Sewer Structures

System Data and Maintenance

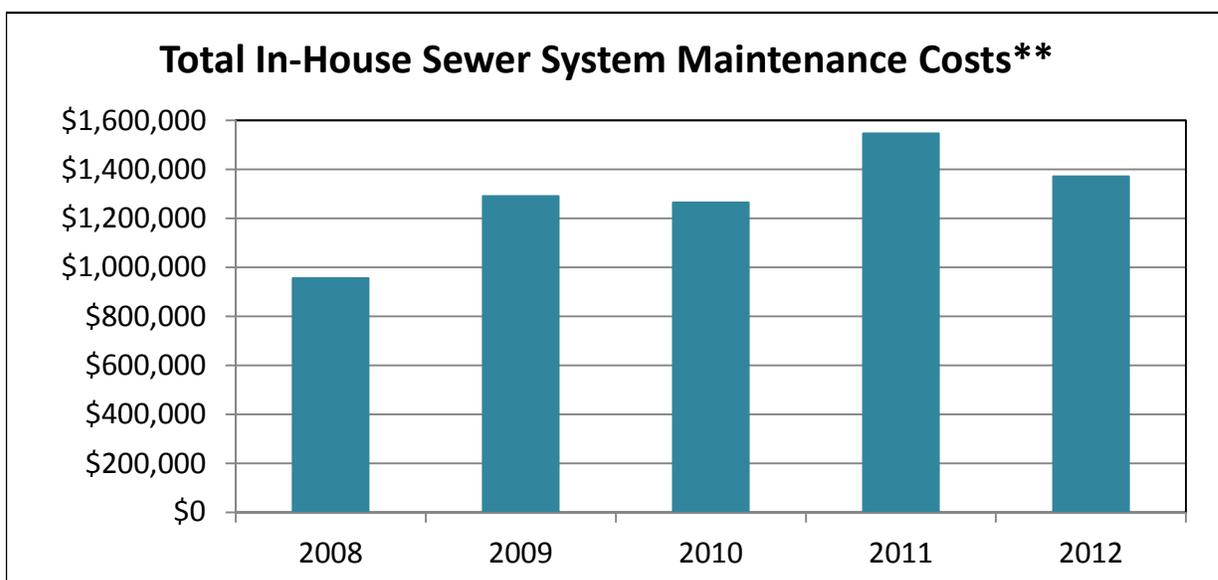
Number of Sewer Structures	2008	2009	2010	2011	2012
Manholes	5,353	5,540	5,453	5,507	5,532
Inlets	2,785	2,819	2,826	2,902	2,927
Catch Basins	6,210	6,214	6,217	6,159	6,179
Total	14,348	14,573	14,496	14,568	14,638

Sewer Structure Installation & Maintenance	2008	2009	2010	2011	2012
Installed (new)	5	4	3	7	2
Replaced	33	25	17	12	39
Repair	169	151	119	96	133
Clean	3,277	3,157	2,750	2,428	4109
Inspect - General	164	208	325	286	411
Inspect - Storm-Related*	734	943	562	835	479

* Inspection of City drainage structures as a result of street or alley flooding during or after a wet weather event.

Breakdown of In-House Maintenance Costs*

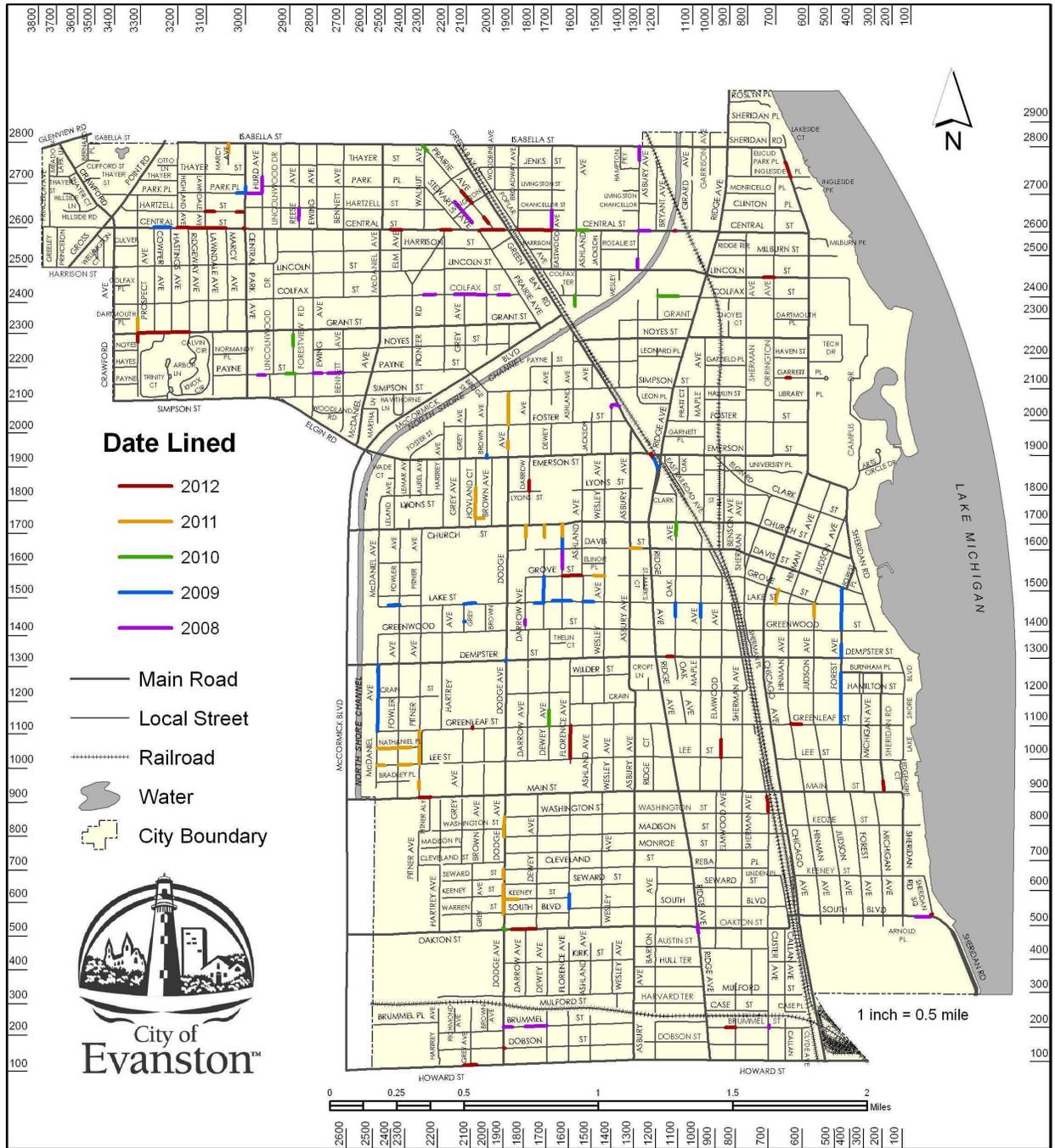
Description	2008	2009	2010	2011	2012
Sewer Mains	\$214,438	\$484,385	\$414,913	\$616,921	\$413,919
Sewer Structures	\$408,271	\$506,297	\$415,475	\$474,164	\$615,415
Equip/Facility Maint.	\$119,995	\$157,495	\$164,813	\$208,299	\$161,460
Assist W&S Divisions	\$71,203	\$45,462	\$62,576	\$49,930	\$45,855
Snow & Ice Removal	\$48,743	\$26,001	\$149,395	\$132,370	\$31,396
Assist Contractors	\$35,705	\$3,401	\$3,190	\$8,847	\$18,240
Assist Other City Depts	\$23,782	\$25,590	\$29,250	\$29,093	\$57,269
Safety & Training	\$14,319	\$22,687	\$10,973	\$15,857	\$21,321
JULIE Locates	\$3,781	\$2,394	\$1,622	\$2,155	\$1,300
Miscellaneous	\$16,234	\$17,702	\$12,598	\$9,799	\$5,966
Total	\$956,470	\$1,291,413	\$1,264,804	\$1,547,437	\$1,372,141



* All work completed by Utilities Department staff unless otherwise noted.

** Costs fluctuate from year to year due to changes in maintenance needs and prioritization of repair projects.

Sewer Mains Rehabilitated (Lined)



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6/11/2013