



2014 ANNUAL REPORT

PUBLIC WORKS DEPARTMENT

Gary R. Kramer, P.E.
City Engineer/Director

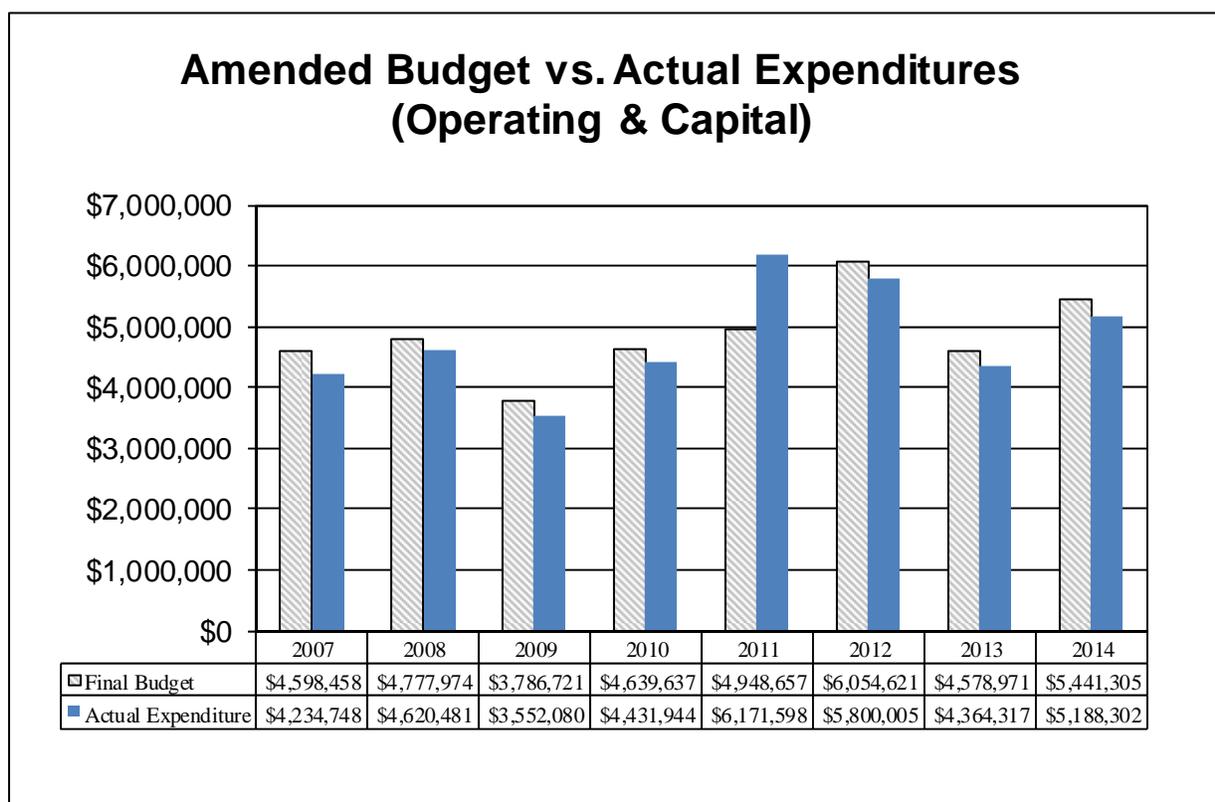
March 2015



OVERVIEW

The Public Works Department primarily maintains streets, sidewalks, and the City's fleet. In addition, residential and commercial site development plans are reviewed and on-site inspection is provided.

For comparison, the 2014 actual expenditure of \$5,188,302 was \$823,985 more than the actual 2013 expenditures; primarily due to the Holloway Road culvert rehabilitation construction and the larger than normal salt replenishment. The table below provides similar data for previous years.



REVENUE

Revenue sources include motor vehicle fees, county road tax, motor fuel tax, miscellaneous grants, insurance/damage reimbursement, soda machine revenue, and excavation/grading/site permit and inspection fees. The county road tax must be applied to offset street expenditures.

Revenue	Budget	Actual
2014 ⁽¹⁾	\$1,960,600	\$2,026,181
2013	\$1,811,500	\$1,790,997
2012 ⁽²⁾	\$2,381,300	\$2,086,262

(1) Includes Holloway Road culvert construction

(2) Includes Kehrs Mill Road construction

PERSONNEL

Two maintenance workers resigned during 2014 (Kevin Beaman (6/18/14) & Jon Constant (3/28/14). These two vacancies were filled with the hiring of Rob Jones (5/24/14) and part-time employee Anthony Ewing became full-time (10/6/14).

Four part-time employees, limited to 28 hours per week, were hired for the construction season. Their combined hours worked were equivalent to 0.83 of a full-time employee. In addition, 5-6 contractual temporary laborers were provided by a temporary manpower agency to supplement the Public Works employees in order to maintain 7 vacuuming crews of four persons each for the leaf program.

TRAINING: Employee training improves performance, safety, and job skills. Below lists the training completed in 2014.

- Maintenance Worker **Kevin Beaman** and Foreman **Joe Gregor**: “Recertification & Retraining Program for Certified Commercial Pesticide Applicator” presented by MO Department of Agriculture (1/23/14)
- **All department personnel**: “Storm Water Rain-Check” provided by Metropolitan Sewer District (3/27/14)
- Foreman **Joe Gregor**: “Local Public Agency Construction Workshop 2014” presented by MoDOT (4/8/14)
- Maintenance Worker **Jim Bottorff**: “Retro Reflectivity Guidelines & Overview Workshop” presented by MO LTAP (4/23/14)
- Street Superintendent **Jim Link**: “Innovation in Transportation-Natural Gas Fueling Developments” presented by Laclede Gas Group (6/17/14)
- City Engineer **Gary Kramer**: “Person In Responsible Charge” training required for recipients of federal fund presented by MoDOT and FHWA (6/17/14)
- City Engineer **Gary Kramer**: “MoDOT Qualification for Local Agencies Basic Training” presented by MoDOT (6/26/14). He first completed this training in 2012, but must be renewed every two years for agencies receiving federal funds from FHWA.
- Foreman **Jeff Filley** and Concrete Crew Leader **Dan Backues**: “ADA Construction Requirements” (7/22/14)
- City Engineer **Gary Kramer** and Foreman **Joe Gregor**: “Designing Pedestrian Facilities for Accessibility (DPFA)” presented by MoDOT and FHWA (12/4 to 12/5/14)
- **All department personnel**: “How to avoid back strains” presented by Daniel & Henry (10/17/14)
- **All department personnel**: “Handling Hazards” presented by Daniel & Henry (3/10/15)

ENGINEERING & INSPECTIONS

Engineering & Inspections	Budget	Actual
2014	\$228,290	\$223,080
2013	\$240,346	\$235,349
2012	\$248,940	\$248,806

ENGINEERING: Commercial and residential site improvement plans are reviewed in-house for conformance with ordinances and engineering standards. MSD has the jurisdiction regarding storm drainage design including sewer systems, detention basins, and water quality facilities. Capital street and sidewalk projects are primarily designed by contract. Small projects are engineered in-house and with construction by contract. All specifications are prepared in-house for solicitation of sealed bids.

CONSTRUCTION INSPECTIONS: Contracted street work is inspected in-house. The inspector is trained to perform air-entrainment and slump tests on fresh concrete. Compaction tests are performed by contract due to the federal regulations pertaining to the testing equipment which contains small amounts of radioactive materials.

EXCAVATION PERMITS: Excavation permits are issued to property owners, utilities, MSD, and anyone else that needs to dig or bore within the City’s street rights-of-way. The permit fee is waived for sewer lateral work. Permit fees generated \$10,790 in 2014 compared to \$11,900 in 2013 which covers processing the permit application and field inspections to assure compliance with ordinances and engineering standards.

	2014	2013	2012	2011
Residential driveways, aprons and sidewalks	73	57	66	56
Irrigation Systems	14	29	27	32
Subdivision Construction	4	0	2	6
Water-tap Destroys/Water Service Program (administered by MO American Water)	6	4	30	49
Sewer Lateral Program (administered by the City)	5	8	3	1
Utilities	158	146	25	42
TOTAL	260	244	153	186

GRADING PERMITS: Grading permits are issued for land disturbances of 10,000 square feet or more. Field inspections include compliance with the approved plans and maintenance of silt control devices. In 2014, four new permits were issued (Enclaves at Lucerne, Essen Place, Motz Estates and American Arms) and two renewals. The renewals and new fees totaled \$24,001 in 2014 compared to \$14,096 in 2013.

SIDEWALK PROGRAM

Sidewalks	Amended Budget	Actual
2014	\$302,097	\$297,509
2013	\$198,238	\$194,066
2012	\$224,536	\$267,717

The Department maintains sidewalks along city streets and along Manchester Road and Clayton Road. Several years ago, MoDOT required the City to accept maintenance responsibilities for sidewalks along Manchester Road and Clayton Road. Most of the sidewalk along Manchester was constructed by the City with adjoining property owners reimbursing the City for the cost when they made improvements to their property. MoDOT constructed sidewalks along both sides of Clayton Road as part of their reconstruction and widening project. Clayton Road was transferred to St. Louis County in 2012. Ballwin, Chesterfield, and Ellisville have agreed to maintain the portions of sidewalks and landscaped medians within their city limits. Property owners along Kehrs Mill



Road are required to reimburse the City in a similar way as Manchester Road when their property is redeveloped. No reimbursements were received.

Sidewalk replacement was completed in-house and by contract. The contracted sidewalk work was included in the concrete pavement slab replacement contract. The cost of in-house sidewalk replacement for 2014 was \$23,120. The contract sidewalk replacement and curb ramp upgrade cost for 2014 was \$81,816.

In-House Sidewalk Replacement	2014	2013	2012	2011	2010
Number of Sections	829	846	976	771	355

2014 IN-HOUSE SIDEWALK REPLACEMENT		
Arborwood Drive	Helmsdale Court	Penny Ct and Penny Lane
Ballwin Commons Drive	Henry Road	Rainbow Circle
Blazedwood Drive	Holly Ridge Drive	Ries Bend Road
Buckhurst Drive	Ironwood Drive	Stoddard's Mill Drive
Caravel Court	Kacey Lane	Tall Timbers Meadows Drive
Cleta Drive	Kehrs Mill Road	Timka Drive
Country Creek Court	Log Hill Drive	Valley Manor Court
Dutch Mill Drive	Londondary Drive	Walnut Point Court
Forest Leaf Drive	Manorcrest Drive	Westglen Village Drive
Golfwood Drive	Maymont Drive	Whispering Village Circle
Guenevere Drive	Monroe Mill Drive	

2014 CONTRACTUAL SIDEWALK REPLACEMENT
Brooktree Lane
Spring Meadows Drive (Henry- City Limits)
Bitterfield Court
Graywood Drive (Spring Meadows- Cul de Sac)
Clear Meadows Drive (Holloway- High Meadows)
Twigwood Drive(Ballwood- Ries)
Towercliffe Drive

PAVEMENT PROGRAM:

Pavement (operating & capital)	Amended Budget	Actual
2014	\$2,672,418	\$2,632,322
2013	\$2,456,917	\$2,415,056
2012 ⁽¹⁾	\$4,148,800	\$4,032,755

(1) Includes Kehrs Mill Road

This program consists of replacement of deteriorated asphalt overlayment with selective concrete slabs (Mill/Repave), concrete slab replacement, asphalt overlay of concrete streets, microsurfacing, crack and joint sealing, curb and gutter replacement, reconstruction bringing streets to city standards, chip seal, street sweeping, traffic sign and signal maintenance.

STREET BUDGET	2014 Actual	2013 Actual	2012 Actual	2011 Actual
Slab & Curb Replacement (in-house)	\$73,133	\$80,759	\$62,906	\$20,282
Slab Replacement (contractual)	\$114,904	\$71,928	\$351,288	\$997,474
Cracksealing (contractual)	\$73,981	97891	\$88,472	\$70,422
Cracksealing (in-house)				\$8,066
Ries Road Curb & Gutter Replacement				\$133,242
Mill/Repave	\$1,052,074	\$1,097,438	\$407,476	\$1,023,511
Rojean -engineering		\$58,655		\$11,835
Kehrs Mill Resurfacing & Sidewalk Project			\$906,044	\$55,958
Contingency			\$3,450	\$3,375
TOTALS	\$1,314,092	\$1,406,751	\$1,960,329	\$2,324,165

UNACCEPTED STREETS: Streets and sidewalks in subdivisions under construction are the responsibility of the developer including snow removal. Once the subdivision is fully constructed the streets and sidewalks become the maintenance responsibility of the city. The only street accepted for city maintenance was Sunset Forest Drive in the Sunset Grove subdivision. Subdivision streets that have not yet been accepted in 2014 are Enclave at Lucerne, Essen Place, Estates at Hallmark Place, Villas at Meadowbrook, and Manors of Hill Trail subdivisions. These streets consist of full depth asphalt with concrete curb and gutters and sidewalks along each side.

MILL/REPAVE: Mill/Repave involves the removal of the old severely deteriorated asphalt overlay and the replacement of selected underlying concrete pavement slabs. The cost in 2014 was \$1,052,074 which includes slab replacement, joint repairs, and the new asphalt overlay on five streets. Bitterfield court was originally scheduled to be repaved, but with the number of slabs replaced, overlaying was not necessary. We will continue this philosophy of not re-overlaying a concrete street, but instead replace more slabs provided the cost difference is justifies this approach.

2014 MILL/REPAVE STREETS
Spring Meadows Drive (Henry- City Limits)
Bitterfield Court
Graywood Drive(Spring Meadows- Cul de Sac)
Clear Meadows Drive (Holloway- High Meadows) Phase 1
Twigwood Drive(Ballwood- Ries)
Nottingham Drive (Del Ebro – Bedford)

CONTRACTUAL SLAB REPLACEMENT: Slabs were replaced on streets that have never been overlaid. Since 2012 our philosophy continued to extend the slab replacement to include deteriorated asphalt joint repairs.

2014 CONTRACTUAL SLAB REPLACEMENT
Brooktree Drive
Clayworth Drive (West of Henry)



IN-HOUSE SLAB REPLACEMENT: The Public Works Department’s crew removed and replaced 112 severely deteriorated concrete pavement slabs on 14 streets that are not scheduled to be asphalt overlaid. Also, completed was 3,113 LF of curbs and gutters on 10 streets. Concrete and crushed rock costs

totalled \$73,133. In-house slab replacement will be limited to those streets with about 5 or fewer slabs. (*denotes in-house street slabs)

2014 IN-HOUSE SLAB & CURB & GUTTER REPLACEMENT		
Country Creek Drive	David Harrison Lane	Wildwood Parkway*
Castle Meadows Court	Walnut Point Court	Wild Oak Court*
Garden Leaf Court	Westpar Drive*	Trail Grove Court*
Westglen Village Drive	Windcliffe Drive*	Fawn Meadows Drive*
Stoddards Mill Drive	Old Ballwin Road*	Cool Meadows Drive*
Londondary Drive	Log Hill Court*	Londondary Drive*
Old Ballwin Road	Rolling Glen Lane*	Governor Court*
Lennox Drive	Hickory View Lane*	Whispering Village Drive*

ASPHALT OVERLAYMENT: In 2014, no streets with exposed concrete pavement were overlaid.

PAVEMENT REPAIRS:

Pavement Repairs	2014	2013	2012	2011	2010
Asphalt (tons)	1,576	2,662	2,612	2,279	1,424

MILL AND FILL JOINT REPAIR: This type of surface repair addresses moderate to severe joint failures, spalls, and raveling on concrete and asphalt surfaces. The operation consists of milling out the old deteriorated concrete pavement and replacing with hot mix asphalt.

POTHOLE REPAIRS: Staffed generally by two person crews, this program element is kept busy as often as weather allows.

CRACK & JOINT SEALING: Joint and crack sealing is the Department’s most important preventative maintenance program element. The decrease of newer streets has turned our attention to sealing of the edges of the joints, created by the mill and fill crews. We have found that sealing the outside edges of the new patches extends the life of the patch, therefore delaying the need for further maintenance for a longer period of time. This also buys a little more time before a more permanent treatment is needed. The cost for sealing in 2014 was \$73,981. In 2014 our contractor sealed 15 miles of streets. Since 2009 a total of 100 miles of streets have been cracksealed.



CRACKSEALING	MILES SEALED
2014	15
2013	18
2012	17
2011	23

WARD 1
Asilomar
Ballwin Commons (Ramsey-Pavement Change)
Barker Ct
Barker Ln (Ries Rd-#144)
Caybeth Dr.
Cleta Ct
Forest Leaf
Holloway Ridge
Holly Leaf Dr.
Lorchris Ct
Seven Trails
Shandra
Shirley
Spring Oaks
St Mary's
Sweet Meadows
Timka Dr.

WARD 3
Brass Lamp (Forest Leaf- Glen Meadows)
Dutchmill (Henry- Gardenway)
Essex Mill
Hatteras
Hillbrook
Hollyridge (All)
Holshire Way
Ironwood
Jares (Muirview- Agean Way)
Monroe Mill
Mountview
Newfield
Norman Gate
Quinnmoor (Baxter- End)
Silvercreek
Springlake
Wild Oak ct.
Windsor Mill
Woodruff

WARD 2
Crestland (KMR- Pavement Change)
Dale Ct.
Del Ebro (KMR- Nottingham)
Ganahl Dr.
Happy Ct.
Huntleigh
Kent Ct.
Lindell (W Skyline- Sunset)
Log Hill Ct
Nantucket
Newport
Oakborough
Oakmont Farm Dr.
Pleasant Grove (KMR- Ashbourne)
Romine
Vlasis

WARD 4
Arborwood
Castle Manor
Forest Village
Fox Den
Lemonwood
New Ballwin Oaks
Rustic Valley
Westrun (Westglen Village- Woodrun)
Woodside Trails

MICROSURFACING: Microsurfacing is a preventative pavement treatment. This pavement maintenance consists of the placement of a thin coat of asphaltic material containing small very hard aggregate (i.e. trap rock or granite) over existing asphalt pavement. Due to the cost, a large quantity of pavement is required to obtain favorable prices. Therefore, no streets were microsurfaced in 2014.

SWEEPING: Typically, all streets were swept four times to keep the debris out of the storm sewer which drains into creeks and eventually into streams and rivers. Due to weather, only 40% of the streets were swept in September. Therefore, the cost for sweeping in 2014 was \$21,145.

TRAFFIC CONTROL PROGRAM

Traffic Control	Amended Budget	Actual
2014	\$107,194	\$105,701
2013	\$87,235	\$79,540
2012	\$114,691	\$112,405

The Traffic Program consists of many elements. These include installation of new signs, repairs or replacement of old or faded signs, post replacements, barricade repairs and the ordering of sign materials and equipment. The higher sign expenditure in 2014 is primarily due to the new reflectivity standards. A reflectivity inventory began in 2014 and is expected to be completed in 2015. This inventory will identify signs to be replaced.

	2014	2013	2012	2011
Sign costs	\$25,575	\$12,673	\$18,867	\$7,398

STRIPING AND RE-PAINTING: The traffic program also includes crosswalks, lane striping, centerline striping, and directional arrows. Lane and centerline stripes are repainted in even numbered years. In-house re-painting of crosswalks, stop bars, and lane turn arrows added \$5,051 in materials. For the first time, centerline and lane line painting was contracted with St. Louis County for a cost of \$10,100. This compares to \$15,677.16 the last time these lines were painted by an independent contractor in 2012. Painting included the following breakdown:

Double Yellow	82,053	Lineal feet
Single Yellow	1,281	Lineal feet
Single White	24,402	Lineal feet
Single White Skip	879	Lineal feet
Turn Arrows	65	Each
Crosswalks	65	Each
Stop Bars	156	Each

TRAFFIC SIGNALS: St. Louis County, by contract, services the traffic signals at the New Ballwin-Reinke-Old Ballwin intersection and at the Henry Avenue-Glenmeadow Drive. The cost of signal maintenance in 2014 was \$911 and in 2013 was \$534 compared to \$4,001 in 2012. The higher expenditure in 2012 was due to replacement of the Henry Avenue signal controller.

SNOW & ICE CONTROL PROGRAM

Snow & Ice Control	Amended Budget	Actual
2014	\$524,255	\$317,691
2013	\$266,778	\$142,075
2012	\$204,930	\$74,718

Combating winter storms is this Department's highest priority due to the importance of the traveling public's safety. The severity of winter snowfall and ice storms is difficult to predict. Winter seasons occur during two calendar/budget years.

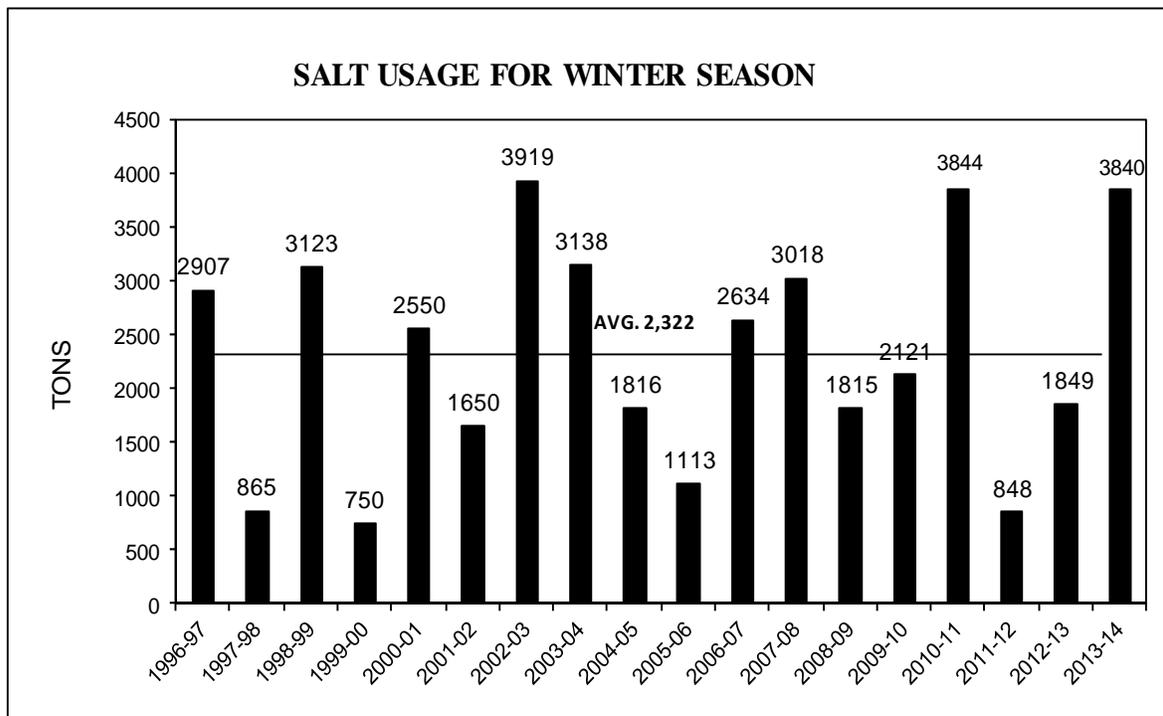
Salt is ordered through the APWA salt coop and bids are solicited for salt through a secondary supplier. Salt purchased and delivered in 2014 was 4,626 tons at a cost of \$307,447. This purchase and the balance from the previous winter filled the salt dome to 4,990 tons to begin the 2014/2015 winter season. The dome's capacity is rated at 5,000 tons.



Material costs are more relevant for a particular winter season instead of on a calendar year basis. During early 2014 snowfall totaled 24.2 inches with four freezing rain events resulting in 3,118 tons of salt being used during the first quarter of 2014. In late 2014 light snow fell with one freezing rain event requiring 251 tons of salt.

The total salt used for the 2014 calendar year was 3,379 tons compared to 2,311 tons in 2013 calendar year. These amounts include the salt used on city parking lots.

In 2014 a vehicle tracking system was installed on all snow plow dump trucks and on the mosquito fogging pickup truck. The plowing progress map was first tested in February 2015 with some “bugs” to be worked out with the service provider.



PROPERTY SERVICES PROGRAM

Property Services (operating & capital)	Amended Budget	Actual
2014 ⁽¹⁾	\$890,403	\$897,886
2013	\$396,641	\$366,509
2012	\$303,877	\$256,759

(1) Includes Holloway Road culvert construction

Beginning in 2012, pest control, storm drainage, and leaf collection programs were combined into a single property services program.

MOSQUITO CONTROL: Because of the continuing threat of the West Nile Virus, the Public Works Department has always taken a proactive approach to mosquito abatement. For the first time, the City entered into a five year contract with St. Louis County Health Department for mosquito fogging and larvaciding beginning in 2011. The cost included fogging and larvaciding pools of water in creeks. St. Louis County fogs based on results of the traps they place at various locations in Ballwin. This selective fogging resulted in numerous complaints. In 2014 weekly fogging of the city with city personnel resumed, but still contract with the County for larvaciding. In-house mosquito fogging cost for 2014 was \$18,115 excluding personnel costs. The County cost for larvaciding was \$2,821 in 2014. In 2013, County fogging and larvaciding cost was \$21,028.

STORM DRAINAGE: The Metropolitan St. Louis Sewer District (MSD) owns and maintains the storm sewer systems. However, they do not accept responsibility for crossroad culverts or bridges. Culverts (pipe and concrete box) are the responsibility of the agency which owns the street. MoDOT is responsible for the storm sewers along Manchester Road.

In 2012 federal funds were approved for the rehabilitation of the deteriorated floor, walls, ceiling, and to support the sagging downstream gabion walls of the Holloway Road culvert. The construction was completed in 2014 at a cost of \$591,842.80 of which 80% was federally reimbursed. The total project cost which began in 2013 was \$682,000.

Creeks are on private property; therefore City participation in stabilizing erosion is restricted to situations where a home is in immediate danger. Due to funding limitations in West St. Louis County, MSD's assistance is limited to removing fallen trees that are blocking the flow in creeks provided access is available.



Before – Holloway Culvert



After – Holloway Culvert



Before – Holloway Culvert



After – Holloway Culvert

LEAF COLLECTION: The 2014 curbside leaf program began on October 27. Since 2010, three crews were assigned south of Manchester Road and four crews north each day. Due to the heavier volume of leaves and phone calls, all crews focused on the area north of Manchester Road which was completed on December 11. Below are the past completion dates:

Year	Completion Date
2004	December 3, 2004
2005	December 1, 2005
2006	December 20, 2006
2007	January 8, 2008
2008	December 5, 2008
2009	December 7, 2009
2010	December 7, 2010
2011	December 5, 2011
2012	December 6, 2012
2013	January 3, 2014
2014	December 11, 2014

Approximately 32 resident calls were received prior to the start date. During the scheduled dates (October 27 and December 11) 287 calls were received. Following the scheduled final week 182 calls were received, but the majority of callers were satisfied knowing that collection would continue until all leaves are collected. No days were lost due to weather; sleet on December 1 and rain on December 4-5 slowed vacuuming.

	2014	2013	2012	2011	2010
Volume collected (cy) ⁽¹⁾	8,960	13,120	8,820	6,880	7,520
Motor fuel (gals)	4,739	7836	5303	4,231	5,613

	Oct. 27	Oct. 28	Oct. 29	Oct. 24	Oct. 25
Start date	Oct. 27	Oct. 28	Oct. 29	Oct. 24	Oct. 25
End date	Dec. 11, 2014	Jan. 3, 2014	Dec. 6	Dec. 5	Dec. 7
Number of Saturdays	0	0	1	0	0
Number of days	32	46	30	29	30
Regular man-hours ⁽²⁾	6,281	10,121	6,260	6,678	6,960
Overtime man-hours	0	0	92	0	0
Part-time employee	0	256	419	440	1,068
Contractual labor hours	1,194	1,078	554	790.5	424
TOTAL HOURS	7,475	11,543	7,325	7,908.5	8,452

(1) Based on compacted volume disposed of by Republic Services.

(2) Hours include preparing equipment for start of season and cleaning equipment for storage. Hours loading leaves into roll-off boxes are excluded.

SUPPORT SERVICES PROGRAM

Support Services (includes fleet & equipment maintenance)	Amended Budget	Actual
2014	\$716,648	\$714,114
2013	\$932,816	\$931,722
2012	\$808,847	\$806,845

Vehicle & Equipment Replacements	2014 Actual	2013 Actual	2012 Actual
One ton truck			2 x \$57,840
Leaf Vacuum	\$9976		
Tandem Truck with plow & spreader		\$154,311	
Bed Replacement		\$18,572	
Trailer			\$7,318
Pick Up Truck	\$32,008	\$22,915	\$21,900
Sidewalk Grinder (replacement)		\$8,700	
Backhoe Loader	\$96,150		
Plate Compactor	\$3,719		
Hydraulic Breaker	\$6,300		
Skidsteers x3	\$150,593		
TOTALS	\$298,746	\$204,498	\$144,898

FLEET MAINTENANCE: Two designated mechanics service and repair City vehicles and heavy and small motorized equipment. Welding, metal fabrication, and repairs of damaged metal equipment components are completed in-house. The following repairs are outsourced:

- Engine repair
- Engine diagnostics
- Transmission repair
- Exhaust
- Wheel alignment
- Tire mounting
- Window glass repair and replacement
- Hydraulic component repairs
- Air conditioning
- Safety and emissions inspections.
- Radiator repairs
- Alternator and starter rebuilds
- Brake drum and rotor resurfacing
- Tractor pivot pin re-bushing and honing
- Medium duty truck king pin replacement
- Seat and interior repairs
- Diesel engine tune ups
- Diesel fuel injection repairs
- Fuel tank repairs
- Police radar repairs
- Police in car computers
- Police in car cameras
- Rechargeable flashlight units
- Siren control boxes
- Emergency generator repair and service
- Vehicle rust proofing
- Electronic controlled plow hoist repairs
- Major diesel engine repairs
- Heavy equipment brakes

Public Works services 75 vehicles (police, parks and recreation, and administration trucks, cars, and vans), one front-end wheel loader, one backhoe, 5 skidsteers, 3 self-propelled rollers, 9 leaf vacuums, and an assortment of 77 small pieces of equipment. Specialized equipment such as mowers and chippers are serviced by either the parks or golf course maintenance personnel.