



*City of Lawrence*  
PUBLIC WORKS

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# END OF YEAR REPORT 2008

Charles F. Soules, P.E.  
Public Works Director

# INTRODUCTION

The divisions of Public Works provide core community services vital to the growth, health, safety, comfort and quality of life for our community. The annual report highlights the meaningful contributions made by the employees and divisions of the Public Works Department to achieve the overall mission of the City of Lawrence.

## MISSION

We are committed to providing excellent city services that enhance the quality of life for the Lawrence community.

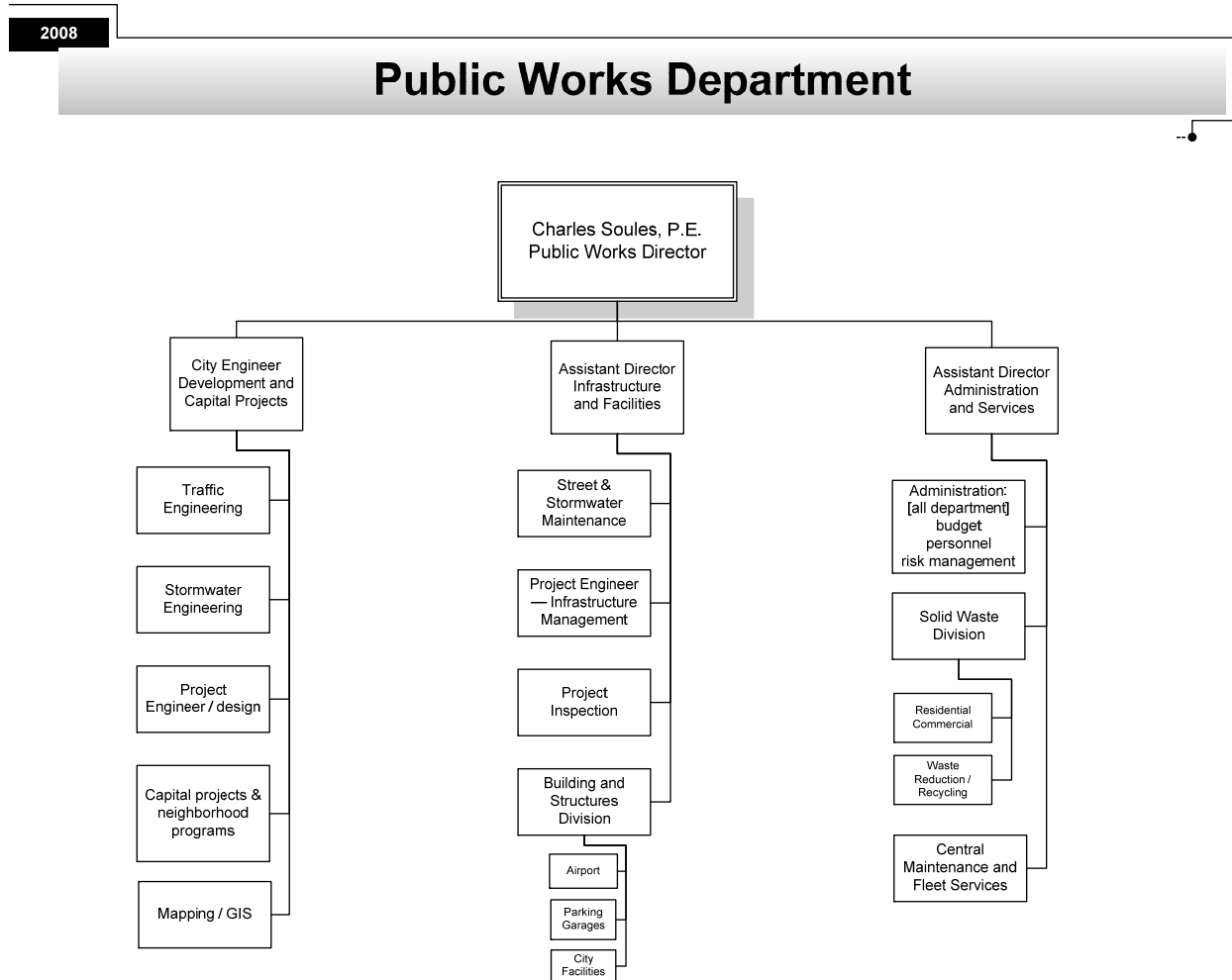
## VALUES

- We are committed to these basic principles:
  - Integrity
  - Courtesy
  - Fairness
  - Honesty
- How we get the job done is as important as getting the job done.
- Our interaction with the community will be professional, responsive, direct, personal, caring and appropriate.
- We will promote teamwork, employee satisfaction, and professional development in order to provide innovative, cost effective, efficient service.

*We want our citizens, clients, and customers to have high expectations of government service and we will do our best to meet and exceed those expectations.*

# GENERAL ADMINISTRATION

The Public Works Department is organized by core services: administration and services, infrastructure and maintenance, and engineering. A summary organizational chart is included below for quick reference.



The administrative function of Public Works provides professional support for all divisions and employees in areas such as budget and finance, personnel administration, risk management issues, policy and program development. and website administration.

**Personnel functions:** There were 193 authorized positions in the Public Works Department. In 2008, the department recruited for 29 vacant positions. In 2007 and 2006, we filled 34 positions and 42 positions, respectively.

**Budget administration:** The Public Works Department is responsible for budget development and administration for all divisions listed below. Revenue and expenditure

numbers reported below reflect those reported in the accounting system at the beginning of January and have not been audited or adjusted.

<b>EXPENDITURES</b>					
Fund	Division	Description	2006	2007	2008
214	3800-578	Gas Tax Fund	\$ 2,594,695	\$ 2,699,828	\$ 2,616,048
001	2500-565	Health Department	\$ 932,709	\$ 888,049	\$ 951,690
001	3000-570	Street Maintenance	\$ 3,121,727	\$ 2,488,859	\$ 3,020,736
001	3100-571	Engineering	\$ 728,431	\$ 825,061	\$ 806,577
001	3200-572	Traffic Engineering	\$ 576,593	\$ 577,173	\$ 579,623
001	3300-573	Airport	\$ 85,144	\$ 89,623	\$ 137,844
001	3400-574	Building Maintenance	\$ 840,994	\$ 779,486	\$ 753,782
001	3600-576	Street Lights	\$ 551,240	\$ 539,961	\$ 544,557
001	3700-577	Levee	\$ 111,891	\$ 138,690	\$ 143,012
502	3510-571	Residential Solid Waste	\$ 4,637,488	\$ 4,633,256	\$ 5,034,805
502	3520-572	Commercial Solid Waste	\$ 4,189,292	\$ 4,335,666	\$ 4,311,405
502	3530-573	Waste Reduction / Recycling	\$ 889,148	\$ 722,629	\$ 774,900
504	3200-579	Central Maintenance Garage	\$ 2,794,310	\$ 3,066,687	\$ 3,662,636
505	3900-579	Stormwater	\$ 3,308,498	\$ 3,400,920	\$ 3,219,293
<b>Total Public Works</b>			<b>\$ 25,362,159</b>	<b>\$ 25,185,888</b>	<b>\$ 26,556,909</b>
<b>REVENUES</b>					
214		Gas Tax Fund	\$ 2,549,909	\$ 2,669,315	\$ 2,760,748
502		Solid Waste Division	\$ 9,137,590	\$ 9,312,015	\$ 9,755,579
504		Central Maintenance Garage	\$ 2,954,417	\$ 3,019,564	\$ 3,394,658
505		Stormwater Utility	\$ 3,136,622	\$ 2,908,637	\$ 2,944,674
			<b>\$ 17,778,539</b>	<b>\$ 17,909,532</b>	<b>\$ 18,855,659</b>

**Risk management function:** Statistics are collected by the Administrative Services Department, Risk Management office tracking all workers' compensation incidents requiring medical attention, auto accidents including claims against the City for damage to private vehicles as a result of street conditions such as potholes, and general liability claims. Details for Public Works are reported below.

	2006	2007	2008	2006	2007	2008	2006	2007	2008
	<b>Workers' Comp requiring medical attention</b>			<b>Vehicle accident claims</b>			<b>General liability claims</b>		
Building Maintenance	1	1	1	0	0	0	0	1	1
Central Maintenance Garage	3	5	6	0	0	0	0	0	0
Engineering Division (& traffic)	3	3	0	0	0	1	1	2	3
Solid Waste Division	31	30	32	1	3	7	7	11	10
Street Division (& storm ops)	8	4	11	3	4	1	12	20	25
<b>Total Public Works</b>	<b>46</b>	<b>43</b>	<b>50</b>	<b>4</b>	<b>7</b>	<b>9</b>	<b>20</b>	<b>34</b>	<b>39</b>

## Emergency management function:

The City of Lawrence was fortunate in 2008, not experiencing a federally eligible disaster situation in our community. The Public Works Department remained active in emergency management functions nonetheless.

- Tornado response assistance to Manhattan: June 11th, 2008, two supercell thunderstorms produced tornadoes across northeast Kansas. The communities of Chapman, Manhattan, and Soldier were hit hardest by the tornadoes. The City of Lawrence sent a “fully contained” crew to the City of Manhattan to assist with recovery. In this context, “fully contained” means a crew that was able to be assigned to operate independently (crew, supervisor, and equipment), as instructed by the community. These experiences assist our friends and neighbors responding to crisis, but also serve as invaluable training for our field crews and supervisors. The City of Manhattan was able to submit Lawrence costs for FEMA reimbursement. On December 30, 2008, the City of Manhattan delivered a check to the Lawrence City Commission reimbursing all Lawrence costs.

Assistance to City of Manhattan  
June 16 through June 20, 2008

Item	Cost
Personnel costs (excluding benefits)	9,862.72
Equipment costs (per work order)	4,740.00
Food	464.16
Lodging	1,159.79
	<hr/>
	16,226.67

- Disaster preparedness planning efforts in 2008: Public Works staff assisted in a variety of emergency response planning efforts with the Douglas County Emergency Management Department and many stakeholders from surrounding communities. The plans will be formally adopted by city and county governing bodies in 2009.
  - Disaster Debris Management Plan
  - Disaster Mitigation Plan

**Website administration:** The Public Works Department website was completely re-constructed in 2008, in conjunction with a new content management system. The division also created and management a website for the Mayor’s Climate Protection Task Force.



# BUILDING and STRUCTURES

The Buildings and Structures Division is responsible for maintenance for municipal buildings except where such services are provided contractually. This division is responsible for two multi-level parking structures and a variety of project and facility responsibilities at the airport. In addition to maintenance costs, utility costs for some buildings are paid out of this division's budget. The division provides maintenance services and/or technical support for approximately 40 facilities.



<b>Buildings and facilities</b>		
City Hall	Community Health Facility	Carnegie Building
Lawrence Arts Center	Riverfront Mall office annex	Computer Training Room annex
Airport Terminal	Airport Hangar A	Airport Hangar B
Airport Hangar C	Community Hanger	Maintenance Hangar
Airport (G.U.T.S)	Runway 1-19	Runway 15-33
Airport Taxiways	Solid Waste facility	Solid Waste Annex, North
Fire / Med Station 1	Douglas County Senior Center	Fire / Med Station 2
Fire / Med Station 3	Fire / Med Station 4	Fire / Med Station 5
Fire / Med Station 6	Fire and Rescue Training	Street Maintenance facility
Central Maintenance Garage	ITC building	Traffic Engineering
New Hampshire Parking Structure	Downtown electrical (primary)	Building demolition
Riverfront Parking Structure	Transit offices	HHW buildings
Court services annex	Health Care Access	Lawrence Public Library

**Building maintenance:** Much of the work completed by the Building Maintenance Division staff is emergency repair and response to nuisance situations. Many services provided by this division are provided by contractors. The Building Maintenance Manager is responsible for allocating staff between competing demands and selecting contractors, administering contracts, and monitoring the work. Work order statistics are shown in the table below.

A sampling of projects completed in 2008 include:

- Planning and project oversight assistance with new Tire Shop
- Major electrical renovations at Central Maintenance Garage
- Office renovations (finance department , community health, street division)
- Generator project for City Hall and 2 Fire Medical stations
- Riverfront parking garage structural T repairs
- New Hampshire parking garage column tie re-weld

<b>Facility management</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>
<b>Work order system reporting</b>			
<b>Priority / Response Goal</b>	% completed on time	% completed on time*	
0: 2 hours	not available	94%	92%
1: 24 hours	not available	53%	84%
2: 2-3 days	not available	80%	79%
3: one week	not available	83%	88%
4: one month	not available	65%	70%
5: on list	not available	79%	94%
<b>Type</b>	number	number*	
Demand repairs	not available	332	501
Emergency repairs	not available	40	68
Preventive repairs	not available	216	291
Routine repairs	not available	318	406
Scheduled repairs	not available	737	800
<b>Energy consumption for key buildings</b>			
<b>City Hall</b>			
Electricity (kilowats)	938,200	901,800	886,200
Electricity / square foot	26.1	25.1	24.6
Natural gas (thermos)	3,212	1,187	2,994
Water (gallons)	6,317	5,114	5,901
<b>Community Health facility</b>			
Electricity (kilowats)	1,166,800	1,166,200	2,652,000
Electricity / square foot	13.5	13.5	30.6
Natural gas (thermos)	16,705	20,540	36,082
Water (gallons) -- building	5,649	5,100	6,432
Water (gallons) -- irrigation	11,713	4,502	
<b>Arts Center</b>			
Electricity (kilowats)	755,840	668,040	730,320
Electricity / square foot	18.9	16.7	18.2
Natural gas (thermos)	not available	29,108	31,190
Water (gallons)	3,413	3,135	3,257
* data includes March through December 2007 only.			

**Lawrence Municipal Airport:** The Lawrence Municipal Airport is operated by a Fixed Base Operator. The official Airport Manager is the Assistant Public Works Director / Infrastructure & Maintenance. Mowing adjacent to runways is completed by the Street Maintenance Division. All other facility management is the responsibility of the Buildings and Structures Division.

The 2007/2008 airport project consists of enlarging the safety area for Runway 15-33. The project involved relocation of two gas transport lines. The project was completed in 2008.

**Parking structures:** The City owns two multi-level parking structures. The Riverfront Parking garage has a total of 510 parking spaces on two levels. Springhill Suites by Marriott leases 110 parking spaces on the upper deck for sole use by the hotel. Over

25 spaces were reconfigured into the portico drop off area at the hotel entrance. The remainder of the upper level parking is free two-hour parking. The lower level parking is paid per day using two walk-up self-pay stations. The New Hampshire Parking garage has a total of 492 parking spaces on four levels and is served by two elevators and five stairwells. The New Hampshire structure has fire sprinkler protection on ground level. This structure also offers free two-hour parking areas and pay per day spaces using a self-pay system. Professional engineering services are used to evaluate the parking structures and recommend repairs as needed.

Improvements in 2008 included structural T repairs to the Riverfront Parking Garage and column tie re-welding in the New Hampshire Parking Garage.

**Downtown projects:** This division supervises one staff person responsible for maintaining the appearance of the two parking structures and other downtown areas, as well as assisting with snow removal and building maintenance projects. Other building maintenance staff members assist on special projects, as needed. Downtown lots were re-striped, as time and weather allowed.

**Building and Structures Division pictures in 2008:**



Trouble-shooting electrical problem at ITC



Parking garage re-striping



Generator, Fire-Medical 2



Work station installation in City Commission room



# ENGINEERING

The Engineering Division is responsible for the review and approval of all plans for streets, sidewalks, and storm sewers. A very small in-house team is able to design smaller projects. The City Engineer heads this work group, and supervises the stormwater and traffic engineering functions as well.

## Project design, review, and mapping

In 2008, a total of 38 plan sets were submitted for review to the Public Works Department. The Department uses a centralized review process and location, facilitating the coordinated review of plans by various work groups. All plan reviews were completed within 7 business days of submittal.

In-house design projects
23rd Street Access Management Project UBS / O'Reilly shared access
Traffic diverter, 18th and Maine
Brick Street project on Ohio
Raised crosswalk at 18th and Louisiana
Burroughs Creek trail
Sidewalk projects, CDBG funding
Clinton Lake Master Plan update
Carnegie Library site plan
6th and Congressional Traffic Signal

Major project work in the Engineering Division in 2008 included administration of contracts with consultants on major projects including ITS project, 19<sup>th</sup> and Louisiana reconstruction, 31<sup>st</sup> Street extension, K-10 turn lanes, and the Burroughs Creek Rail Trail funding through sales tax initiative.

Ohio Street  
Brick street  
Reconstruction →



Before: 8<sup>th</sup> & Ohio, looking north



After: 8<sup>th</sup> & Ohio, looking north



Traffic Diverter



Lawrence Ave speed cushions



18<sup>th</sup> & Louisiana raised crosswalk

## Stormwater maintenance and administration

The stormwater maintenance crew continued to focus on curb inlet replacement, debris removal, channel reconstruction projects. The stormwater maintenance crew statistics and information is reported with the Street and Stormwater Maintenance Division.

Outreach, education, and enforcement: The water festival was held in conjunction with Earth Day. The division is also working to promote Rain Gardens in the community. The division offered multiple Rain Barrel Workshops in 2008 to teach participants how to construct barrels for water management on residential properties.



Water festival 2008



Runoff Race – Trying for Last Place



Rain barrel made at workshop

In addition to outreach and education, the Stormwater Quality Technician is responsible for enforcing and implementing the Stormwater Pollution Prevention ordinance.

Stormwater infrastructure: In an effort to analyze the existing condition of the City's storm sewer infrastructure an inventory and inspection program was launched in March of 2007. Each curb inlet, area inlet and junction box will ultimately be photographed and inspected. Field work will include verification of structure dimensions, location and material type. The project stalled in 2008 due to staffing limitations. The following tables summarize the progress to date:

	2007	2008
Infrastructure inspection to date		
curb inlets	4,574	0
area inlets	384	0
junction boxes	853	0
Total Structures	5,811	0
Structures inspected	1,759	0

Stormwater System Enhancements: A major undertaking for the Stormwater Engineer in 2008 and 2009 will be the recertification of the Kansas River and Mud Creek levee

system. The following projects were constructed to improve the flow characteristics of the existing stormwater system or to solve local drainage issues. They are intended to provide a small glimpse of completed projects.

19<sup>th</sup> & Alabama



Louisiana & 29<sup>th</sup> Pl



Kansas River levee  
Working on re-  
certification



Bridge Inspection: In addition to other duties the Stormwater Engineer will be responsible for the inspection of all City owned and maintained bridges for in 2008 and 2009. Future bridge inspections will be done on a bi-annual basis.

## Traffic Engineering and operations

The Traffic Engineering Division reviews plats and site plans, street plans, analyzes traffic data, and provides professional and technical data to the Traffic Safety Commission. Field crews are responsible for signal maintenance, signal timing, street signs, and pavement markings. The Traffic Engineer also works with community and neighborhood groups to address specific concerns.

Traffic maintenance operations	2006	2007	2008
Traffic Signals Maintained	85	87	87
School Beacons Maintained	31	32	33
Traffic Signal Work Orders Completed	406	377	496
Traffic Sign/Pavement Marking Work Orders Completed	1960	1649	1258
Electronic Traffic Counts Conducted	141	66	73
Manual Traffic Counts Conducted	8	77	90
Number of signal heads converted to LED		107	294
Traffic signal preventive maintenance inspections completed		9	6
Number of new signs installed		467	468
Number of signs upgraded		211	218
Number of signs repaired		1727	2019
School Crossing Counts Conducted			12
Traffic Safety Commission meetings administered			8



25<sup>th</sup> and Iowa



19<sup>th</sup> and Massachusetts



23<sup>rd</sup> and Harper



Wiring inspection

# INFRASTRUCTURE MANAGEMENT

Infrastructure management spans and coordinates multiple divisions and functions. It includes project administration and construction inspection. The group completes annual cycles of pavement inspection and rating. Major pavement restoration and replacement are managed through this work group, as well as coordination with the street maintenance function internally.

## Infrastructure Management

Coordinated infrastructure management is an on-going priority. Pavement restoration and maintenance is coordinated with pavement management, as detailed below. Contracted repair and maintenance for 2008:

ITEM	2006	2007	2008
Street overlay (in miles)	12.80	8.70	13.71
Microsurfacing (in miles)		12.90	1.60
Curb and gutter replacement (in miles)	10.2	6.6	4.3

The chart below summarizes all public infrastructure contracts administered and inspected, including overlay and curb repair, benefit districts, and private projects. Stormwater projects are detailed in the Engineering section.

ITEM	2006	2007	2008
Linear / Lane-feet of Pavement	42,686	41,495	30,378
Linear Feet of Curb & Gutter*	139,267	75,171	40,022
Linear Feet of Storm Sewer	16,242	8,786	2,596
Linear Feet of 4" x 5' Sidewalk*	22,221	8,616	3,597
Linear Feet of 4" x 6' Sidewalk*	5,387	3,251	6,380
Linear Feet of 10' x 6" Rein. Rec. Path	4,039	6,266	1,405
Linear Feet of Milling	66,997	46,044	78,440
Linear Feet of Asphalt Overlay	67,586	46,129	76,810
Linear Feet of Retaining Wall	0	1809	160
Square Yards of 3.5" White Topping	0	0	0
Traffic Signal	1	1	2
Accessible curb ramps*	154	81	74
<b>TOTAL COST OF PROJECTS</b>	<b>\$9,299,267</b>	<b>\$11,729,909</b>	<b>\$8,642,280</b>

Pictures from some of the major projects for 2008 are below:



19<sup>th</sup> and Louisiana project



19<sup>th</sup> and Louisiana project



19<sup>th</sup> and Louisiana project



19<sup>th</sup> and Louisiana project



23<sup>rd</sup> and Harper



25<sup>th</sup> Terr, roundabout

## Pavement Management Program

The inventory for the Pavement Management System was completed in 2005. The goal is to update 25 percent of the inventory annually. Every street is inventoried and inspected once every four years. The project engineer is assisted by inspectors and other staff as available. Summary data are compiled and used as the basis for the annual street maintenance program, planning both in-house and contracted work. In 2008, the overall average PCI for Lawrence Streets was 68.6, up from 66.2 at the end of 2007.

Ratings and conditions	2007	2008
Average PCI rating (overall, end of year)	66.2	68.6
% of pavement w/ PCI rating of acceptable or above		
Arterial	62.5%	57.50%
Collector	75.1%	75.40%
Residential	75.8%	75.50%
% of curb and gutter rated as		
Good	57.5%	57.40%
Fair	31.5%	31.60%
Poor	11.0%	11.00%
% of sidewalk infrastructure rated as		
Good	52.0%	52.0%
Fair	31.8%	31.8%
Poor	13.1%	13.1%
Critical	3.2%	3.2%

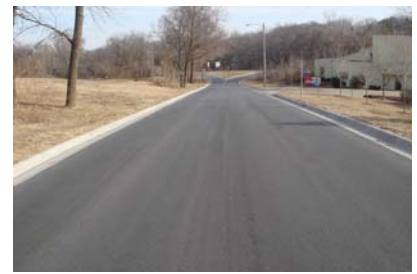
Typically, a street segment is considered to be in “unacceptable” condition when the PCI drops below 65 for arterials, 60 for collectors, and 55 for residential streets. (Unacceptable streets generally are not good candidates for preventive maintenance work. They are more likely to require rehabilitation and possibly complete reconstruction.) The Pavement Management System showed 29.0% of street segments were rated as unacceptable at the end of the year. The 2008 pavement programs included mill and overlay, curb and gutter replacement, micro-surfacing, and an aggressive crack-sealing program.



Trail Road, curb & gutter, mill & overlay



Crack-seal treatment



Rockledge, curb & gutter, mill & overlay

## FLEET SERVICES / Central Maintenance Garage

The Central Maintenance Garage operates as an internal service fund to provide fuel, management, and repair services for the City's fleet of vehicles and equipment. The maintenance facility is located at 11<sup>th</sup> and Haskell. Fuel stations are located at 11<sup>th</sup> and Haskell and the Wakarusa Service Center location. In late 2007 and 2008, Fire Medical vehicle operations were centralized at 11<sup>th</sup> and Haskell to improve overall fleet maintenance efficiency. The fleet included 689 active units at the end of 2008.<sup>1</sup>

### Repairs and Maintenance

**Productivity:** One goal for fleet services is to focus an increasing level of energy on preventive maintenance versus repairs. The intent is to identify and repair more problems while the unit is in for routine maintenance, thus reducing downtime and unscheduled repairs. Fleet Services strives to achieve at least 55% of work as preventive maintenance and less than 45% of work as repairs. In 2007, the ratio fell due to the integration of Fire Medical units into the overall fleet. At the time of integration, there was a backlog of repair work and a shortage of reserve units. Those issues have been addressed systematically over the course of integration. The continuing decrease of preventive maintenance to repair work orders reflects the aging fleet and the inability to replace equipment on a scheduled basis due to fiscal constraints in 2007 and 2008. The chart below shows the percentage of repairs versus preventative maintenance based on hours and dollars billed against the two types of work orders.

percentage of work	2006	2007	2008
Repairs	53.0%	69.3%	72.4%
Preventive maintenance	47.1%	30.8%	27.6%

**Service calls:** Another key goal for the division is to reduce the number of service calls. Some service calls are unavoidable, such as accidents and punctured tires. Generally, a reduction in service calls indicates a higher level of reliability in the fleet. The increase in service calls due to break-downs is a combination of increasing the fleet by seventeen units and deferring replacement of equipment due to budgetary constraints.

Service calls	2006	2007	2008
Tire repairs	78	73	61
Break-downs	196	260	272
Total	274	333	333

<sup>1</sup> Fleet services revised the method of counting active units in 2007. Previous to that year, active unit figures counted components as independent units. For instance, the snow plow attachment for the dump truck would be counted as a separate unit. Total units reported in 2006 were 714. Total units reported in 2007 were 673. The change is a reflection of the method of counting units.



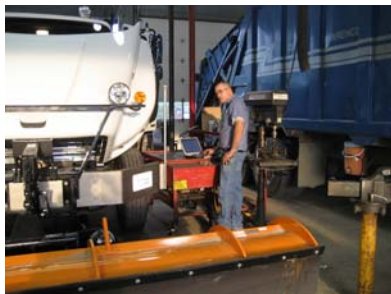
## Highlights and accomplishments:

- **Fire-Medical Fleet Integration:** The integration of the Fire Medical fleet with other fleet maintenance was functionally completed in 2008. Operations were centralized at 11<sup>th</sup> and Haskell to improve the efficiency of operations and the ability to utilize all mechanics. Shop space for fleet size continues to be an issue.
- **Training:** The mechanics are dedicated to quality training to improve their ability to provide the best services possible for the city fleet.
  - Emergency vehicle repairs and EVT certifications testing: This was again the primary training focus in 2008. HEAT provided cost effective training programs twice this year.

The spring HEAT training program in Wichita provided training for five personnel. Certifications were achieved in police vehicle equipment, and fire water pump repair.

The fall HEAT training held in Overland Park provided training for five personnel in Fire apparatus electrical multiplexing, aerial device testing and inspection, fire pump testing and maintenance, air conditioning service and emergency lighting equipment. Certifications were achieved ambulance heating and air conditioning.
  - In house specialized training: The Central Maintenance Garage sponsored and hosted forklift and crane and rigging safety training for all city departments. All CMG technicians and supervisors completed the forklift training. Two technicians completed the crane and rigging training. A total of city employees completed and passed the forklift certification program. Completed the crane and rigging certification program.
  - ASA Visions Conference: Seven technicians and one support person participated in the Visions Conference. Training programs included a variety of four hour and eight hour classes. This is a weekend training session, and the technicians voluntarily attend this training on their personal time.
  - Optional training events: Other optional training offered in the evenings for fleet technicians were Car Quest diagnostic training and Dyson heavy duty air conditioning training.
  - Other specialized training included one technician participating in a three day course on Elgin street sweepers and three personnel completing TIA tire safety training.
- **Tire Shop:** Construction of a new tire repair shop was started in 2008. This facility should be completed and operational in 2009.
- **Electrical Service Upgrade:** The garage underwent major electrical modifications in November. The electrical service coming into the building was replaced new electrical panels installed.
- **Recycling:** There continues to be active participation in recycling and the handling of materials in the most environmentally friendly ways feasible for the operations.
  - Used oil products: 1,720 gallons burned in waste oil heater and 3,270 gallons recycled through Midland Clearwater Refinery.

- Antifreeze: The antifreeze recycling program was changed completely in 2008. All antifreeze used in city vehicles is now recycled. Our supplier has the capability of cleaning used antifreeze to base glycol. Then the appropriate additives are put back into the glycol to produce the specific type of antifreeze needed for each manufacturer. We stock standard inorganic antifreeze (green), Ford and GM spec organic extended life (yellow and orange) and CAT OAT red. All antifreeze that is drained from city units is sent to the vendor for recycling.
  - Air filters: A pilot program was initiated in 2005 to recycle air filters for larger trucks and equipment. A vendor picks up the filters, cleans and pressure tests them, then returns them to the garage. In 2008, 90 air filters were reused, saving over \$1022.87 over purchasing new filters.
  - Batteries: All automotive batteries are recycled by Interstate Battery. Flashlight type batteries are recycled through the HHW program.
  - In-sourcing: The fourth year of selling fuel to the Lawrence-Douglas County Housing Authority was completed successfully in 2008, with total sales of \$20,676.00.
- Motor pool operations: Central Maintenance operates eight vehicles and one tow behind air compressor for rental to departments when one of their vehicles is in for service or when a department needs to send a group of people to a meeting or training session. These vehicles are older units and include a seven-passenger van, a fifteen passenger bus, 1 ton plow truck, and pickups. The motor pool rentals totaled 282 days this year at an income of \$5680.



Engine set-up



Belt check



Black track attack



New tire shop, in progress



Parts room electrical project



Brake work

<b>FLEET STATISTICS</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>
Miles driven			
Police Department	973,951	1,054,022	1,018,076
Public Works	977,822	953,213	928,091
Fire Medical	336,997	303,962	309,615
Utilities Department	416,375	303,562	319,057
Parks and Recreation	286,347	286,344	263,238
Miscellaneous (admin., BI, plan., etc)	97,262	146,613	130,103
<b>Total miles</b>	<b>3,088,754</b>	<b>3,047,716</b>	<b>2,968,180</b>
Off road equipment usage (hours)	21,256	21,779	24,183
Operations			
Repair orders completed	2,642	2,987	2,519
Preventive maintenance orders completed	1,111	1,472	958
Billing			
Total number of hours billed	14,926	18,679	15,133
Total labor (in \$\$)	746,300	942,040	756,646
Total parts (in \$\$)	837,123	747,579	926,040
Commercial (sublet) (in \$\$)	171,003	97,778	130,278
Miscellaneous	25,440	28,608	25,952
Total dollars billed for repairs	1,779,866	1,816,005	1,838,916
Fuel system			
Total fuel sold for year (gallons)	447,728	466,648	461,738
Total diesel fuel sold (in dollars)	613,219	704,209	905,454
Total unleaded gasoline sold (in dollars)	525,294	550,708	640,659
Total fuel sales (in dollars)	1,138,512	1,254,918	1,546,113
Total Operational Billing	2,920,172	3,072,600	3,385,029

**Performance measures:** The performance measurement system provides additional tools to evaluating and reporting fleet operations.

<b>performance measures</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>
Average operational fleet readiness			
fire department	not available	98.3%	98.6
police department	not available	97.6%	97.0
all other heavy duty equipment	not available	96.8%	95.7
all other light duty equipment	not available	98.4%	98.3
Average days to complete work order			
heavy duty preventive maintenance	not available	4.3	6.0
heavy duty repair	not available	1.3	1.5
light duty preventive maintenance	not available	2.1	2.9
light duty repair	not available	1.0	1.5
Avg percent mechanics hours billed		82.2%	90.2%
Average fuel cost per 1000 miles driven			
heavy equipment / vehicle	not available	\$ 700.30	\$ 908.41
light equipment / vehicle	not available	\$ 250.01	\$ 307.02
Number of repeat repair orders		31	18
Fuel storage system tests completed		251	254

# SOLID WASTE DIVISION

The Solid Waste Division represents an enterprise fund, or utility, created for the purpose of managing the solid waste for the City of Lawrence. Comprehensive solid waste services are provided for residents, businesses, and industry. Services include collection, disposal, recycling, and technical assistance.

The following chart provides a brief comparison for all services combined:

<b>Tons collected</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>
Tons collected for disposal	75,361	72,703	71,572
Tons (est.) collected for recycling / composting	15,174	16,900	14,477

In 2007, Lawrence achieved a 35% recycling rate which is one of the highest in the state and is higher than the national average for that year. The recycling rate is likely to be similar in 2008. (The Annual Recycling Report will be prepared in the spring when final numbers are available.)

The Solid Waste Division is comprised of three functional divisions: Residential Collection; Commercial Collection (which includes Maintenance Operations); and Waste Reduction and Recycling (WRR).

## Residential Collection

The number of housing units grew slightly in 2008. Residential growth has a direct impact on our residential services. Seventeen three-member rear-loader crews pick up the residential waste. These crews also pick up all rear-loader commercial waste along their residential routes as well as the grass and leaves for composting.

The chart below highlights some of the residential collection activity.

	<b>2006</b>	<b>2007</b>	<b>2008</b>
Roll-out carts	6,948	7,469	7,829
Bulk items collected	3,830	3,200	2,931
Freon containing items	476	395	379
Tires collected	2,469	2,616	1,918

Notes on the services mentioned above: Roll-out trash carts allow for automated collection, reducing the potential for injury to the solid waste loaders. Bulky items, including refrigerators and air conditioners, are collected by appointment. The Division is required by Federal law to recover Freon from refrigerators and air conditioners that are collected. Freon was recovered in-house by certified technicians from Maintenance Operations. Tires are collected by appointment at no cost to residents (limit of 5 per household per year). Whole tires are not permitted to be disposed in the landfill. The

tires were picked up from the Solid Waste facility by private companies and then shredded and monofilled (65%) or recycled (35%).

Residential crews performed alley litter collections on Fridays on a rotating basis among neighborhoods with alleys. Downtown alleys were patrolled for litter every Friday.

Several neighborhood cleanups were performed at the request of and in coordination with neighborhood associations. Neighborhood clean-ups are typically done on Fridays, so the neighborhoods can save money by not paying additional costs for Division personnel and equipment (required for Saturday services due to overtime costs).



Inclement weather operations



Residential "move-out"



Residential crew operations



Operations in traffic



Commercial collection



Maintenance operations

## Commercial Collection

Growth in the commercial sector continued. The Division reviews site plans for accessibility, location of refuse containers, and type of service required and made comments to the Planning Department as necessary.

Maintenance Operations maintains existing containers, prepares new containers for service, and delivers containers to new locations. They also do routine maintenance on collection vehicle packer bodies and other equipment used within the Division. A weekly schedule for packer maintenance is followed.

Roll-off solid waste services are an important part of our commercial service delivery. The chart below highlights roll-off activity:

	2006	2007	2008
Roll-off service calls	7,654	7,439	6,969
Permanent accounts	62%	67%	64%
Revenue from roll-off service	1,657,950	1,655,200	1,651,970
Compactor units in service	18	21	30

The Division continued the rate audit of downtown businesses. Periodic rate reviews are necessary in the downtown area due to the changing businesses. Also many businesses use shared containers located on city-owned right-of way or parking lots. Those rates are determined by square-footage of the business and type of business.

Rear-load dumpster



Front-load dumpster



Roll-off



## Waste Reduction and Recycling

Waste Reduction and Recycling (WRR) expanded on existing collection programs, made program improvements, and added one new program in 2008.

The chart below highlights some of the programs in which the Waste Reduction and Recycling staff is involved. These programs are typically implemented as a partnership between WR/R staff and the operations side of Solid Waste for collection and processing.

	2006	2007	2008
Grass, leaves, and brush collected	11,964	17,990	12,381
Avoided disposal (est) costs in \$\$	264,921	383,096	277,235
Christmas trees collected (tons)	32	29	28
HHW/SQG program collections (lbs.)	168,742	185,997	193,418
HHW participants served	2,802	3,118	3,228
SQG participants served	88	92	120
Old Corrugated Cardboard OCC (tons)	939	1,060	1,235
Old Newspapers ONP (tons)	866	844	636
Sorted Office Paper SOP (tons)	33	33	39
Mixed paper MIX (tons)		49	186

Yard waste collection and compost program: 2008 was the fourth year of the “preferred container program,” where yard waste was collected at the curb in cans, carts, or compostable bags. The community achieved a 99.1% compliance rate with preferred container set outs. Community-wide collection of yard waste on a single day remains challenging for solid waste crews, but the high compliance with preferred container requirements makes the collection process safer and much more efficient, as well as improving the final quality of the compost. Compost give-away events continue to be very popular and a valuable way of returning this resource to the community.

	2006	2007	2008
Preferred container compliance	98.5%	99.0%	99.1%
# of give-away event days	5	6	6
Vehicle visits	1,074	1,866	2,847
Tons of material distributed	1,230	2,766	4,271

Household hazardous waste (HHW) and small quantity generator (SQG) programs: The HHW program is an important component of solid waste services in reducing the potential toxicity of the materials taken to the landfill. The program has matured from a weekend collection event to a standardized service by appointment. Participation by households in HHW and businesses and institutions in the Small Quantity Generator (SQG) collection program increased to 3,228 participants in 2008. Overall, these programs experienced an 3.5 to 4 percent increase in the number of participants and pounds of materials recovered, respectively.

Fibers recycling program: The fibers recycling program consists of business collection services for cardboard and sorted office paper plus drop off boxes for residential uses. The fibers program expanded the number and locations of Mixed Paper collection boxes in 2008. Mixed paper boxes will take everything from junk mail to office paper to chipboard. This program was piloted in 2007 and quickly incorporated into normal services. Material recovery data are reported in the chart for WRR. Recycling drop off locations and program details are listed below.



	2006	2007	2008
Fiber programs recovery (tons)	1,838	1,986	2,097
Fiber program revenue (\$\$)	146,843	220,978	233,934

CITY OPERATED RECYCLING DROP OFF SITES		newspaper	cardboard	mixed paper
Brandon Woods	1501 Inverness			X
Checkers Food Store	2300 Louisiana	X	X	X
Dillon's Food Store	6th & Wakarusa	X	X	X
Douglas County Bank	9th and Kentucky	X		
Drury Place	15th and Kasold	X		
Hillcrest Shopping Center	9th and Centennial	X		X
Hobby Lobby	1801 W. 23rd	X	X	X
Hy-Vee Food Store	3504 Clinton Parkway	X	X	X
Hy-Vee Food Store	6th and Monterey Way	X	X	X
North Lawrence	740 N. 2nd	X	X	
Westlake's Ace Hardware	6th and Kasold	X		

Special events and public outreach: Public education and outreach remained a strong component of WRR activities.

- Electronic Waste collection events: A new program was added in 2008 for the collection of electronic waste. An event was held at the Lied Center in April and another at Free State High School in October.
- Earth Day celebration: Staff organized the annual Earth Day Celebration in the Park, in conjunction with a parade and the April Showers to Water Towers outreach program.
- Lawrence Energy Conservation Fair, Sustainable Business Tour and Sustainable Homes Tour: The 8<sup>th</sup> Annual Energy Conservation Fair was held in October. The event was expanded in 2008 to include a keynote speaker and a sustainable business tour prior to the energy fair.
- America Recycles Day: Typically an opportunity for outreach within the City organization.





Compost give-away March 08



Compost give-away, October '08



February Outreach event



Earth Day parade



Parade



Celebration in the Park



Electronic waste collection, April



Electronic waste collection, Oct 08



E-waste, October 2008



Energy Conservation Fair



Energy fair outside exhibits



HHW Ether Call, May 2008



HHW Mercury for State Mercury Sweep, 11-08



Zarco Green fuels, outreach 6-08



Water festival, 2008



# STREET MAINTENANCE DIVISION

The Street Maintenance Division is responsible for the routine maintenance of the City's streets, alleys, curbs, and gutters. The budget provides funds for concrete, asphalt, sand, rock, and salt for snow and ice control. Additional funds are budgeted for outside firms to assist in removing snow. The work crews require the use of a variety of equipment and vehicles. The cost of equipment maintenance and fuel is in this budget.

## Highlights and accomplishments:

The majority of work completed by the division is routine maintenance and small projects that are not cost effective to contract. The details of the maintenance work are listed in the table later in this section. Other notable projects included:

<b>STREET MAINTENANCE PROJECTS 2008</b>	
<i>represents a <u>sample</u> of projects completed by maintenance crews</i>	
<p><b>Base failure repairs</b></p> <ul style="list-style-type: none"> <li>6th &amp; Wisconsin</li> <li>3200 blk Bob Billings Pkwy</li> <li>1144 Louisiana St</li> <li>3031 Topeka Ln</li> <li>1120 Haskell Ave</li> <li>1400 Iowa St</li> <li>2100 blk Bob Billings Pkwy</li> <li>1500 blk Iowa St</li> <li>2200 blk Kasold Dr.</li> </ul> <p><b>Approaches, valley gutters, intersections</b></p> <ul style="list-style-type: none"> <li>N 2nd Lyon St</li> <li>1003 N 3rd St</li> <li>E 7th &amp; Rhode Island St</li> </ul> <p><b>Special projects</b></p> <ul style="list-style-type: none"> <li>Fire Station #2 on Mass. St driveway</li> <li>Paved Oread Ave. 12th -13th St</li> <li>Paved W 17th St. Kentucky to Louisiana St</li> <li>Paved Indiana 5th to 6th St</li> <li>Remodeled and Painted Offices 1120 Haskell</li> </ul>	<p><b>Curb repair and replacement</b></p> <ul style="list-style-type: none"> <li>300 blk Woodlawn Dr</li> <li>305 E 7th St</li> <li>600 blk Mass</li> <li>1815 Tennessee St</li> <li>409 Park Hill Terrace</li> <li>3700 Greenway Cir</li> <li>2221 Princeton Blvd</li> <li>1835 Massachusetts St</li> <li>4921 W 18th St</li> <li>1510 E 24th St</li> <li>2529 Cimarron Dr</li> <li>1305 E 21st Terrace</li> </ul> <p><b>Pedestrian and sidewalk issues</b></p> <ul style="list-style-type: none"> <li>21st Terrace &amp; Silicon</li> <li>1611 E 24th Terrace</li> <li>722 Maine St</li> <li>W 7th &amp; Tennessee St</li> <li>300 blk E 8th St</li> <li>E 7th &amp; New York St</li> <li>13th St &amp; Massachusetts St</li> </ul>



W. 6<sup>th</sup> Street



Topeka Lane



W 2<sup>nd</sup> and McDonald Dr



W 2<sup>nd</sup> and McDonald Dr



East 23<sup>rd</sup> St



17<sup>th</sup> at Tennessee



17<sup>th</sup> at Tennessee



Snow day practice



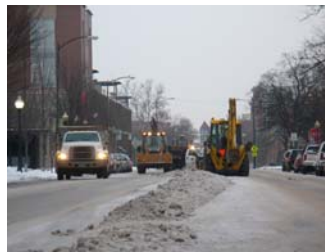
North Lawrence pump station  
Clean out



North Lawrence pump station  
Clean out



Downtown snow removal



Downtown snow removal

<b>STREET MAINTENANCE STATISTICS</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>
<b>Paving projects</b>			
Number of projects	49	21	35
Tons of asphalt placed	1,219	1,942	2,575
Cubic yards of concrete placed	238	417	381
Lineal feet of pavement replaced	4,888	not tracked	not tracked
Labor hours used	5,195	4,082	4,856
<b>Patching pot holes / pavement</b>			
Number of calls to Pot Hole Hot Line	392	616	720
Tons of patch material placed	542	790	1,216
Labor hours used (temporary patches)	683	2,406	3,512
Labor hours used (regular patches)	1,821	3,320	3,153
Number of potholes/locations patched	5,716	15,070	18,449
Percent of potholes filled in 24 hours (arterials)		83%	44%
Percent of potholes filled in 48 hours (non-arterials)		56%	42%
<b>Curb replacement</b>			
Lineal feet of curb replaced	2,049	3,265	1,769
Labor hours used	1,601	3,480	1,636
<b>Street Sweeping</b>			
Lane miles completed	8,752	9,112	7,013
Labor hours used	5,051	4,136	1,138
Cubic yards collected	10,774	9,894	10,693
<b>Crack sealing</b>			
Pounds of material used (by street division)	31,050	14,070	5,460
Lineal feet of cracks sealed (by street division)	93,150	42,398	16,380
Labor hours used (by street division)	2,164	1,216	302
Pounds of material used (by contractor)	386,580	269,000	200,000
Lineal feet of cracks sealed (by contractor)		549,120	557,040
Lane miles crack sealed (contract)	158	104	106
<b>Guardrail replacment</b>			
Feet of guardrail replaced	100	73	50
Labor hours	76	144	44
<b>Mowing activities</b>			
Right of way and drainage area acres	2,189	3,120	2,470
Labor hours used (ROW and drainage)	417	624	494
Levee acres mowed	16,720	17,479	8,910
Labor hours used (levee)	1,520	1,589	810
Aiport acres mowed	5,789	6,462	528
Labor hours used (airport)	1,124	1,175	96
<b>Snow removal</b>			
Number of storms (winter season,e.g., 07-08)	9	6	17
Inches of snowfall for season			33
Number of storms requiring 24-hour operations	4	5	9
Number of storms requiring plow operations	1	4	5
Snow hauled from central business district	0	0	1
Labor hours used	4,386	7,813	10,421
Tons of material spread	3,487	4,815	8,551

Stormwater Infrastructure Maintenance: Routine maintenance of the existing stormwater network includes the cleaning of ditches, storm sewer pipes, inlet throats and catch basins. Stormwater operations crews are managed under the Street Maintenance Division. The following summarizes the work completed in 2008:

	<b>2007</b>	<b>2008</b>
Ditches cleaned (feet)	7,027	2,045
Stormsewer pipe installed (feet)	1,636	945
Curb inlets (throat) cleaned	1,193	1,568
Curb inlets rebuilt	14	18
Stormsewer pipe rodded / cleaned (feet)	1,782	2,102
Catch basins checked	695	201
Catch basins vacuumed	112	97