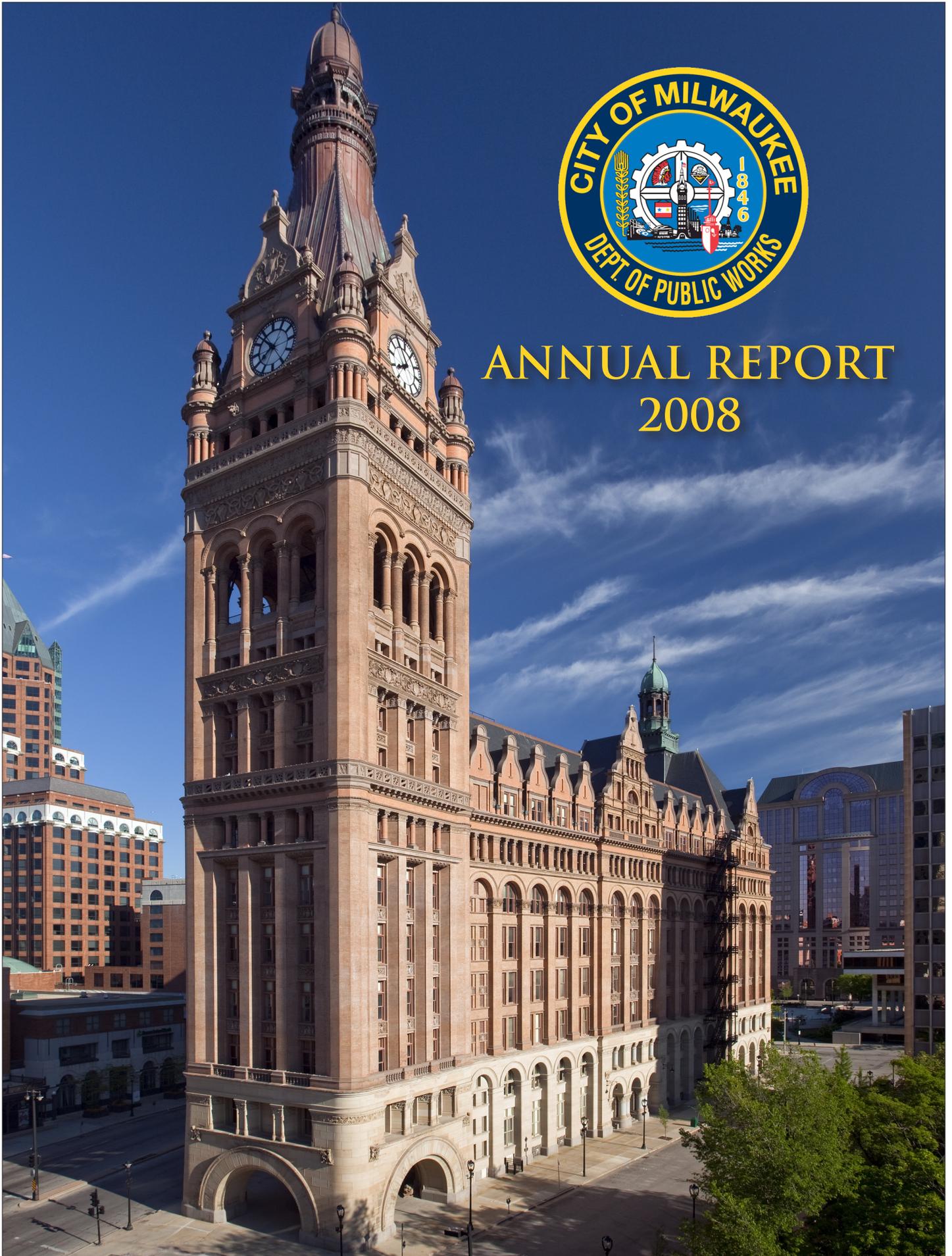




# ANNUAL REPORT 2008



2008  
MILWAUKEE  
COMMON  
COUNCIL

President  
**Willie L. Hines, Jr.**  
District 15

**Ashanti Hamilton**  
District 1

**Joe Davis, Sr.**  
District 2

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**James A. Bohl, Jr.**  
District 5

**Milele Coggs**  
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**Robert G. Donovan**  
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**Robert W. Puente**  
District 9

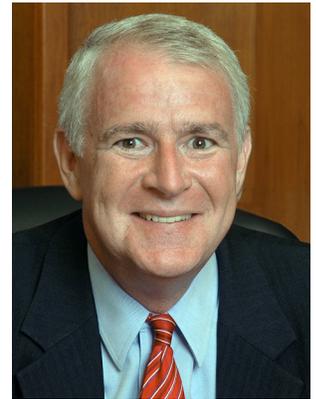
**Michael J. Murphy**  
District 10

**Joseph A. Dudzik**  
District 11

**James N. Witkowiak**  
District 12

**Terry L. Witkowski**  
District 13

**Tony Zielinski**  
District 14



**Mayor Tom Barrett**

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MISSION

*To promote the health, safety, mobility, and quality-of-life for all City of Milwaukee residents and visitors by providing:*

- Safe, attractive, and efficient surface infrastructure systems;
- Solid waste collection, disposal, recycling, and waste reduction;
- Safe, aesthetically pleasing, and sufficient drinking water;
- Storm water and waste water conveyance; and,
- Support services and facilities for the Department of Public Works (DPW) and other city departments

INITIATIVES FOR 2008

- Provide assistance to special events, including the Harley-Davidson 105th Anniversary Celebration and the filming of “Public Enemies.”
- Complete the City Hall Restoration Project.
- Implement an Eco-Driving Program designed to educate Fleet drivers about methods of operating their vehicles more efficiently.
- Continue to protect the City’s 120-mile boulevard system by increasing tree canopy and adding large landscaped “signature” beds.
- Launch Recycle For Good, a citywide recycling education campaign.
- Continue to expand the City’s commitment to the bike population by adding bike lanes and routes and installing additional bike racks.
- Increase the Milwaukee Water Works’ use of technology and automation to improve efficiency in its operations.

# MESSAGE FROM THE COMMISSIONER: YEAR IN REVIEW

2008 was a busy year for the Department of Public Works and the City of Milwaukee as a whole. Mayor Tom Barrett was reelected to a second term, the Brewers made the playoffs for the first time in 26 years, Harley-Davidson celebrated its 105th anniversary with a weeklong celebration and the opening of its museum, and the Marquette Interchange Reconstruction Project wrapped up on time and under budget, much to the delight of Milwaukee-area motorists.



**Jeffrey J. Mantes**

Perhaps the most exciting event for the Department of Public Works was the completion of the City Hall Restoration Project. During the three-year project, 1,900 windows were restored, 240,000 pounds of copper were used, and the south tower was completely rebuilt. I could not be more proud of everyone who took part in the restoration, and I am especially pleased that the City met or exceeded requirements for city resident and emerging business enterprise participation on the project.

The **ADMINISTRATIVE SERVICES DIVISION** had its hands full in 2008 with a flurry of special events. In addition to the Harley-Davidson 105th anniversary activities and Brewers playoff festivities, the Special Event Permit Office welcomed Johnny Depp and Christian Bale to Milwaukee for the filming of “Public Enemies.” DPW assisted the cast and crew of by blocking off streets and removing parking meters.

## HIGHLIGHTS:

- City Hall Restoration Project completed
- Kilbourn Reservoir Park opened
- Recycle For Good campaign launched
- Marquette Interchange reconstruction project completed
- Harley-Davidson 105th Anniversary celebration held

of America, the Milwaukee Downtown Business Improvement District, the Milwaukee County Historical Society and Mayor Tom Barrett.

In September, Milwaukee implemented the first eco-driving program in the nation. The program teaches DPW Fleet drivers techniques for operating their vehicles more efficiently.

The **ENVIRONMENTAL SERVICES DIVISION** continued to be at the forefront of green technology and initiatives.

In September, the division launched a new recycling campaign. “Recycle For Good” uses print advertisements, radio commercials, and partnerships with local community groups to raise recycling awareness in Milwaukee.

The division also continued its award-winning tradition. For the fifth consecutive year, the City of Milwaukee received \$5,000 for collecting the most cans in the nationwide Cans for Cash Recycling Challenge. The City of Milwaukee was also named a “Tree City USA” by the Arbor Day Foundation for the 29th year in a row.

**INFRASTRUCTURE SERVICES** remained committed to being a “bicycle-friendly city” by continuing to install bike paths on City streets. Most prominently, the division designated 6-foot bike lanes on each side of the Kilbourn Avenue Bridge that were treated with slip-resistant coating. The bridge is scheduled to open in early 2009.

The division also began construction on the Humboldt Avenue Bridge over the Milwaukee River and Riverboat Road. The new bridge, slated to open at the end of 2009, will feature wider sidewalks with scenic outlooks over the river.

**DID YOU KNOW?...**  
240,000 pounds of copper were used during the City Hall Restoration Project.

**WATER WORKS** welcomed the opening of the Kilbourn Reservoir Park, bidding farewell to the 135-year-old underground drinking water reservoir the park previously held. The 35-acre park now hosts pathways, benches and a stunning view of the Milwaukee skyline.

Water Works was also honored for a green initiative it implemented. Operations and Maintenance staff at the Linnwood Water Treatment Plant received the Opflow First Place “Gimmicks & Gadgets” Award from the American Water Works Association for inventing and sharing with other utilities a tank-rinsing method that resolved a safety concern and saves approximately 424,000 gallons of treated water per year.

As in previous years, 2008 marked the beginning, end, and continuation of a long line of projects and honors in which the Department of Public Works has taken part. This is only a small sampling of accomplishments made by a department that I am extremely proud of and one that will continue to work on behalf of the citizens and businesses of Milwaukee. Thanks to the staff for your continued hard work and dedication.

A handwritten signature in black ink that reads "Jeffrey J. Mantes".

Jeffrey J. Mantes, Commissioner,  
City of Milwaukee – Department of Public Works

# DEPARTMENT ORGANIZATION



## ADMINISTRATIVE SERVICES

Commissioner of Public Works.....Jeffrey J. Mantes  
 Administrative Services Director.....Dorinda Floyd  
 Finance and Planning Manager.....LaQuisha Schroeder  
 Network Planning Manager.....Gerard Froh  
 Parking Enforcement Manager.....Thomas Sanders  
 Parking Financial Manager.....Cindy Angelos

### Office of the Commissioner:

Director of Operations.....James P. Purko  
 Coordination Manager.....Ghassan Korban  
 Personnel Administrator.....Dan Thomas  
 Permits and Communications Manager.....Cecilia Gilbert

The **Administrative Services Division** is responsible for finance and planning, the DPW Call Center, special event permits, parking-related activities and contract administration.



## WATER WORKS

Superintendent.....Carrie Lewis  
 Administration & Projects Manager..Laura Daniels

The **Milwaukee Water Works** provides safe, abundant drinking water to the City of Milwaukee and 16 communities in Southeastern Wisconsin.



## INFRASTRUCTURE SERVICES

City Engineer.....Jeffrey Polenske  
 Administration & Transportation Design Manager..Clark Wantoch  
 Engineer-In-Charge, Environmental Section.....Martin Aquino  
 Infrastructures Operations Manager.....Dale Mejaki

The **Infrastructure Services Division** is responsible for the design, construction, operation and maintenance of all streets, alleys, bridges, public-way lighting, traffic control signs and signals, sewers, and underground conduit systems; and overseeing the construction of water facilities.

## OPERATIONS DIVISION

Operations Division Director.....James P. Purko  
 Buildings & Fleet Superintendent.....Venu J. Gupta  
 Environmental Services Superintendent.....Preston Cole

The **Operations Division** is responsible for solid waste collection and disposal, recycling and waste reduction, trees and landscaping, fleet maintenance and dispatch, support services to City facilities and ice control.



## ENVIRONMENTAL SERVICES

Environmental Services Superintendent.....Preston D. Cole  
 Sanitation Services Manager.....Wanda Booker  
 Forestry Services Manager.....David Sivyer

**Environmental Services** promotes clean and healthy neighborhoods by reducing waste, encouraging recycling, maintaining safe roadways during snow and ice and caring for a healthy urban forest.



## BUILDINGS & FLEET

Buildings & Fleet Superintendent....Venu J. Gupta  
 Facilities Manager.....Gary Kulwicki  
 Fleet Manager.....Fred Gunther

**Buildings & Fleet** is a composite of licensed professionals, skilled trades, certified mechanics and technicians, experienced fleet drivers, communication operations, dispatchers and experienced office staff.

# DEPARTMENT OF PUBLIC WORKS BUDGET SUMMARY

	<b>2006 Actual Expenditures</b>	<b>2007 Adopted Budget</b>	<b>2008 Adopted Budget</b>	<b>Change 2008 Adopted vs. 2007 Adopted</b>
<b>Personnel*</b>				
FTEs - Operations & Maintenance	1,590.41	1,654.0	1,607.0	-46.96
FTEs - Other	394.42	447.0	449.5	2.52
Total Positions Authorized	3,105	3,068	3,009	-59
<b>Expenditures - General City Purposes</b>				
Administrative Services	\$4,905,041	\$4,827,996	\$4,774,419	-\$53,577
Infrastructure	24,273,837	23,848,511	24,938,934	1,090,423
Operations	80,228,143	80,765,615	81,110,095	344,480
<b>Subtotal - General City Purposes</b>	<b>\$109,407,021</b>	<b>\$109,442,122</b>	<b>\$110,823,448</b>	<b>\$1,381,326</b>
<b>Milwaukee Water Works</b>				
Operating Budget	\$60,482,646	\$67,728,842	\$67,709,700	-\$19,142
Capital Budget	13,171,894	25,140,500	36,769,000	11,628,500
<b>Total Milwaukee Water Works**</b>	<b>\$73,654,540</b>	<b>\$92,869,342</b>	<b>\$104,478,700</b>	<b>\$11,609,358</b>
<b>Parking Budget</b>				
Operating & Maintenance Budget	\$24,257,234	\$26,059,606	\$26,040,922	-\$18,684
Capital Budget	1,067,947	595,000	2,700,000	2,105,000
Addition to Parking Reserves	0	0	0	0
Transfer to General Fund	15,210,000	15,800,000	17,000,000	1,200,000
Capital Improvements to be Financed				0
From Permanent Improvement				0
Reserve Fund - Parking				0
<b>Total Parking Budget</b>	<b>\$40,535,181</b>	<b>\$47,454,606</b>	<b>\$50,740,922</b>	<b>\$3,286,316</b>
<b>Sewer Maintenance Fund</b>				
Operating & Maintenance Budget	\$31,134,316	\$39,387,171	\$40,162,619	\$775,448
Capital Improvements	15,054,609	24,500,000	29,950,000	5,450,000
<b>Total Sewer Fund Budget</b>	<b>\$46,188,925</b>	<b>\$63,887,171</b>	<b>\$70,112,619</b>	<b>\$6,225,448</b>
<b>Grand Total - Dept. of Public Works</b>	<b>\$269,785,667</b>	<b>\$313,653,241</b>	<b>\$336,155,689</b>	<b>\$22,502,448</b>

\*Personnel totals reflect Operating Divisions, Water Works, Parking Fund and Sewer Maintenance Fund

\*\*Does not include retained earnings



# ADMINISTRATIVE SERVICES

Zeidler Municipal Building  
841 North Broadway,  
Room 501  
(414) 286-2400

**Dorinda Floyd,**  
*Administrative Services  
Director*

**LaQuisha Schroeder,**  
*Finance and Planning  
Manager*

**Gerard Froh,** *Network  
Planning Manager*

**Thomas Sanders,** *Parking  
Enforcement Manager*

**Cindy Angelos,** *Parking  
Financial Manager*

**Office of the Commissioner:**  
**James P. Purko,** *Director of  
Operations*

**Ghassan Korban,**  
*Coordination Manager*

**Dan Thomas,** *Personnel  
Administrator*

**Cecilia Gilbert,** *Permits and  
Communications Manager*

## WHO WE ARE

The Administrative Services Division serves as department liaison to elected officials and the public and coordinates major transportation, environmental and economic development-related projects. In addition, this division is responsible for coordinating the department's operating and capital budgets, as well as enterprise fund budgets, finance and planning, payroll, personnel, employee safety and contract management.

The division also manages all communication responsibilities, including media relations for the department, special event permits, DPW Call Center, 286-CITY and all City data and voice telecommunications infrastructure.

The division manages all parking-related activities, including parking enforcement, parking information desk, city tow lot, towing contracts, citation processing contracts, parking structures and lots, parking permits and parking meters.

## FINANCE AND PLANNING

In the 2008 budget, the department's operating budget (excluding enterprise funds) totaled \$110.8 million.

During 2008, DPW faced significant budget challenges due to snow and ice operations. The 2008 budget included \$4.9 million for snow and ice control. However, faced with 105.7 inches of snow, 2008 snow and ice expenditures totaled \$15.8 million. As a result, the department required funding from the City's Contingent Fund to pay for budget shortfalls elsewhere.

## DPW CALL CENTER/286-CITY

The DPW Call Center began operations in November 1998. It is a "one-stop-shop" for citizens requesting services or seeking information either over the telephone or through the Internet. By calling a central number, citizens may talk to customer service representatives who process requests for services, provide information and re-

spond to citizen complaints related to sanitation, forestry, street maintenance, street lighting, sewer maintenance, street signs and traffic signals.

In 2006, the City implemented 286-CITY, a single access telephone number for all City services and information. Citizens who call 286-CITY with DPW-related requests are transferred to the Call Center.

In 2008, the Call Center received 229,097 calls and requests for services, up 19 percent from the year before. Of the total calls received, 133,308 were service requests, up 10 percent from 2007.

The Call Center also processes service requests online at [www.dpwworks.mpw.net](http://www.dpwworks.mpw.net).

## PERSONNEL/SAFETY

In 2008, the Personnel/Safety sections continued work on various initiatives.

- There is now a department-wide absence database. This database is used to provide managers throughout the department access to information regarding all

## MILWAUKEE CELEBRATES HARLEY'S 105TH ANNIVERSARY

In honor of the opening of the Harley-Davidson Museum in the Menomonee Valley and the company's 105th anniversary, Milwaukee welcomed bikers from across the country for the Harley-Davidson

105th Anniversary Celebration in August 2008.

Administrative Services assisted with the event by providing permits for the motorcycle parade and various rally activities around the city.



The Harley-Davidson Museum opened in July 2008.



The parade took place over Labor Day weekend.

types of absences.

- Work continued on automating the processing of injury data. This will result in more timely processing of claims.

- The sections have agreed with various unions on changes to the Limited Duty Program. These changes will permit the placement of injured employees in assignments throughout the department. This expansion of placement opportunities will, in many cases, permit injured employees to return to work sooner.

### SPECIAL EVENT PERMIT OFFICE

The Special Event Permit Office processed 1,151 permits in 2008. The permits were for a myriad of events in the public right-of-way, including block parties, festivals, walk/runs, banners, parades and special event parking.

One of the biggest events for Public Works staff was the Harley-Davidson 105th Anniversary. It was celebrated with a three-hour parade that started at Miller Park, traveled down Wisconsin Avenue and ended at Summerfest grounds.

Other activities included several block parties in various parts of the City, including King Drive, Locust Street, Water Street, Milwaukee Street, and several events at the new Harley-Davidson Museum.

The museum open on July 12 and included the President and CEO of Harley-Davidson, Gov. Jim Doyle, Milwaukee County Executive Scott Walker and Milwaukee Mayor Tom Barrett.

Several permits are issued each year to raise awareness and money for various diseases.

Last year, permits were issued for March of Dimes, Strides Against Breast Cancer, MS Walk, Strides for Lupus, Make-A-Wish, Dylan's Run for Autism, Aids Walk Wisconsin, the Alzheimer's Association Memory Walk, and the Sprint for Spina Bifida.

Two of the largest events, the Susan G. Komen Race for the Cure and Al's Run for Children's Hospital, continued to attract record numbers of participants.

The Special Event Permit Office also issued numerous permits for the film "Public Enemies," which starred actor Johnny Depp and was directed by Michael Mann.

Public Works staff removed parking meters, traffic lights and signs last summer to make the City reflective of the 1930s-era drama.



Photo Credit: Milwaukee County Historical Society

Johnny Depp visited Milwaukee last summer to film "Public Enemies." The Special Event Permit Office issued numerous permits for the film.

### PARKING FUND

The Parking Fund is an enterprise fund administered by the Department of Public Works.

It receives revenues from various parking activities, including parking enforcement, which finances the City's on- and off-street parking operations.

The fund's activities include operating four City-owned parking structures that provide 4,454 parking spaces. The City leases a fifth structure to a private company. In addition, DPW manages approximately 50 City-owned surface parking lots.

### PARKING METERS:

A staff of four manages more than 6,200 parking meters citywide.

The staff is responsible for maintaining, hooding, installing and removing meters as needed.

In 2008, more than \$3.6 million was generated in meter revenue.

### NIGHT PARKING PERMITS:

DPW also administers the overnight parking permit program.

Permits are sold at all Police District Stations, three Violations Bureau locations and the City Tow Lot.

In 2008, more than \$3 million was generated from the sale of quarterly and annual night parking permits.

### CITY TOW LOTS:

The City's towing program is also managed through the Parking Fund. DPW is responsible for managing the City's Tow Lot, two towing contracts and the vehicle recycling contract.

In 2008, 34,800 vehicles were towed. Of the vehicles towed, 80 percent were claimed by their owners, up 4 percent from 2007. Of the vehicles disposed, the City recycled 16 percent and sold 4 percent.

Revenue generated from towing, storage and disposal of vehicles totaled \$6.7 million in 2008.

### PARKING ENFORCEMENT:

Parking Enforcement Operations, along with the Parking Information Desk, are housed at 123 North 25th Street in the Menomonee Valley. Parking enforcement operations include 64 parking checkers.

The goal of parking enforcement is to provide the most comprehensive and consistent parking enforcement citywide. Parking checkers are deployed 24 hours a day, 7 days a week, 365 days a year and are assigned to special patrols, including abandoned vehicles, citizen complaints and Aldermanic Service Requests.

In 2008, parking checkers issued more than 880,000 parking citations, up from 825,000 citations in 2007. Citation revenues in 2008 totaled \$22.6 million.

The Parking Information Desk operates

24 hours a day, 7 days a week, 365 days a year and includes 21 communication assistants.

Parking Information Desk personnel receive parking complaints, process night parking permissions, provide general parking information and dispatch tow operators.

**PARKING CITATION PROCESSING:**

The Department of Public Works manages the processing and collection of parking citations with the help of contracted services. There are several ways citizens can pay parking citations:

- Pay-by-mail service
- Three Violations Bureau locations
- Drop boxes located in the Police District Stations and City Hall
- Calling the Violations Bureau at 344-0840 and using the Interactive Voice Response (IVR) system
- Online by accessing DPW's parking page, [www.parking.mpw.net](http://www.parking.mpw.net)
- Automated Payment Centers in police district stations
- Tow Lot

In 2008, the City awarded a contract to Professional Account Management to handle citation processing, collection, cash management and informational services.

Since 2002, the City has participated in the State Department of Revenue's Tax Refund Intercept Program, whereby state income refunds are intercepted to pay for outstanding parking citations.

Unpaid parking citation balances exceeding \$45 are registered with the Department of Revenue.

**PARKING TECHNOLOGY:**

Automated Payment Centers for quarterly and annual night parking permits are located in Police District Stations 2, 3, 4, 5, 6 and 7.

The Automated Payment Centers accept cash, check or credit/debit cards and electronically dispense the permits. The information is in both English and Spanish and the machines are accessible 24 hours a day, 7 days a week.

Parking citations can also be paid at the machines and are processed in real time.

**DID YOU KNOW?...**  
Parking checkers have PDAs installed in their vehicles so they can see which LUKE parking meter spaces are expired without leaving their vehicles.

Automated revenue control equipment is available in four City-owned parking structures. The equipment has the ability to provide for credit card payment on entrance, exit and at pay-on-foot machines.

The City continued to purchase and install multi-space electronic LUKE parking meters in 2008, with 75 installed in the central business district. The LUKE parking meter accepts coins and credit/debit cards and issues a receipt. The meters are networked, so payment can be made at any meter as long as a space number is entered.

**TECHNOLOGY SUPPORT SERVICES**

The Technology Support Services (TSS) section has responsibilities in three areas of technology for the Department of Public Works and the City: server/desktop computing, application development and city-wide telecommunications infrastructure.

**SERVER/DESKTOP COMPUTING:**

This team performs administration, support and maintenance for Public Works Active Directory using Microsoft Windows Server 2003. In addition, this team performs software and hardware installation, support and maintenance for user and desktop clients.

This team is also responsible for the deployment of group policies and software updates to all desktops and servers in order to help maintain a secure computing environment. Support is provided for applications including the department-wide e-mail systems, new client server applications for 286-CITY, work management systems, public works permits, Microstation, PeopleSoft and parking enforcement applications.

In 2008, the technology support section eliminated all Novell servers (four) and moved all users (more than 700) to a Microsoft environment.

Additionally, TSS set up a printer server to allow DPW users to select network printers from within their group without having to use the print wizard or the assistance of the IT staff to set up printers.

TSS also set up a server to update virus engines and virus DAT files on network workstations without the need for user intervention or visiting user workstations.



2008 marked the second year in a three-year project to install LUKes, electronic multi-space parking meters. Last year, 75 were installed in the Central Business District.

**APPLICATION DEVELOPMENT:**

The application development team works directly with DPW operational managers to custom-build functionality into applications to maximize the efficiency and effectiveness of DPW operations.

In 2008, contract payments were added to the Infrastructure Information Management System, an application developed in 2007.

Additional PDAs were installed in parking checkers' vehicles so they can see which LUKE parking meter spaces are expired without leaving their vehicles.

**TELECOMMUNICATION SERVICES:**

TSS provides installation, maintenance and support for a wide variety of telecommunication equipment.

Most importantly, TSS supports the network infrastructure for the Milwaukee Police, Fire and Water departments.

Besides "data" communication services, DPW also supports telecommunication services for municipal security systems, the City and Police Department telephone internode's links, radio backbone, low-speed data communications services such as the fuel system and the Water and Sewer System Control and Data Analysis Systems.

## PUBLIC WORKS COORDINATION

### MAJOR PROJECTS:

The Department of Public Works Administrative Services Division coordinated planning and construction of public improvements for several major projects during 2008.

One major accomplishment was the completion of the Harley-Davidson Museum in July. The 130,000-square-foot state-of-the-art building located at 400 Canal St. is a welcome addition to the Menomonee Valley and part of the city's continuing effort to revitalize the area.

### SPECIAL PROJECTS:

- Phase I of the **Emmber Lane River Improvement and Access Project** was completed, consisting of construction of all piles and trash barrier walls. The barrier walls were erected to prevent floating trash from collecting in the corner where the Menomonee River and Emmber Lane meet.

Phase II of the project is currently underway and will result in the completion of a Riverwalk, dock installation, boat launch pad and landscaping. This phase, slated for completion in summer 2009, will provide a much-needed access point for non-motorized boat launching.

The Menomonee Valley Partners, the Milwaukee Riverkeepers and area businesses provided much assistance throughout the planning and construction of the project.

The project is funded through a Coastal Management Grant this office received from the State of Wisconsin in 2007.

- Phase I of the **Hartung Park** development was awarded, and is slated for completion in late 2009. The project consists of transforming a six-acre parcel into recreational facilities with trails, rain gardens and play fields. The park will be the first of its kind in the City of Milwaukee Playground System.

The Hartung Park Community Association played a crucial role in the planning process in cooperation with Alderman Bohl.

The remaining 13 acres of the park will

continue to serve as a place for City forces to dispose of all excavated materials generated on a daily basis.

The Hartung Park project is funded through a Stewardship Grant this office received from the Wisconsin Department of Natural Resources in 2007.

### DID YOU KNOW?...

The BREWERY project at the site of the former Pabst Brewery features the City's most significant storm water management system.

- The Department of Public Works and Marquette University announced a joint plan to construct a **median on West Wells Street** between North 13th and 16th streets. The median is meant to increase pedestrian safety when crossing Wells Street.

Construction will begin in April 2009, with Marquette funding part of the project, including a railing, landscaping and other special amenities.

- Phase I of the **BREWERY project** at the site of the former Pabst Brewing Company continued in 2008. When finished, the 20-acre site will feature 1.3 million square feet of residential, office and retail space.

The project is committed to environmental sustainability, and features the City's most significant storm water management

system. By planting storm water trees and adding green space to rooftops, sidewalks and roadways, the project is reducing the risk of sewer overflows and basement flooding.

### DEVELOPMENT:

Construction on the following single-family home subdivisions was completed:

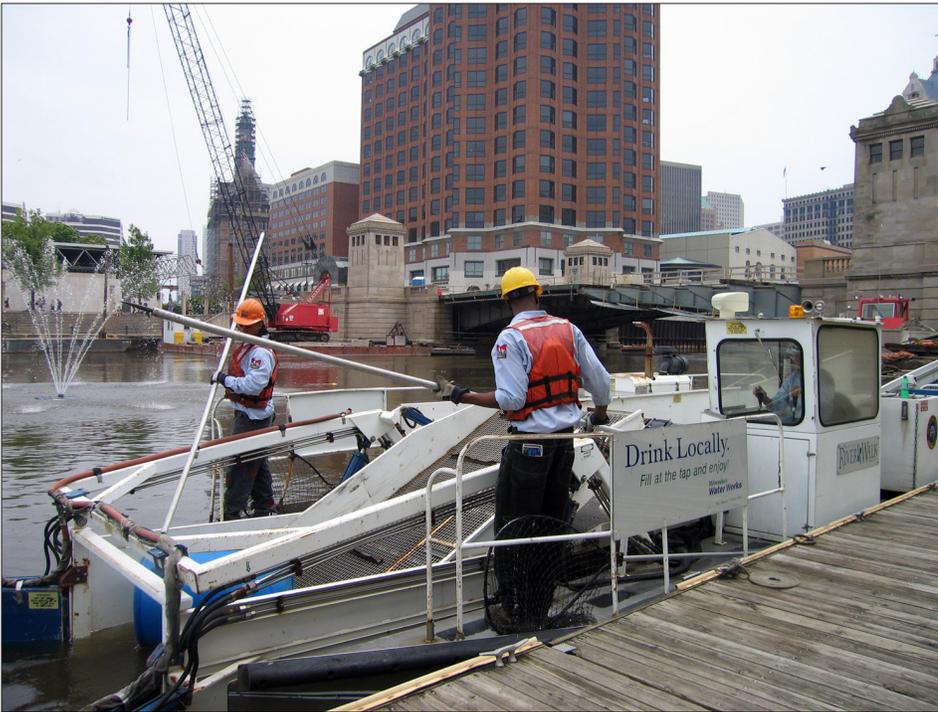
- River Ridge, North Granville Road at West Donna Drive
- River View, West Bradley Road and North 91st Street
- River Highlands, North 124th Street and Good Hope Road
- Tara Vista, Brown Deer Road and North Lauer Street
- Oak Hill, West Good Hope Road and North 91st Street

The division coordinated the design and construction of public infrastructure for these subdivisions.

Despite last year's economic slowdown, lots are being sold and construction has already begun on homes in the subdivisions. These projects will potentially add more than 200 new single-family residences to Milwaukee's Northwest side.



Trash barrier walls were erected on the Menomonee River near Emmber Lane as part of the first phase of the Emmber Lane River Improvement and Access Project. When completed, the project will reduce river litter and provide a launch pad for non-motorized boats.



The River Skimmer operation, which runs yearly along the Milwaukee and Menomonee rivers, is administered by Administrative Services. The skimmer was especially useful in cleaning up both rivers after heavy rainfall in June caused flooding and increased litter.

**RIVERWALK:**

- In addition to the routine upkeep of the Riverwalk, this office worked closely with the Riverwalk Business Improvement District No. 15 (BID #15) and the Department of City Development to begin construction on the **Americans with Disabilities project**.

Upon completion, the project will satisfy the Americans with Disabilities Act settlement with the Department of Justice of the State of Wisconsin.

The settlement required the City of Milwaukee and owners of the Riverwalk within BID #15 to construct ramps or lifts to provide wheelchair access to the Riverwalk.

Progress has been made at the following locations:

- Mason Street Plaza
- Usinger’s Riverwalk near the State Street Bridge

- The segment of the Riverwalk under I-794, roughly between St. Paul Avenue and Clybourn Street, was replenished as part of the Marquette Interchange Project. Construction was funded by the Wisconsin Department of Transportation.

- The office also administers the **River Skimmer** operation, which runs yearly along the Milwaukee and Menomonee rivers.

The skimmer played a significant role in cleaning up both rivers in the aftermath of the floods that struck the Midwest in June. Milwaukee has utilized different versions of the skimmer since the 1970s.

**CONTRACT ADMINISTRATION**

DPW contracts for all City infrastructure projects. It also contracts for several major public service functions, including solid waste recycling, public parking structure operation, vehicle towing and parking meter revenue collection.

Through its contracts, DPW leverages employment opportunities for City residents who live within the Community Development Block Grant boundaries. This initiative is formally known as the Residents Preference Program (RPP).

Under the program, at least 25 percent of all hours worked on individual city contracts must be allocated to unemployed residents in the Community Development Block Grant area.

In August 2009, as a result of new legislation, the Residents Preference Program will be expanded to include unemployed and underemployed people residing anywhere in the City of Milwaukee.

At least 40 percent of all hours worked on individual city contracts must be allocated to these residents under the new legislation.

DPW also requires that contractors use Emerging Business Enterprises (EBE) in their contracts. EBE firms, typically small firms owned by one or more individuals who are at an educational, social, economic or other disadvantage, are certified by the City and are mandated by ordinance to be involved in at least 18 percent of all work contracted by the department.

Starting in August 2009, at least 25 percent of all construction work contracted by the department must be performed by EBE firms.

The table at the bottom of the page provides statistics on city contracts and RPP and EBE utilization in 2008.

As part of its contracting activities, the department actively monitors all public works contracts for compliance with Prevailing Wage and Living Wage requirements. If underpayment to workers is discovered, the department collects makeup payments from offending contractors and distributes them to the underpaid workers.

Penalties, including debarment, can be levied.

Total contracts awarded	152
Total value of contracts awarded	\$56.4 million
Current target resident participation rate	29.4%
Current ordinance-mandated EBE rate	18%*
Current average EBE requirement rate	19.1%
Current EBE performance rate	23.6%

\*Beginning in August 2009, the mandated EBE rate will increase to 25%



# OPERATIONS DIVISION

Zeidler Municipal Building  
841 North Broadway, Room 516  
(414) 286-8333

**James P. Purko**, *Operations  
Division Director*

**Venu J. Gupta**,  
*Buildings & Fleet Superintendent*

**Preston D. Cole**,  
*Environmental Services Superintendent*

## WHO WE ARE

The Operations Division was created in 2002 by consolidating the Forestry, Sanitation and Buildings & Fleet divisions. The division is responsible for solid waste collection and disposal, recycling and waste reduction, trees and landscaping, fleet maintenance and dispatch, support services to City facilities, and snow and ice control.

## ADMINISTRATION

The Administration section coordinates, prepares and monitors the division's operating and capital budgets. A small, cross-trained administrative staff provides key support, including monitoring the facilities hotline and quickly dispatching service requests for City buildings, maintaining the City's keycard access database, responding to solid waste fee inquiries and environmental code citations and generating more than \$1 million in accounts receivable invoices annually.

This section also manages the solid waste scale system that tracks all refuse and recycling brought through the City's three transfer sites.

## BUILDINGS & FLEET SERVICES

Buildings & Fleet Services is a composite of licensed professionals, skilled trades, certified mechanics and technicians, fleet operators, communication specialists, dispatchers and experienced office staff. Buildings & Fleet serves the needs of employees, managers, agencies, departments and the public users of city facilities. The division's goal is to provide efficient and effective service to internal and external customers by supplying quality work environments and a well-maintained fleet.

Buildings & Fleet has undergone many changes over the past several years to streamline methods and processes. Our future is the vast array of talent, our employees, who on a day-to-day basis do the work and represent the front line teamwork

of our services and projects.

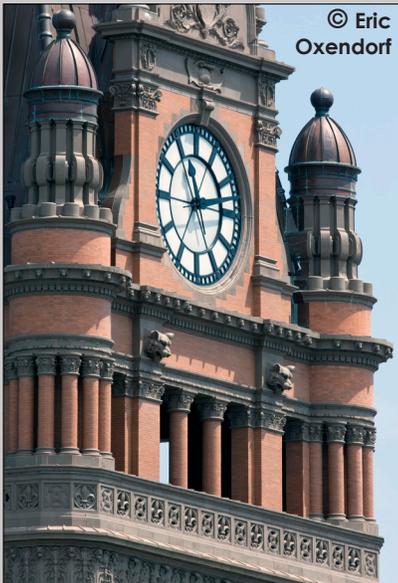
## ENVIRONMENTAL SERVICES

Environmental Services is composed of the Forestry and Sanitation sections. Forestry maintains the City's 200,000 trees and its various boulevards and playgrounds. Sanitation provides garbage and recycling collection and is responsible for keeping City streets and sidewalks accessible during the winter months.

The merged Forestry and Sanitation sections continue to explore new opportunities for improved efficiencies resulting in a more cost-effective Environmental Services. These include facilities usage, equipment, emergency management, staff cross-training and customer service.

Utilizing these opportunities ensures that the Environmental Services section continues to provide the City of Milwaukee high-quality services at the lowest possible cost. The division's goal is to make Milwaukee cleaner and greener.

## OPERATIONS DIVISION AT A GLANCE



© Eric Oxendorf

City Hall after restoration



Sanitation workers emptying garbage carts



Gateway sign garden bed



# OPERATIONS DIVISION - BUILDINGS & FLEET

Zeidler Municipal Building  
841 North Broadway, Room 602  
(414) 286-2400

**Gary Kulwicki**, *Facilities Manager*

**Fred Gunther**, *Fleet Manager*



**Venu J. Gupta**, *Buildings & Fleet Superintendent*

## WHO WE ARE

The Buildings & Fleet Services Division is a composite of licensed professionals, skilled trades, certified mechanics and technicians, experienced fleet drivers, communication operations, dispatchers and experienced office staff. The division provides core services to city departments and agencies.

## FACILITIES DEVELOPMENT & MANAGEMENT SECTION

Facilities Development & Management provides building maintenance services, design and consulting services, project management, inspections and evaluations for the repair, operations and renovation of the City's building assets.

Our staff of skilled craftsmen, technicians and professionals provides these services to City agencies and departments' offices, field headquarters, shops and storage facilities that include more than 200 build-

ings. The Facilities section is comprised of functional units that provide design, electrical, communications, information, security, custodial, carpentry/masonry, painting and recreational services. Our staff includes registered architects, professional engineers, certified master electricians and trained technicians, journeyman-skilled carpenters, bricklayers and painters. Our custodial and laborer staff is well-skilled and provides a multitude of talents in facilities management.

## INFORMATION & SECURITY SERVICES:

This unit consists of a small group of Communication Assistant III employees and management that occupy the City Hall Information Center and provide after-hours call center services. These employees also act as the central station monitoring center for DPW buildings on a 24/7 basis. The City contracts with a security provider during weekends and second and third shifts on weekdays.

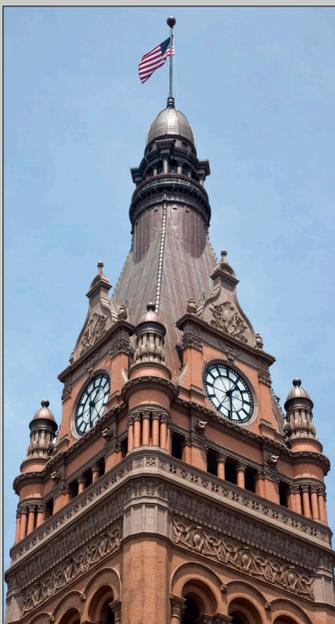
## OPERATIONS SECTION

Operations and Maintenance encompasses the decisions and actions regarding the control and upkeep of property and equipment. These are inclusive, but not limited to actions focused on scheduling, procedures, and work/systems control and optimization; and performance of routine, preventive, predictive, scheduled and unscheduled actions aimed at preventing equipment failure or decline with the goal of increasing efficiency, reliability and safety.

## COMMUNICATIONS SECTION

The Communications Unit consists of journeyman electrical mechanics and electrical workers and laborers. The unit provides and maintains the City's copper cable plant and fiber optic backbone for data and telephone transmission. Our staff is responsible for the maintenance of the City's telephone system, street lighting control

## CITY HALL HISTORIC RESTORATION COMPLETED



The restoration of City Hall was officially completed in December 2008. The City commemorated the event with a rededication ceremony, City Hall posters and a fireworks display. Buildings & Fleet oversaw the three-year, \$70 million project.

During restoration, the south tower was entirely rebuilt and the clock was restored to its original design. City Hall first opened its doors in 1896.



Photos of City Hall: © Eric Oxendorf

circuitry, various alarm systems, public address systems and the Community Safety Wide Area Network serving the Fire and Police departments' Dispatch Systems and Police call boxes. This unit is also involved in the remodeling and construction of City facilities where we provide phone and data wiring and fiber connectivity for City departments.

The Communications Unit accomplished the following in 2008:

- Continued to maintain the Avaya phone system. The phone system has switches distributed throughout City buildings to provide Avaya features to City staff at outlying facilities.

- Installed approximately 3 miles of fiber optic cable and 10 miles of copper cable telecommunication network

- Continued assisting WisDOT with the Marquette Interchange Project, which began in fall 2003 and was completed in August 2008.

Our communications staff provides service 24 hours a day, 7 days a week, 365 days a year in maintaining the citywide data and telephone system. As technologies advance in communications, we provide and maintain the latest in Category 6 cabling for Local Area Networks, as well as multimode and single-mode fiber connectivity.

## CARPENTRY/MASONRY SECTION

Our staff of highly skilled trades people, which includes Carpenters, Bricklayers and Laborers, continues to do high-quality work while maintaining costs for the City of Milwaukee and its taxpayers.

Some of the larger jobs completed in 2008 were:

- Remodeling the Police Department's old District 3 station
- Building a new reception and conference room/command center for the Health Department
- Remodeling the west side of City Hall's first floor for the Licensing Division

Our staff also services and maintains 58 children's play areas. We responded to more than 3,000 board-ups, nearly half of

which were emergency responses. We are on call 24/7 and respond to calls from the Police and Fire departments and Department of Neighborhood Services.

## MECHANICAL DESIGN SECTION

The Mechanical Design Unit's engineering professionals lead DPW in managing and/or coordinating the planning, programming, design and construction process of mechanical systems for existing and new City-owned buildings. The unit manages project scheduling, budget control, compliance with design standards, resolution of on-site construction issues and overall project quality control, in coordination with user agencies.

We also provide engineering services to enhance the condition and prolong the useful life of public facilities in an energy-efficient manner. We provide engineering design services for fire and life/safety systems, asbestos and lead paint abatement projects. We provide design services for the citywide fuel dispensing systems that meet the Environmental Protection Agency and State of Wisconsin Department of Natural Resources requirements.

The Mechanical Design Section accomplished the following in 2008:

### • City Hall Atrium Ventilation

New ventilation equipment was installed on the first and ninth floors to bring fresh air into the City Hall Atrium.

The old equipment was failing or inoperable and had been removed during previous construction projects. This led to a stagnant environment in the atrium that made gatherings uncomfortable on a warm day.

The new equipment keeps air moving in the space and provides

heated or cooled air as necessary to make the atrium a welcoming area.

### • Zeidler Municipal Building Basement Air Handling Unit Replacement

Four air handling units were replaced with three new units in the basement of the Zeidler Municipal Building. The units serve the cafe, kitchen and print shop areas of the basement. Two units that were serving the café were consolidated into one.

The new units provide better temperature control more efficiently, and meet the newest ventilation standards.

The ceiling in the café needed to be removed to accommodate this work, since one of the old units and the distribution ductwork is in the ceiling. Therefore, a new ceiling installation was coordinated with this project.

## ARCHITECTURAL DESIGN SECTION

The Architectural Design Unit's team of professionals leads the Department of Public Works' development of new buildings, additions and alterations to existing facilities for the City. The team is involved from concept through construction, creating the design, producing contract drawings and specifications, administering construction, and overseeing architectural consulting firms on projects.

The Architectural Design Unit also provides architectural technical support for the development of budgets and facility utilization studies, and assists in operations and maintenance activities.

### DID YOU KNOW?...

Ventilation equipment was installed in 2008 to bring fresh air into the City Hall Atrium.



Three new air handling units were installed in the basement of the Zeidler Municipal Building. The units provide better temperature control more efficiently and meet the newest ventilation standards.

The architectural team works collaboratively with clients to meet their goals and needs. By being proactive and cost-conscious in developing design solutions, this team creates functional and efficient workplaces. Better working environments are provided with the installation of energy-efficient building operating systems and life/safety building systems.

This unit's biggest accomplishment in 2008 was the completion of the **City Hall Restoration Project**.

#### CITY HALL RESTORATION PROJECT:

City Hall's Exterior Restoration Project was completed in 2008.

Work in 2008 included the following:

- Restoration of ornate terra cotta and copper features
- Replacement of the slate roof shingles and the copper spire roof
- Brick and sandstone repairs and tuck pointing
- Window repair/replacement
- The installation of four new clocks faces of white translucent glass to reflect the original design of the clock

On December 18, 2008, following the removal of the scaffolding that had covered the building for more than three years, the City of Milwaukee celebrated the completion of this project with a rededication ceremony and a fireworks display.

The goals of this project were realized in having achieved a safe project, completing the project on time and under budget, meet-



Construction on Phase I of Hartung Park began in late 2008. The project consists of transforming a six-acre parcel into recreational facilities with trails, rain gardens and play fields. The park will be the first of its kind in the City of Milwaukee Playground System.

ing or exceeding the City's diversity goals, and in having attained a world-class quality restoration project.

In 2005, Milwaukee's City Hall was designated as a National Historic Landmark. Since its completion, Milwaukee's City Hall Restoration Project has received six awards in recognition of outstanding achievement in historic building restoration.

The project team included the Engberg Anderson Architects consulting team and the general contracting company of JP Cullen & Sons, overseen by Buildings & Fleet staff with support from Concord/Tharps for accounting services and Prism Technical Management & Marketing Services for monitoring the City's diversity requirements.

#### SPECIAL ELECTRICAL SERVICES

The Special Electrical Services unit consists of skilled Journeyman and Master Electricians. We provide a variety of electrical services for all City-owned facilities, including police district stations, fire houses, parking garages, forestry and sanitation yards, and the Port of Milwaukee.

In 2008, Special Electrical Services undertook and completed construction projects

ranging from small to large-scale remodeling projects.

The Unit worked on several energy initiative projects involving design and installation of energy efficient lighting and motion sensors. These projects required coordination between WE Energies and Focus on Energy to obtain design and procurement credits.

Capitol Improvement Projects completed were:

- Central Repair Garage Lighting and Generator Project
- Emergency Generator Systems for several firehouses
- New Electrical Service(s) at the Port of Milwaukee

We are actively upgrading the City Hall Substation with new electrical equipment. This substation will serve as the foundation for distributing electrical power throughout the structure in the future.

#### RECREATIONAL FACILITIES DESIGN

The Recreational Facilities Unit provides the City of Milwaukee with neighborhood green spaces in which residents, both young and old, can enjoy activity and relaxation.

The Recreational Facilities Unit is responsible for operating, maintaining and reconstructing 48 active areas and 11 passive areas. The unit is also responsible for performing major reconstructions on 37 Milwaukee Public Schools Play Fields.

The reconstructions are dictated by the age of the facility, safety, demographic and neighborhood needs.

In 2008, construction began on Phase I of Hartung Park, a six-acre parcel that will feature trails, rain gardens and play fields



Special Electrical Services is upgrading the City Hall Substation with new electrical equipment. When completed, the substation will serve as the foundation for distributing electrical power throughout the building.

## FLEET SERVICES

Fleet Services consists of two sections, Operations and Repairs.

Fleet Operations schedules approximately 400 operators, support people, laborers and appropriate equipment on a daily basis for Environmental Services, Street and Sewer maintenance. Operations also provides driver training and investigates vehicle accidents.

Fleet Repairs manages and maintains more than 3,500 pieces of equipment and 1,000 related major components for the City of Milwaukee fleet, including more than 750 vehicles for the Milwaukee Police Department, as well as equipment for 24 other work groups.

Fleet Services provides fuel at sites throughout the City. Fleet Services repairs and maintains equipment at five locations, on two shifts.

### 2008 ACCOMPLISHMENTS:

#### • Eco-Driving Training

Fleet Services, in cooperation with MATC and Wisconsin Clean Cities, developed and delivered Eco-Driving Training to 16 drivers.

The pilot program was designed to improve fuel economy, which, in turn, will also reduce maintenance costs and increase safety.

The program included classroom instruction, behind-the-wheel training, pre- and post-testing and a Fleet Training Manual for ongoing use.

The preliminary results showed an average improvement of more than 10 percent in fuel economy.

Fleet Services' Eco-Driving Training program is the first of its kind in the United States since the Department of Energy's Conservation Awareness Training program in 1976.



This is an example of a Chevrolet Uplander used by Milwaukee Water Works. In addition to being capable of using either E-85 fuel or regular unleaded, these trucks replaced vehicles that were bigger, heavier, and used more fuel per mile. By switching to the Uplander, Water Works and Fleet Services have moved toward a more efficient vehicle fleet.

#### • Central Repair Garage Upgrades

Phase II of major upgrades to the Central Repair Garage continued in 2008.

Several more upgrades are planned, including in-ground hoist replacements, a new compressed air system, a new lubrication/fluids distribution system, a new backup generator and uninterrupted power system (UPS), more efficient shop lighting and brighter interior paint.

#### SUSTAINABILITY EFFORTS:

In addition to the Eco-Driving efforts described above, Fleet Services continues efforts to reduce fuel consumption with the following programs:

- Diesel truck programming, which is designed to eliminate or reduce unnecessary idle time
- Use of energy-saving Light Emitting

Diodes (LEDs) on vehicles

- Increased use of bio-diesel, which, in 2008, replaced more than 175,000 gallons of petroleum-based motor fuel with fuel derived from soybean oil

Waste stream reduction is accomplished through:

- Utilizing used motor oil for heat in two Fleet facilities
- Recycling of used automotive batteries, wooden pallets, catalytic converters, anti-freeze and scrap metal

Fleet Services continues to look at various ways to reduce oil dependence, reduce emissions, or both. In 2008, the following environmentally friendly vehicles were purchased:

- Hybrid SUVs
- Flex-fuel vehicles
- Small vans that can use either conventional unleaded gasoline or E-85 fuel when available

E-85 is made of 15 percent petroleum-derived fuel and 85 percent ethanol, generally made from corn or other agricultural products.

Many of the vehicles used by Fleet Services and other divisions are shown and described on the following page.

### FLEET SERVICES BY THE NUMBERS

Vehicles and equipment serviced	4,198
Work orders completed by Fleet Services repair staff	33,486
Volume of activity for parts department	\$5,339,872
Field service calls	9,559 repair 3,601 tire
Gallons of fuel used	1,785,746



**Crew Cab Dump Truck:** This small dump truck can seat five passengers, compared to two for a normal dump truck. It is, therefore, used to transport more people to a job site.



**Skid-Steer Loader:** Sanitation uses this to pick up bulky materials. The front grapple clamps down on items and transports them to a packer.



**Front-Loading Refuse Truck:** This truck is used to collect refuse in larger containers primarily found at schools, apartments, and other locations where cart collection is less practical.



**New Design Street Sweeper:** This updated design allows for improved operator visibility and comfort.



**Dump Truck set up for plowing and salting:** This truck is prepared for snow fighting, with a salt spreader, front-mounted plow and under-chassis plow.



**Small Dump Truck with Integral Tool Boxes:** The special dump body on this truck has tool boxes built right in behind the cab.



**Backhoe-Loader:** This machine is used by Water Works to uncover pipes under streets or other locations. It is equipped with a large hammer to break up pavement.



**Aerial Lift for Traffic Control Section:** This lift truck is maneuverable in city traffic and allows crews to park directly underneath their work.



# OPERATIONS DIVISION - ENVIRONMENTAL SERVICES

Zeidler Municipal Building  
841 North Broadway, Room 619  
(414) 286-2400

**Preston Cole**, *Environmental Services Superintendent*

**Wanda Booker**,  
*Sanitation Services Manager*



**David Sivyer**,  
*Forestry Services Manager*

## WHO WE ARE

Environmental Services consists of the Forestry and Sanitation sections. Together, both sections foster community and provide ecological benefits through clean neighborhoods and a vibrant urban forest. Well-maintained neighborhoods with healthy street trees and boulevards add quality of life, contribute to safe neighborhoods, reduce storm water runoff, provide shade and conserve resources.

The "Clean & Green" mission of Environmental Services promotes neighborhood cleanliness, reduces waste, encourages recycling, maintains safe roadways during snow and ice, and manages and cares for a growing urban forest.

## SANITATION

2008 was a year of weather-related records for Environmental Services.

The division responded to Milwaukee's second-snowiest year on record, with 105.7 inches of snow, by keeping the City open for business and streets clear of snow and ice.

Despite intense pressure on resources, the City maintained a supply of road salt to manage snow and ice operations.

Following a record-breaking winter, Milwaukee experienced heavy spring flooding.

Environmental Services responded by removing more than 1,000 tons of debris as residents cleared out and cleaned up in the aftermath of June floods.

## RESIDENTIAL GARBAGE COLLECTION:

In 2008, Environmental Services collected 184,600 tons of residential garbage and 23,070 tons of recyclables.

Environmental Services also collected and composted 31,950 tons of 'green' waste, including brush, leaves and yard waste. Composting reduces the amount of solid waste sent to landfills.

The City provides curbside brush collection of four cubic yards or less from March through November.

Leaves are collected from October 1 through November 15. Grass and other yard waste must be taken to one the City's two Self-Help Centers, located at 6660 N. Industrial Road and 3879 W. Lincoln Ave.

## MILWAUKEE HIT WITH 105.7 INCHES OF SNOW

2008 was Milwaukee's second-snowiest winter on record. A tremendous department-wide effort kept the City running, especially on the night of February 7, when the heaviest snow fell.

In total, snow cleanup required nine full plowings, 63 ice control operations and 93,389 tons of salt. While the department was budgeted \$4.9 million for snow control, expenditures neared \$15.8 million.



## SNOW & ICE CONTROL:

Environmental Services conducts snow and ice operations to clear City roadways during winter storms. In 2008, the City was hit with 105.7 inches of snow, the second-snowiest year on record, requiring nine full plowings, 63 ice control operations and 93,389 tons of salt.

## CODE ENFORCEMENT:

Environmental Services is responsible for abatement of nuisance clean-ups, tall grass and noxious weeds, and snow and ice removal on both City-owned vacant lots and private property.

The division contracted out the clean-up of City-owned vacant lots in 2008, dramatically improving the process and resulting in an overall cleaner city.

Nuisance clean-ups averaged a three-day response time following a Department of Neighborhood Services abatement order.

Grass cutting on City-owned vacant lots is maintained on a minimum 14-day schedule during the growing season, with lots cut twice monthly May through July and monthly August through September.

In 2008, the following code enforcement violations were issued:

- Noxious Weeds – 7,862 properties inspected
- Encroachments – 366 notices issued
- Sidewalk Snow/Ice – 5,740 properties inspected

## PROJECT CLEAN & GREEN:

Project Clean & Green, the annual spring clean-up program to improve the condition and appearance of Milwaukee neighborhoods, offers residents the opportunity to clean out their homes and garages and includes residential bulky collections, neighborhood clean-ups and promotes greening efforts.

Project Clean & Green results included:

- 1,382 tons of refuse
- 4,306 brush piles
- 1,266 tires
- 295 bulky piles
- 5,388 furniture piles
- 2,234 street/alley yards swept
- 459 trees planted on private property

## 'RECYCLE FOR GOOD' CAMPAIGN:

After months of research and development, the Recycle For Good campaign was unveiled to the public on September 30, 2008. The campaign aims to increase recycling throughout the city and increase collection tonnage by 15 percent.

Highlights include a new logo, larger-than-life recycling truck ads, print ads, radio commercials, and partnerships with community groups to conduct neighborhood recycling campaigns, especially in areas with low recycling participation.

As part of the new campaign, a recycling website, MilwaukeeRecycles.com, was launched to help residents get recycling information quickly and easily.

## ELECTRONIC SCRAP COLLECTION:

This free collection event was made possible by the U.S. EPA's 2008 Great Lakes Earth Day Challenge. Milwaukee residents dropped off 91,369 pounds of electronics to be responsibly recycled or refurbished.

The collection event accepted televisions, computers, printers, fax machines and computer accessories to prevent the

## ENVIRONMENTAL SERVICES LAUNCHES 'RECYCLE FOR GOOD' CAMPAIGN

Environmental Services began a new chapter in recycling education with the launch of its Recycle For Good campaign in September 2008. The campaign seeks to increase recycling efforts in the

City of Milwaukee through educational materials, print advertisements, advertisements on recycling trucks, radio commercials and partnerships with community groups.



Milwaukee students receive Recycle For Good promotional materials at the campaign's launch event. Mayor Tom Barrett, Alderman Nik Kovac, DPW's Recycling Specialist Rick Meyers and other local leaders attended the kickoff event.



Promotional materials, clockwise from top left, include: Recycle For Good logo, recycling truck and print ads, new MilwaukeeRecycles.com website, DPW fall mailer and a recycling information magnet.

improper disposal of potentially hazardous materials into landfills. E-Scrap is the fastest-growing segment of the solid waste stream and poses a threat to environmental and human health due to harmful lead and mercury that can leach into ground water if thrown into the trash and landfilled.

Environmental Services was recognized by the U.S. EPA with an Earth Day 2008 award for successful participation in the challenge.

#### RECYCLING WITH A PERSONAL TOUCH:

As part of the EPA Resource Conservation Challenge, the City of Milwaukee conducted a study to measure the effectiveness of recycling education and outreach delivered through multiple types of personal contact in order to motivate greater recycling participation.

The study targeted low-compliance neighborhoods and utilized three different types of outreach methods: a recycling education partnership with a school, door-to-door outreach with personal contact, and recycling block captains.

Each method resulted in greater recycling participation, with the school partnership method showing greatest results.

#### FESTIVAL RECYCLING:

In 2008, more than 57,000 pounds of bottles and cans were recycled from events on the Henry Maier Festival Grounds and at other festivals serviced by DPW, including Jazz in the Park, River Rhythms, Bastille Days, River Flicks and more.

From the 11 days of Summerfest alone, a total of 20,540 pounds of plastic, or 246,480 bottles, were collected and recycled. That amount equates to more than 320 cubic yards of landfill space.

#### TWICE-PER-MONTH RECYCLING COLLECTION

2008 marked the second year of twice-per-month recycling cart collection in two routes that historically maintain the highest recycling pounds per household in the city.

The program covers roughly 7,400 households.

#### DID YOU KNOW?...

Increases in the City's urban forest represent an annual functional value of more than \$3.8 million in pollution removal, energy savings and avoided carbon emissions.



Milwaukee hosted a free electronic scrap collection in April 2008. In five hours, residents dropped off nearly 32 tons of electronics. The City's total E-Scrap collection exceeded 1 million pounds during summer 2008.

#### AWARDS AND HONORS:

##### • 2008 Award for Outstanding Achievement in Recycling Education

This honor was awarded to the City of Milwaukee in February 2008 by the Associated Recyclers of Wisconsin, an association providing statewide leadership on waste reduction and recycling.

The award is presented for excellence in environmental education related to solid waste and recycling. The City of Milwaukee received the award in recognition of extensive recycling outreach, including a door-to-door campaign, recycling contests, youth outreach and educational materials.

##### • 2008 Cans for Cash City Recycling Challenge

For the fifth year in a row, the City of Milwaukee won the national Cans for Cash Recycling Challenge contest for collecting the most aluminum cans. The contest is sponsored by the U.S. Conference of Mayors and Novelis Corporation.

In 2008, Milwaukee collected 1,750,595 pounds of aluminum, or more than 59 million cans. Standing upright, these cans would form a line 2,365 miles long.

Since entering the Cans for Cash Challenge in 2004, the City has received \$30,000 in prize money and collected more than 5.8 million pounds of aluminum cans.

#### FORESTRY

##### URBAN FOREST MANAGEMENT:

Environmental Services is responsible for the maintenance and care of the City's urban forest, which is made up of more than 200,000 street trees and 120 miles of boulevards and green spaces.

In 2008, Environmental Services pruned 36,673 trees, planted 4,214 new trees and removed 3,098 trees due to hazardous condition, disease or storm damage.

Milwaukee's urban forest heralds a 5.6 percent growth in tree canopy from 16 percent in 1996 to a current 21.6 percent tree canopy cover citywide. Environmental Services' goal is to increase tree canopy to 40 percent to maximize the benefits of the urban forest.

An ecosystem analysis performed by Environmental Services found that the tree canopy increase represents an annual functional value of more than \$3.8 million in pollution removal, energy savings and avoided carbon emissions. The urban forest is comprised of trees on both public and private property.

##### EMERALD ASH BORER:

Milwaukee stands ready to protect our valuable urban forest against Emerald Ash Borer (EAB).

With the first case of EAB detected in neighboring Ozaukee County in 2008, the presence of EAB in Wisconsin is confirmed. The City of Milwaukee has



**BEFORE:** Environmental Services installed a total of 98 signature beds in boulevards across the City in 2008, including this one on Burleigh Street.

a professional urban forestry staff that is equipped to manage this threat with an invasive species readiness plan that includes the use of:

- Hyperspectral Imagery
- Tree canopy analysis
- Preventative controls such as chemical trunk injections

Hyperspectral imagery technology is being used to produce an Ash species map that delineates the street location of ash trees on both public and private property. In this manner, Environmental Services is able to direct preventative controls and target property owners with ash trees through EAB education and outreach. The City of Milwaukee is the first to use this technology to fight Emerald Ash Borer.

**SUSTAINABLE BOULEVARDS:**

In 2008, Environmental Services implemented Phase I of Milwaukee’s Strategic Boulevard Plan.

Environmental Services installed a total of 98 signature beds that include a mix of perennials, annuals, flowering shrubs, trees and other natural elements such as stones and boulders.

Sustainable Boulevards involves restructuring the City’s 120-mile boulevard system to protect the tradition of landscaped boulevards given limited resources. The use of an automated irrigation system saves labor, and drip irrigation uses less water

than conventional sprinkler systems.

**ARBOR DAY CELEBRATION:**

The City’s 43rd annual Arbor Day Celebration was held April 25, 2008, at St. Roman Parish School, 1810 W. Bolivar Ave.

Commissioner Jeff Mantes was joined by Cheryl Sanford, Principal of St. Roman’s School, and Gloria McCutcheon from the Wisconsin Department of Natural Resources, who presented the City’s 29th Tree City USA award.

The program included songs and readings by St. Roman’s classes and concluded with a ceremonial tree planting.

**CITY/COUNTY CHRISTMAS TREE:**

The 95th annual lighting ceremony for the joint City/County Christmas Tree was

held on November 20 at Red Arrow Park.

The Christmas tree, a 45-foot Colorado blue spruce, was donated by Milwaukee resident Ms. Yolanda Alvarez of 3448 S. Iowa Street. The tree was harvested by Environmental Services on November 13.

The tree-lighting ceremony featured Mayor Tom Barrett and Milwaukee County Executive Scott Walker.

Local actor and entertainer John McGovern served as Master of Ceremonies, with performances by the Milwaukee Children’s Choir and a singing quartet from the Milwaukee Repertory Theater’s “A Christmas Carol.” Special visits from Santa and Lincoln, the My 95.7 Reindeer, completed the program.

**COMPUTERIZED STREET TREE INVENTORY:**

Environmental Services completed the fifth year of a multi-year comprehensive street tree inventory to document and classify the City’s street tree population.

To date, a total of 160,000 trees have been inventoried, representing 80 percent completion.

A completed citywide street tree inventory will serve as a valuable management tool to direct operations and as a database to quantify the benefits of the City’s urban canopy.



**AFTER:** Environmental Services’ signature beds, including this one on Layton Avenue, include perennials, annuals, flowering shrubs, trees and other natural elements such as stones and boulders.



# INFRASTRUCTURE SERVICES DIVISION

Zeidler Municipal Building  
841 North Broadway, Room 701  
(414) 286-2400

**Jeffrey Polenske, City Engineer**

**Clark Wantoch, Administration & Transportation Design Manager**

**Martin Aquino, Engineer-In-Chief Environmental Section**

**Dale Mejaki, Infrastructures Operations Manager**



## WHO WE ARE

The Infrastructure Services Division is responsible for the design, construction, operation and maintenance of all streets, alleys, bridges, public-way lighting, traffic control signs and signals, sewers, and underground conduit systems, and for overseeing the construction of water facilities.

This division also undertakes a variety of tasks related to transportation planning and is involved in almost every major private development that occurs citywide through project planning and providing services vital to the community.

## ADMINISTRATION AREA

The Administration Unit is responsible for business operations, budget coordination, computer network software and hardware administration, personnel administration, accounting and clerical functions, and the Equal Employment Opportunity administration for the Infrastructure Services

ADMINISTRATION UNIT: BY THE NUMBERS	
Capital improvement, grant & aid programs expenditures	\$59.8 million
Operations and maintenance budgets	\$61.3 million
Payrolls	\$27.1 million
Contract payment expenditures	\$39.4 million
Highway aids received	\$23.7 million
Reimbursement for maintaining and operating lift bridges on connecting highway system program	\$719,750
Connecting highways funds received	\$1.9 million

Division.

The unit coordinates accounting functions along with the Department of Public Works Administrative Services Division and the Comptroller's Office.

The accounting services provided by the unit include establishing projects, recording payments, monitoring costs and closing project budgets and expenditures for the Transportation and Environmental units in coordination with the Construction Unit.

In addition, the unit is involved in accumulating, categorizing, recording and

reporting operation and maintenance expenditures for the division.

The unit also acts as the accounting resource for tracking and monitoring projects, supports the accumulation of accounting data used in the development and measurement of project estimating and performance, and assists in the development and programming of financial reports for use by managers in the Division.

The unit's major expenditures and revenue in 2008 are included in the "Administration Unit: By the Numbers" chart above.

## MARQUETTE INTERCHANGE OPENS

Construction on the Marquette Interchange wrapped up in August 2008. Local streets that were damaged as a result of the Interchange project were also completed, including additional streetscaping on streets near the Milwaukee Intermodal Station.



During and after construction, Infrastructure crews installed new traffic signals and street lighting and provided traffic mitigation plans in an effort to keep downtown Milwaukee open for business and minimize the impacts of diverted traffic.

## COMPUTER SERVICES:

The Computer Services group of the Infrastructure Services Division accomplished the following in 2008:

- Made considerable progress in expanding the scope of the Oracle Database (ODB) in 2008.

The ODB is a set of custom applications developed in-house by DPW for use by Infrastructure Services staff in managing DPW's Capital projects. The functionality of the ODB greatly surpasses that of the division's earlier database system.

- Implemented an interface to the City's Map Milwaukee application that permits anyone with access to Map Milwaukee, including the general public, to produce a map displaying the location of projects for the next few years and to retrieve selected information directly from our database for the projects in real time.

- Developed a process in the ODB for the review of partial payments to contractors for construction activities. The process significantly reduces the amount of time required for processing the payments and enhances the documentation associated with each payment.

## TRANSPORTATION AREA

The Transportation Unit's duties include:

- Programming street and alley improvements using City, state and federal funds
- Designing public-way lighting, traffic control signals, signs and pavement markings
- Transportation planning
- Reviewing utility easements
- Coordinating public improvements in tax incremental districts
- Reviewing building permits and processing permits for street encroachments
- Locating bus passenger loading areas
- Designing handicapped access ramps
- Maintaining various City maps
- Operating a "Diggers Hotline" service
- Coordinating reviews of subdivision plats, certified survey maps, and opening and closings of public rights-of-way
- Coordinating transportation improvements with other governmental agencies and railroad companies
- Representing the City Engineer and/or the Department of Public Works on transportation issues
- Undertaking engineering studies and investigations for the Common Council and other City departments



The Marquette Interchange project, one of the biggest construction undertakings in City and state history, opened with a ribbon-cutting ceremony in August 2008. DPW assisted WisDOT with a variety of electrical and streetscaping projects on affected City streets.

## PROJECT PROGRAMMING UNIT

Administration of the City of Milwaukee's \$9.4-million capital paving budget by the Project Programming Unit resulted in approval of 47 street paving and 7 alley projects in 2008, and the award of \$6 million in contracts for local streets and alleys.

Project Programming staff appeared before the Common Council's Public Works Committee for public hearings on 75 assessable paving, new sewer and new water projects. In addition, resolutions were prepared to authorize engineering for approximately 300 assessable and non-assessable public improvement projects.

Upon completion of the work, the Unit reviews assessments and prepares and issues the associated special assessment bills to property owners affected by the work. In 2008, the unit issued 3,253 bills, resulting in \$4 million in revenue to the City.

In April 2008, the Common Council approved a \$20 Motor Vehicle Registration Fee. This fee applies to all cars and light trucks registered in the City of Milwaukee and will be collected as residents renew their license plates. This revenue will replace the assessment for the street portion of projects and will reduce the assessment for sidewalk and alley replacement.

Work continued on automating the programming, estimating and billing pro-

cesses using the Oracle Database (ODB). In addition, working with the Information Technology Management Division (ITMD) section, the paving program is now available on Map Milwaukee.

## MAJOR PROJECTS UNIT

The Major Projects Unit coordinated the completion of several Federal and State Major Arterial Street and Bridge projects at an approximate total cost of \$21 million, of which the City's portion was \$4 million. The major federal and state paving and bridge projects completed in 2008 include the following:

- West Greenfield Avenue from South 1st Street to South 16th Street
- The Hazard Elimination Safety (HES) project at West Silver Spring Drive and North Teutonia Avenue on the bridge
- The rehabilitation of North Teutonia Ave. Bridge over West Silver Spring Drive
- The rehabilitation of North Prospect Ave. Bridge over the Oak Leaf Bike Trail
- The reconstruction of the North Teutonia Avenue Bridge over the Union Pacific Railroad (just south of West Mill Road)
- South 29th Street Union Pacific Railroad Underpass between West Montana Street and West Cleveland Avenue
- West Washington Boulevard from

North 47th Street to North 60th Street

- West North Avenue from North 40th Street to West Lisbon Street

• Design is complete for the Hazard Elimination Safety project located at the intersection of North 40th Street and West Vliet Street to improve vehicular and pedestrian safety. This project was let in August 2008 and construction will start in spring 2009.

• Construction is complete on State Trunk Highway 175 Appleton Avenue from US-45 to Lilly Road, a state project within the City of Milwaukee, and on West Mill Road from US-45 to North 91st Street and West Hampton Avenue from North 92nd Street to Lovers Lane, two Milwaukee County projects also within the City limits.

• Construction on the Marquette Interchange is complete, and a ribbon-cutting ceremony was conducted by the Wisconsin Department of Transportation (WisDOT) in August 2008 for the grand opening.

The following local streets damaged as a result of the Interchange project have also been completed, including the additional streetscaping of some streets to enhance the area surrounding the Milwaukee Intermodal Station at North 6th Street and West St. Paul Avenue:

- West Clybourn Street
- West St. Paul Avenue
- North 2nd Street
- North 3rd Street
- North 4th Street
- North 5th Street

Construction remains ongoing on the following bridge and paving projects:

- The reconstruction of West Highland Boulevard Bridge over the Soo Line Railroad and the West Highland Boulevard Bridge Retaining Wall. Scheduled for completion in November 2009.
- West North Avenue from North 31st Street to North 40th Street. Scheduled for completion in fall 2009.
- The reconstruction of West Humboldt Avenue Bridge over the Milwaukee River. Scheduled for completion in mid-2010.
- The reconstruction of West Humboldt Avenue Bridge over North Riverboat Road. Scheduled for completion in December 2009.
- The reconstruction of the Kilbourn Avenue Bridge over the Milwaukee River. Scheduled for completion in June 2009.



Construction on the Humboldt Avenue Bridges over the Milwaukee River and Riverboat Road began in fall 2008. Both bridges will have improved features, including pedestrian overlook areas on the bridge over the river.

Major Projects continues to work with WisDOT in its efforts to rehabilitate 2.7 miles of North 76th Street (US-181). The section of North 76th Street from West Florist Avenue to West Clinton Avenue was completed in 2007. Construction will be complete for the remaining portion of North 76th Street from West Clinton Avenue to West County Line Road in spring 2009.

Plan review and utility coordination continue on the following State Trunk Highways (STH):

- Intersection of West Fond du Lac Avenue and STH-145 (north of West Hampton Avenue)
- West Forest Home Avenue (STH-24) from South 45th Street to Highway 100
- West Appleton Avenue (STH-41) from West Capitol Drive to US-45
- West Brown Deer Road (STH-100) from North 91st St. to North 124th St.
- South Howell Avenue (STH-38) HES intersections

Plan review and coordination of several Milwaukee County roadway and bridge projects that lie within the City of Milwaukee are in progress:

- South 13th Street between West Rawson Avenue and West College Avenue
- A bridge rehabilitation project on West

Oklahoma Avenue over the Honey Creek

- West Hampton Avenue between North Lovers Lane Road (STH 100) and North 124th Street
- West Good Hope Road between North 76th Street and North 107th Street
- The intersection of Good Hope Road and North 91st Street
- The Good Hope Road Bridges rehabilitation over the Menomonee River
- The Lake Park Drive Bridge over the North Drainage Ravine
- West Silver Spring Drive from North 92nd Street to North 124th Street
- West Silver Spring Drive from North 68th Street to North 92nd Street
- West Silver Spring Drive Bridge over the Menomonee River and West College Avenue (CTH-ZZ) from South Howell Avenue to South Pennsylvania

Engineering was in progress for 9 Federal and/or State Aided Major Street paving projects, two Congestion Mitigation Air Quality (CMAQ) landscaping/lighting projects, one Highway Safety Improvement Program (HSIP) project, four Local Bridge Replacement Program projects, one State Trunk Highway Bridge Replacement/Rehabilitation project, and one Bicycle Path project.

Construction on several portions on the WisDOT North-South Corridor Mitchell

Interchange project will begin in 2009, including the following:

- Grange Avenue Water Main Relocation
- South 27th Street (STH) Bridge and Approaches (Freeway bridge south of Howard Avenue)
- Airport Spur (westbound STH 119)
- Grange Avenue Freeway Overpass
- College Avenue Freeway Interchange
- Traffic Mitigation at South 13th Street and West Rawson Avenue
- Traffic Mitigation at various locations for signal system
- Bolivar Avenue Realignment between South 5th Street and South 6th Street
- Traffic Mitigation at South Howell Avenue (STH 38) and West Layton Avenue
- Sewer and water work on West Mallory Avenue from South 15th Place to South 18th Street
- Water main work on West Layton Ave. from South 14th Street to South 28th Street

This I-94 freeway project starts south of West Howard Avenue and runs south to the City limits and along I-894 from South 35th Street to East Howell Avenue. Major Projects is involved in coordinating agreements to cover City of Milwaukee interests for Utility Coordination, Traffic Mitigation, and preservation of City structures during the course of the construction, which is scheduled out to 2016.

Major Projects will also be involved in the coordination of the Zoo Interchange with the WisDOT, which is tentatively scheduled to start construction in 2012.

This freeway project consists of US-45 south of West Center Street to I-894, I-894 south to West Greenfield Ave., and I-94 between South 116th St. and South 76th St.

## TRAFFIC DESIGN UNIT

### TRAFFIC SIGNALS:

Three new traffic signals were installed in 2008:

- The first signal was installed at the intersection of West Michigan Street/West Tory Hill and North 10th Street in conjunction with changes to ramp configurations associated with the reconstruction of the Marquette Interchange
- Signals were installed at the intersec-

tion of West Center Street and North 22nd Street under a Safe Routes to School Grant

- Signals were installed at the intersection of East/West Virginia Street and South 1st Street as part of the development of the new Independence First facility located on South 1st Street

### DID YOU KNOW?...

Four Milwaukee intersections have audible pedestrian signals that provide a prompt to visually impaired pedestrians when it is safe to cross the street.

- Additionally, two unwarranted traffic signals were removed, one at the intersection of West Mineral Street and South 5th Street and one at the intersection of West Washington Street and South 5th Street

- With the completion of the reconstruction of the North Teutonia Avenue Bridge over West Silver Spring Drive, traffic signals were reconfigured at this interchange to provide for the operation of traffic at the City's first Single Point Urban Interchange (SPUI), which is intended to ease the operation and reduce congestion at the intersection. The upgrade of the interchange to provide for safer and more efficient interchange operation was funded through a Federal Highway Safety Improvement Grant.

- The change of incandescent light bulbs in traffic signals to energy-efficient Light Emitting Diodes (LEDs) continued in 2008. LEDs use less energy, emit less pollution and are brighter than incandescent bulbs. All incandescent bulbs were converted to LEDs at 203 signalized intersections in 2008, for a total of 433 signalized intersections since the beginning of the project. Of the remaining signalized intersections to be converted to LEDs, 194 of them will be done with a performance contract awarded to Johnson Controls. The remaining will be completed by City personnel.

- The City continued its program of installing fire vehicle traffic signal preemption devices on primary fire response routes. As the fire vehicles approach, a continuous green signal indication is displayed on the emergency route to clear the vehicular traffic at signalized intersections and give the approaching emergency vehicles unobstructed travel through the intersection.

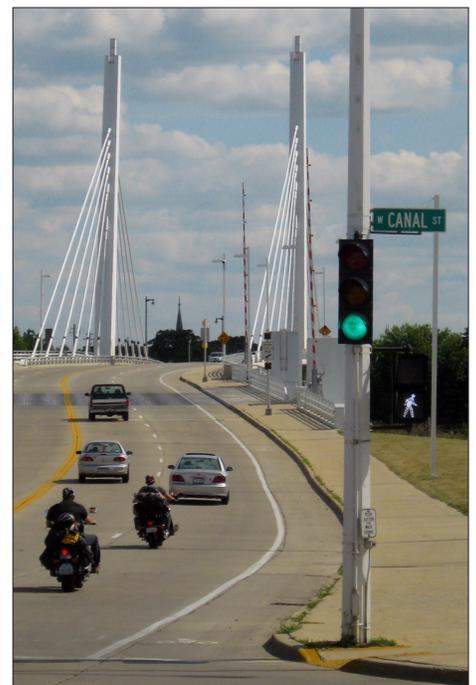
This program improves response times for these emergency vehicles while im-

proving safety for emergency vehicles, as well as pedestrian and vehicular traffic at affected intersections. The signal preemption devices were made operational at six locations under this program in 2008 for a total of 232 intersections.

- While the Marquette Interchange project came to a close in 2008, the Unit worked closely with the WisDOT to meet accelerated deadlines for the opening of City intersections. Shortly thereafter, preliminary planning began for the start of the I-94 North/South Freeway Reconstruction, with planning-level meetings and preparations to deal with traffic diverted from the freeways onto City streets during the reconstruction starting in 2009.

- Work also continued on a limited basis to install pedestrian countdown signal indications at a limited number of intersections in conjunction with paving and other federally aided projects. These indications provide information to pedestrians on time remaining to cross the street before the yellow signal indication.

Audible pedestrian signals were installed at four intersections to provide a prompt for visually impaired pedestrians when it is safe to cross the street at these signalized intersections.



The Traffic Design Unit installed Light Emitting Diodes (LEDs) at 203 intersections in 2008. LEDs use less energy, emit less pollution and are brighter than incandescent bulbs.

## TRAFFIC OPERATIONS:

- Approximately 167 miles of lane lines and edge lines and 180 miles of center lines were painted in 2008 to maintain adequate visibility of pavement markings and to provide positive guidance to motorists. Crosswalks were painted at 1,396 locations. Special arrow and “only” markings were painted at 203 locations to delineate turning movements.

- North Broadway between East Clybourn Street and East Michigan Street was converted from a one-way street to a two-way street in order to provide better traffic circulation in the downtown area.

- The unit also coordinated the signing, maps, and traffic control for approximately 1,000 special events, which included bike races, festivals, filming, marches, parades/processions, parking events, runs, walks, block parties and many other activities affecting the use of City streets.

The unit also coordinates the traffic control for all utility and construction work in City streets, making sure that special events and construction work do not overlap.

Approximately 564 requests for the installation of “Temporary No Parking” signs were processed, along with 1,074 permit requests for occupancy of the right-of-way.

### DID YOU KNOW?...

95 percent of street lights in Milwaukee are energy-efficient high-pressure sodium lights.

## TRAFFIC SIGNS:

- In 2008, approximately 3,300 traffic signs were replaced throughout the City as part of our sign maintenance program to replace faded, vandalized, damaged, deteriorated or missing signs. Also, 2,400 new traffic signs were installed throughout the City, now bringing the total amount of traffic signs in the City to 118,580.

## GENERAL:

In July 2008, Traffic Engineering staff took part in the comment process in the 2007 Notice of Proposed Amendments for the Manual on Uniform Traffic Control Devices (MUTCD) as a part of Congressional rulemaking on sweeping changes proposed to the Manual.

Our Division follows the guidelines in the MUTCD to determine the need for

installation and the application of traffic control devices such as traffic signs, traffic signals and pavement markings, to which the City is required by State Statutes to conform.

Examples of amendment changes that will have the largest impact on our traffic sign operation include:

- Changes in minimum sign sizes and lettering on roadways to increase sign legibility and location. If approved, this and similar changes will result in the need to install or replace thousands of traffic signs over the next few years to maintain compliance with the new MUTCD requirements.

- The MUTCD has proposed changing the walking speed of pedestrians, which will require wide-scale re-timings of existing traffic signals

- It is being proposed that both count-down pedestrian indications and audio-vibro-tactile pedestrian equipment be installed at practically all existing and proposed signalized intersections.

- Additional requirements for the minimum size of signal lenses and placement of signal indications at an intersection will affect the majority of the City’s traffic signals.

Although phased in over a period of up to 10 years in some cases, the proposed modifications, if approved, will have a significant fiscal impact.

The Federal Highway Administration is currently reviewing comments submitted concerning the proposed MUTCD amendments, and is anticipated to issue a final ruling by fall 2009.

## STREET LIGHTING DESIGN UNIT

As part of the City’s 2008 Capital Improvement Program, plans were prepared for street lighting alterations and upgrades that were to be done in conjunction with 66 paving projects throughout the City. Lighting work done in conjunction with these projects included:

- The installation of overhead circuitry prior to construction to maintain adequate light levels during construction

- Protecting and adjusting facilities during construction work

- Where required, the installation of new street lighting cable and the upgrade of electrical circuitry and components



Historic lanterns and harp lights continue to be installed in the City, especially along Wisconsin Avenue.

In 1987, an initiative was begun to convert all mercury vapor and incandescent street lighting in the City of Milwaukee to more energy-efficient high-pressure sodium lighting.

In 2008, a total of 132 street lights in the City were converted to high-pressure sodium lighting. With this work, approximately 95 percent of the 67,709 streetlights in the City of Milwaukee have now been converted to high-pressure sodium.

Historic Milwaukee lanterns and harp lights continue to be installed in conjunction with streetscape, redevelopment, neighborhood and business district beautification projects through grant funds or other private funding sources. Examples of projects completed this year include:

- The installation of double harp lights and other street lighting upgrades in conjunction with the implementation of streetscape improvements on West Wisconsin Avenue from North 4th Street to North 10th Street

- The completion of The Brewery Phase I development

West Wisconsin Avenue from North 2nd Street to the Milwaukee River is scheduled for construction in 2009, which will complete the streetscape project, including the installation of double harp light units on Wisconsin Avenue from the Prospect Avenue/Mason Street intersection to North 10th Street.

Engineering was completed for the major developments of The Brewery Phase

I, located south of West Winnebago Street and east of the freeway; and The North End, located on North Water Street, south of East Pleasant Street.

Construction for both projects will continue in 2009.

Work was nearing completion in 2008 on the installation of street lighting on City streets affected by roadway improvements made in conjunction with the Marquette Interchange Reconstruction Project, which was completed in August 2008.

Temporary and permanent street lighting improvements were coordinated with WisDOT contractors.

Street Lighting work will be completed in 2009 for the remaining segment of the project.

With the completion of the Marquette Interchange project, attention is shifting to the reconstruction of the I-94 North-South Freeway from the Mitchell Interchange south to the Illinois border, and design was initiated for both temporary and permanent street lighting improvements associated with this project.

In 2005, a major circuit cutover to replace aging electrical circuitry was started at the west side of the City between the area bounded by North Hawley Road to North 77th Street and West Blue Mound Road to West Dickinson Street. Work continued on this upgrade in 2008, and is anticipated to be completed in 2009 on the last segment of the project.

Engineering was completed for another major circuitry upgrade in the area bounded by West Capitol Drive to West Locust Street and North 27th Street to West Atkinson Avenue, and construction commenced in 2008.

In 2008, work continued on the replacement of the City's Master Street Lighting Control System. An operational prototype has been developed and is now in service. The reliability of the current system, which was developed using World War II-era technology to turn the street lights on and off, is declining due to its age.

Technological advancements will not only provide more reliable activation of street lights, but will also provide monitoring capabilities of system performance and assist in more efficient repair and maintenance of street lighting facilities.

In 2008, development of the computerized master control system was completed, and the first phase of system construction on the existing system has been 90 percent completed.

This phase will be completed in early 2009. Phase 2 engineering has started and will be completed in 2009.

Street Lighting personnel continued to maintain and operate outlet circuitry for 15 business districts and other organizations for Christmas decorations and other yearly civic celebrations and events.

Street Lighting personnel installed and currently supply power to the electronic parking meters (known as LUKes) at various locations within the Downtown area. It is anticipated that the advanced technology parking meter system will be deployed at additional locations in 2009.

## PLANNING AND DEVELOPMENTS

The Planning and Developments Unit undertakes various tasks related to transportation planning, ranging from non-traditional projects such as traffic calming to arterial roadway and freeway improvements.

2008 accomplishments include:

- Providing assistance to WisDOT with regard to traffic mitigation, administration and completion activities during the reconstruction of the Marquette Interchange. This unit attended numerous meetings concerning traffic mitigation in an effort to keep downtown Milwaukee open for business during all phases of the Marquette Interchange construction and to minimize



Street Lighting personnel continue to maintain and operate outlet circuitry for the Christmas decorations of 15 business districts and other organizations.

the impacts of diverted traffic from the interchange during construction.

- Providing assistance to WisDOT with regard to upcoming traffic mitigation, utility relocation and administration during the reconstruction of the Mitchell Interchange and the I-94 North/South corridor, which will begin in early 2009 and continue through 2016.

- Participating in the Technical Advisory Committee meetings for the Zoo Interchange/US-41 Corridor Study/Environmental Impact Statement and performing an extensive review of design alternatives and impact analyses for the project.

- Reviewing initial concept plans developed by WisDOT and making recommendations for a project to replace the Hoan Bridge with an at-grade facility.

- Continuing work on the Summerfest Shuttle Bus Advanced Parking Guidance system. This system will provide information on available parking in garages near downtown shuttle routes to drivers headed



Infrastructure Services continued its support of bike initiatives in 2008 by installing bike lanes on West State St., West Wells St. and West North Ave.

to Summerfest. The first phase is scheduled to be implemented in 2009.

- Continuing involvement with the Milwaukee Neighborhood Traffic Management Plan. This ongoing program resulted in numerous speed humps being constructed throughout the City.

- Starting engineering on the federally funded Safe Routes to School Program for pedestrian enhancements at the intersection of West Forest Home Avenue, West Oklahoma Avenue and South 43rd Street.

- Coordinating the planning for utility relocations in conjunction with Milwaukee County's Runway Safety project at General Mitchell Airport, which will require the realignment of South 6th Street to accommodate the extension of an airport runway.

**BIKE INITIATIVES:**

Significant gains were made to support bike initiatives in 2008, including:

- Installing bike lanes on West State St., West Wells St. and West North Ave.
- Printing and distributing more than 20,000 bike route maps
- Purchasing 200 additional bike racks, bringing the total to 2,400 in the City
- Constructing the Beerline Bike/Recreational Corridor between East Burleigh Street and East Keefe Avenue
- The Bicycle and Pedestrian Coordinator organized Milwaukee's first Street Share Pedestrian Safety Week in October

- Continuing engineering on the Kinnickinnic River Bike Trail over the former Union Pacific Railroad between South 6th Street and East Washington Street. The project includes a new bicycle bridge over South Chase Avenue. Construction is expected to begin in 2009.

**MENOMONEE VALLEY DEVELOPMENT:**

This unit continues to work cooperatively with the Menomonee Valley Partners business group in its efforts to redevelop the Menomonee Valley in an environmentally sensitive and sustainable fashion.

In 2008, this unit continued to participate in planning efforts for the public spaces within the Menomonee Valley Industrial Center, including the development of an extensive plan to improve bike and pedestrian access from the near-south side neighborhoods.

Preliminary engineering continued on the first element of the community park known as the Valley Passage Project. This project will provide a direct bike/pedestrian connection from West Pierce Street to the Menomonee Valley. Engineering and right-of-way acquisition will continue through 2009, with the project anticipated to be let in late 2009.

**MASS TRANSIT:**

This unit continued to participate in the

Milwaukee Downtown Transit Connector Alternatives Analysis, which is expected to continue through 2009.

This unit also participated in the Keno-sha-Racine-Milwaukee Commuter Rail Alternatives Analysis. The study is intended to produce a draft environmental impact statement and further develop a commuter transportation project within the corridor. The study will be continued through 2009.

**CENTRAL DRAFTING & RECORDS**

The Central Drafting and Records Unit is responsible for maintaining the one-quarter section maps within the corporate limits of the City, and those areas outside of the City in which the Milwaukee Water Works provides service and maintains facilities.

The maintenance of these maps, along with maintenance of the official maps, aldermanic district maps, police district maps and address assignment maps, and the preparation of state and City paving plans, bridge plans, street lighting plans, circuit maps, traffic signal plans, traffic control and pavement marking plans, underground conduit plans, and other specialty maps and exhibits is accomplished with the use of an interactive computer graphics system.

Additional duties of Central Drafting and Records Unit include:

- Operation of a "Diggers Hotline" service to assist in the location of City of Milwaukee utilities in the public way
- Preparation of legal descriptions and maps for openings or closings of public rights-of-way
- Maps for annexation to or detachment from the City of Milwaukee
- Review of certified survey maps and subdivision plats
- Assignment of addresses
- Review of street name change ordinances
- Checking and optimizing routes for oversize and overweight loads
- Sale of maps
- Performing traffic counts and surveys

In 2008, 13 plans and petitions for the vacation of public ways were processed. The Unit also processed one subdivision plat and 54 certified survey maps, produced 96 paving plans for 55 separate paving projects, 10 bridge structure projects and 14 state paving projects, and acted upon 47,479 requests from Diggers Hotline to

locate the City's underground electrical and water main facilities and 1,305 requests for utility plan information.

#### CITY UNDERGROUND CONDUIT:

During 2008, an additional 8,001 lineal trench feet of conduit packages were installed and 2,306 lineal feet of conduit packages were replaced.

New Conduit was installed at the following locations:

- West North Avenue from North 31st Street to North 35th Street
- West Ramsey Avenue from South 13th Street to South 20th Street
- North King Drive from West McKinley Avenue to West Cherry Street
- West Cherry Street from King Drive to North Commerce Street
- South 29th Street Bridge over the Kinnickinnic River
- North Hinman Street at a point south of West Clybourn Avenue
- West Highland Avenue Bridge over the Canadian Pacific Rail System

Existing Conduit was replaced at the following locations due to conflicts with construction/paving projects:

- West Greenfield Avenue from South 1st Street to South 16th Street
- West Florida Avenue from South 5th Street to South 6th Street
- South 29th Street Bridge over Union Pacific railroad
- North Teutonia Avenue Bridge over West Silver Spring Drive
- North Teutonia Avenue Bridge over Union Pacific Railroad

#### ENVIRONMENTAL SECTION

The Environmental Section is financed through the Sewer Maintenance and Storm Water Management fees and is responsible for the programming, funding, design and installation of sanitary, storm and combined sewer facilities, as well as building sewers.

The Section also handles the administration and implementation of the City's two Wisconsin Pollutant Discharge Elimination System permits.

One permit covers the sanitary sewer system and the other permit covers the discharge of storm sewers into the area's rivers and Lake Michigan. In addition, the

section manages various infiltration and inflow reduction activities required to meet Milwaukee Metropolitan Sewerage District's rules.

The section, through its Underground Operations Unit, is also responsible for the inspection, maintenance, and repair of the City's sewer mains, manholes, catch basins and storm inlets.

The construction of the underground conduit system is also performed by Underground Operations.

#### SEWER DESIGN AREA:

The Sewer Design Area designed and let 47 sewer contracts, totaling 14.65 miles of replacement sewers and 2.75 miles of rehabilitation of existing sewers by trenchless methods. The total cost of all these projects was \$26 million.

Some major projects included:

- **West Greves St. Replacement Sewer**

A portion of the existing combined sewer was separated by constructing new storm sewers to handle street runoff and reduce the volume of water going to the combined sewer system.

By installing the storm sewers and reconstructing the combined sewers, the section was able to reduce the amount of water sent to MMSD's deep tunnel system, lessening the risk of an overflow in this area.

Total project cost was \$2.3 million.

- **South 38th Street from West Dorothy Street to West Mitchell Street**

This project was completed to correct structural problems with the storm sewer located under South 38th Street.

Approximately 2,100 feet of 78-

inch diameter storm sewer was rehabilitated with fiber glass-reinforced pipes. This method of rehabilitation minimizes the amount of open cut work and the corresponding disruptions to local residents and area traffic.

Total project cost was \$2.8 million.

- **West Washington Blvd. from North 47th Street to North 60th Street**

Aging combined sewers were rehabilitated prior to the reconstruction of the roadway in West Washington Boulevard from North 47th Street to North 60th Street.

Approximately 6,500 feet of combined sewers ranging in diameters from 12-inch to 36-inch were rehabilitated using the trenchless method of cured-in-place pipe. Only 500 feet of combined sewers were re-layed using an open-cut excavation.

The City used the trenchless method to minimize disruptions to local residents and save existing trees.

Total project cost was \$1.5 million.

#### STORM WATER MANAGEMENT AREA:

In 2008, the section reviewed and approved 43 storm water management plans.



Repairing and redesigning manhole covers, such as this one in the Miller Valley, reduces the amount of inflow and infiltration entering sanitary manholes.

• **Municipal Storm Water Total Suspended Solids (TSS) Reduction**

As required by the Wisconsin Department of Natural Resources, the City of Milwaukee must implement a 40 percent reduction in total suspended solids in runoff that enters waters of the state, as compared to no controls, by March 10, 2013.

To aid in its efforts to reach the 40 percent TSS reduction requirements, the City let and awarded a contract in August 2008 for \$380,000 for the installation of storm water treatment units at different locations throughout the City.

We also designed and installed bioretention facilities into street right-of-ways behind the curb to treat storm water runoff. These facilities are the first of their kind in the City of Milwaukee. They were constructed on North 27th Street between West Capitol and West Roosevelt Drives, where 14 bioretention planters were installed along with educational signage.

Bioretention has become a popular best management practice throughout the country where certain native plants and flowers are planted in engineered soils to trap pollutants that exist in storm water runoff before the runoff makes it to area streams and rivers.

• **Illegal/Illicit Discharge Testing**

This section is able to identify sources of illegal/illicit discharge in City waterways using dry weather testing. Dry weather testing consists of visual and chemical tests for pollution at outfalls, the discharge point of a waste stream into a body of water.

This section performed a total of 1,344 dry weather tests during 2008. Of these tests, 899 were performed at outfalls and 445 were at points upstream of the outfalls.

The dry weather testing identified 24 locations as being potential sources of pollution. Additional dry weather testing, private property inspections and lateral dye testing were performed at these locations, resulting in referrals to the Department of Neighborhood Services for further action.

INFILTRATION AND INFLOW (I/I) REDUCTION PROGRAM AREA:

• **Sanitary Sewer Flow Monitoring**

A total of 29 sanitary sewer systems were

monitored in 2008. Flow monitoring data is analyzed to determine the quality of infiltration and inflow in a system, flow restrictions and other problems that may lead to backwater complaints and/or overflows.

• **Sanitary Sewer System Inspection**

In 2008, we awarded an inspection contract worth \$110,000 for about 3,700 sanitary manholes. This work will provide us with a more accurate assessment of our existing sanitary manholes and help to identify defects that may cause infiltration and inflow and other structural defects.

A contract was let in 2008 for the repair of 4,019 sanitary sewer manholes at a cost of \$2.4 million. The rehabilitation consists of replacing lids, installing chimney seals and repairing defective brick work in the manholes. This work reduces the amount of I/I entering sanitary manholes.

Additionally, we let two storm sewer dye flooding and sanitary sewer televising contracts in the amount of \$1.15 million. These contracts consist of filling the storm sewers with dyed water while simultaneously televising the adjacent sanitary sewer.

Approximately 47 miles of sanitary sewers were televised with these two contracts. The purpose is to identify points of infiltration and inflow from the storm sewer into the sanitary sewers and whether the clear water is entering from the public facilities or private building laterals.

• **Sanitary Bypass Station Rehabilitation**

In 2008, the City awarded two sanitary bypass station rehabilitation contracts in the amount of \$400,000.

The scope of work on these projects involved the replacement and installation of submersible pumps, discharge piping, valves, level transmitters and construction of new bypass pump manholes and control cabinets.



Flooding in June 2008 elicited more than 600 street ponding complaints. Underground Operations crews worked around the clock responding to these calls.

AUTOMATED MAPPING AND DRAFTING AREA:

This section drafted a total of 260 sewer construction plans in 2008. These plans are used in the installation, replacement or rehabilitation of sanitary, storm and combined sewers at various locations throughout the City.

In 2008, the section continued its efforts to convert sewer maps and other records from paper files and/or microfilm to digital documents, which enable staff to access information from their workstation and update and edit the documents with greater speed. This section also continued to move forward on digitizing sewer laterals and other geographic features on our maps.

Other responsibilities of the unit include:

- Providing the public and other City departments with maps and information regarding City sewers
- Assisting citizens and plumbing contractors with sewer/sewer lateral questions
- Preparing sewer construction sketches for public hearings
- Drawing sewer easement plans for construction projects and street vacations
- Processing utility, plumbing, and building permits

UNDERGROUND OPERATIONS UNIT:

Underground Operations is responsible for cleaning, inspecting and repairing the City of Milwaukee's various sewer systems (sanitary, combined and storm) and structures (manholes, catch basins and storm inlets). This includes responding to and investigating complaints of backwater (basement flooding) and street ponding (surface

**DID YOU KNOW?...**  
The City installed its first bioretention facilities behind curbs to treat storm water runoff.

flooding) throughout the City.

Underground Operations also inspects and repairs communication manholes and installs communication conduit. The conduit work, along with much of the inspections and repairs of the sewer structures, occurs on streets scheduled to be repaved.

During heavy rainstorms from June 5 to June 12, 2008, Underground Operations responded to more than 1,700 backwater complaints and more than 600 street ponding calls. Employees worked around the clock responding to these service calls, including several outside of our jurisdiction.

For all of 2008, we responded to 11,651 service calls, which included backwaters, clogged catch basins, clogged storm inlets and other sewer-related complaints.

During 2008, 146.3 miles of sewers were examined and 596 miles of sewers were cleaned.

In addition, 11,092 catch basins and 25,779 storm inlets were cleaned. Cleaning the catch basins and storm inlets maintains the surface water drainage during storm events and reduces the amount of storm water ponding on streets.

In 2008, the major underground conduit installation and communication manhole projects performed by Underground Operations were:

- 23,000 feet of conduit on West Greenfield Avenue, from South Cesar Chavez Drive to South 1st Street
- 16,000 feet of conduit on West Ramsey Avenue, from South 13th Street to South 20th Street (WisDOT project)
- 5,080 feet of conduit on West North Ave. from North 32nd to North 35th Street
- Communication manhole replacements in North 76th Street from West Clinton to West County Line Road

Underground Operations is also responsible for the disposal of the debris removed during the cleaning of the sewers, catch basin and storm inlets. In 2007, a contract was awarded to Veolia Water Milwaukee, LLC for disposal of the wet material collected in the cleaning process.

## CONSTRUCTION UNIT

The Construction Unit administers all facets of paving, sewer, water and grading projects. This includes construction inspection, materials administration inspection,

labor compliance, contractor payments, pavement construction, erosion control plan approval and inspection, as-built plans of record, maintaining a 156,000 record Road Life database and construction management.

The Field Engineering Area performs existing roadway surveys, designs, as-built certificates and construction staking.

### SEWER AND WATER:

Sewer construction totaled \$26 million for 47 contracts covering 14.65 miles. Water main construction consisted of 24 contracts that totaled 11.6 miles of water main relay at a cost \$18.8 million. Inspection was also provided for 0.53 miles of suburban and private water main installation.

### LOCAL PAVING:

In 2008, local paving work consisted of 21 contracts that totaled 9.78 miles of roads and 1.17 miles of alleys. The total local paving contract cost was \$7.5 million. In addition, Street Maintenance resurface paving work consisted of one contract that totaled 1.7 miles of roads.

### STATE PAVING:

The Construction Unit also performs administrative duties on Wisconsin Department of Transportation (WisDOT) projects within the City of Milwaukee. These functions include construction management,

design, inspection, contractor payment estimates, materials monitoring and reporting, as-built measuring and certificate completion, and wage/labor verification. For select projects, survey and design duties were also performed.

Four WisDOT paving projects covering 2.92 miles were constructed this year at a 2008 contract cost of a \$7.1 million. They include the following:

- West Wisconsin Avenue from North 4th Street to North 10th Street
- West Washington Blvd. from North 47th Street to North 60th Street
- West Greenfield Avenue from South 1st Street to South Cesar Chavez Drive
- West North Avenue from North 40th Street to West Lisbon Avenue

Four bridge projects were completed and one bridge project (West Kilbourn Avenue) continued construction in 2009 at a total 2008 contract cost of \$20 million. These WisDOT projects were administered by the City of Milwaukee:

- West Teutonia Avenue Bridge over the Union Pacific Railway
- West Teutonia Avenue Bridge over West Silver Spring Drive
- North Prospect Avenue Bridge over the Oak Leaf Trail
- South 29th Street Bridge over the Canadian Pacific Railway
- West Kilbourn Avenue Bridge over the Milwaukee River



An Underground Operations crew installs conduit on W. Greenfield Ave.

## FIELD OPERATIONS SECTION

The Field Operations Section operates, maintains and repairs the many infrastructure facilities located in the public way. Responsibilities of the Field Operations Section include:

- Maintenance of the City's streets, alleys and sidewalks
- Design of street, alley, sidewalk and bridge improvement projects
- Construction management and inspection of street, alley, sidewalk, bridge, sewer and water improvement projects
- Construction and maintenance of all public-way lighting, traffic control signals, traffic signage and pavement markings
- Operation of the Inventory/Stores function for Street Maintenance, Sewer Maintenance, Underground Services, Electrical Services and Water Works, including materials, parts, tools and supplies
- Inspection of permitted utility construction and occupancy in the public way

### STREET MAINTENANCE AREA:

The Street Maintenance Section administers three types of maintenance contracts: pavement seal coating, crack filling and asphalt pavement resurfacing.

• Last year marked our tenth season of the "Slurry Seal" method of seal-coating asphalt pavements. "Slurry Seal" extends the life of existing pavement by protecting its undersurface from the effects of aging and the environment. City streets received 255,453 square yards of "Slurry Seal" in 2008.

• Under the city's crack filling contract, 406,373 square yards of pavement were crack-filled using a rubberized joint seal.

• In an effort to eliminate most of the rutting and shoveling that is typically seen at intersections and in high-traffic areas, superpave asphalt was used to resurface 6,138 tons of asphalt on the following streets:

- South 13th Street between West Grange Ave. and W. Boden Court
- The intersection of East Locust Street and North Humboldt Blvd.
- N. 99th St. between W. Good Hope Rd. and W. Calumet Rd.
- South 13th Street between West Boden Court and W. College Ave.



A construction crew rehabilitates the South 29th Street Bridge over the Kinnickinnic River. The project, completed in November 2008, consisted of replacing the bridge deck, painting, and modifying the railing.

Street Maintenance Section field crews placed an additional 14,900 tons of asphalt on City streets. Repair projects included:

- Asphalt shims, temporary patching over cracks and uplifts before permanent repairs are made, on roadways and sidewalks
- Small asphalt patches
- Pothole repairs

### POTHOLES:

Due to the severe winter season, extra pothole patching crews were dispatched to meet the demand for pothole patching requests. Street Maintenance utilizes asphalt patching trucks and Roadpatchers to repair potholes. Roadpatchers are one-person vehicles that use compressed air to blow debris out of a pothole, spray asphalt into the pothole and top it with limestone chips so that traffic can immediately drive over the repaired roadway.

The Street Maintenance Section tracks customer requests for pothole patching through the City of Milwaukee's Call Center. In 2008, the Call Center received 16,778 calls regarding potholes, up from 10,774 calls in 2007.

Street Maintenance crews continued to use a sidewalk grinder on offsets along city sidewalks. The sidewalk grinder corrects water flow problems along curbs, within alleys and along bridge approaches.

In 2008, the section tried a new procedure using a concrete saw to eliminate offsets. This technique was particularly effective downtown and was done prior to some downtown conventions.

The Inventory Section is in the process of installing a bar-coding system to track materials used by Street Maintenance, Bridge Maintenance, Sewer Maintenance, Building Maintenance, Electrical Services, the Construction Section and the Water Department.

The section also constructed a cold storage building for materials that need to be protected from UV rays but do not need to be in a heated building.

### BRIDGE MAINTENANCE AREA:

The Bridge Maintenance Section is responsible for regular and preventative maintenance associated with more than 200 bridges maintained by the City of Milwaukee, including 21 movable bridges that operate on a year-round basis.

Bridge Maintenance duties include:

- Responding to bridge emergencies 24 hours a day, seven days a week
- Repairing or replacing failed expansion joints
- Removing delaminating concrete
- Cutting and patching concrete flaws

- Removing snow from sidewalk areas of bridges and viaducts, including stairways
- Removing graffiti
- Removing weeds and cutting grass along bridge approaches
- Cleaning drains along bridges
- Cleaning pedestrian bridges
- Cleaning expansion joints at the ends of bridges and along entire viaducts

In addition to routine maintenance in 2008, large projects included:

- Completion of the 29th Street Bridge (#222) deck slab rehabilitation
- Floor removal and repair in the North 6th Street Bridge house
- Repair of a retaining wall near Kinnickinnic Avenue and Ohio Avenue
- Repair of abutment wall, walkways and landscaping for the Holton Street Marsupial Bridge and Urban Plaza area

Unscheduled work included:

- Flood control barricading
- Repair of large mudslides
- Wash outs
- Tree removal from bridge underpasses
- Repair of traffic attenuators and fencing following accidents

Other unique projects included:

- Placement or removal of concrete Jersey barriers, walls that separate traffic lanes
- Installation of speed humps, guardrails, flagpoles and bollards (traffic control posts)
- Extensive repair work on the Mason Street Piers

Bridge Maintenance performed work for other DPW divisions and other City agencies, including:

- Placement of bike racks at various sites
- Ceiling tile and drywall work at City Hall
- Roof, floor, window and door replacement at Electrical Services outbuildings
- Conversion of under-utilized space into an office for the Electrical Services Inventory Manager
- Concrete and ironwork repairs at many City-owned structures, including municipal garages, the parking entrance at 4th and Highland, MacArthur Square and the entry stairs to the Police Academy

- Installation of concrete pads at Kilbourn Reservoir Park
- Remodeling of a conference room, installation of new ladders, hood extensions and hatches at the Howard Avenue Purification Plant

- Settled water duct repairs, clear well repairs, loading dock platform replacement, Pump House stairs and other small concrete repairs at the Linwood Water Treatment Plant
- Placement and service of various Department of Neighborhood Services anti-graffiti cameras
- Abatement of graffiti through a two-man crew and vehicle

### DID YOU KNOW?...

The new South 29th Street Bridge over the Union Pacific Railroad is the first hybrid bridge of its kind to be built in the State of Wisconsin.

### BRIDGE OPERATIONS AREA:

In 2008, our operators conducted 14,617 bridge openings for commercial and recreational traffic. Nine of the City's 21 movable bridges can be remotely operated from a hub bridge. We continue to update bridge electrical layouts and circuit designs to increase reliability in the operation of our movable bridges.

In cooperation with the Environmental Protection Agency and the Wisconsin Department of Natural Resources, Bridge Operations began planning and preparations for the Kinnickinnic River Environmental Restoration Project. This major dredging project will require relocation of City utility packages. These utilities run through

riverbeds and interconnect City bridges.

### INSPECTIONS AREA:

The Inspections Section handled nearly 11,000 construction permits in 2007.

In addition to construction permits, the Inspections Section reviews Special Event Permits such as block parties, walk/runs and parades. Contractors working in the location of Special Events are notified of the event and directed to complete their work or close up their excavations so as to cause little or no disruption to the special event.

### STRUCTURAL DESIGN UNIT

The Structural Design Unit designs and prepares contract documents, maintains plans and other records, and performs construction administration for a wide variety of projects involving bridges, retaining walls, parking structures, Riverwalks and other structures.

The unit develops a Capital Improvement Program and performs safety inspection for all City-maintained bridges and City-owned parking structures.

### BRIDGE DESIGN & CONSTRUCTION:

The Structural Design Unit performed the following work in 2008:

- **Kilbourn Avenue Bascule Bridge**

Rehabilitation of the structural, mechanical and electrical components of the Kilbourn Avenue Bridge over the Milwaukee

### TOTAL OPENINGS ALL BRIDGES 2008

Month	1st Shift	2nd Shift	3rd Shift	Total
January	305	46	110	<b>461</b>
February	302	56	68	<b>426</b>
March	395	25	99	<b>519</b>
April	464	90	83	<b>637</b>
May	795	410	91	<b>1,296</b>
June	1,055	871	402	<b>2,328</b>
July	1,208	1,246	157	<b>2,611</b>
August	1,597	1,211	160	<b>2,968</b>
September	860	765	106	<b>1,731</b>
October	551	242	85	<b>878</b>
November	322	48	75	<b>445</b>
December	211	33	73	<b>317</b>
<b>Total</b>	<b>8,065</b>	<b>5,043</b>	<b>1,509</b>	<b>14,617</b>

River continued. The project seeks to restore the aesthetic features that contribute to the bridge's historical designation.

The Kilbourn Bascule Bridge is the second-oldest remaining Milwaukee-style trunnion bascule bridge. The bridge was closed to traffic in summer 2007 after the adjacent State Street Bridge was reopened to traffic. Rehabilitation work is expected to be completed in June 2009.

• **South 29th Street Bridge**

Replacement of the 29th Street Bridge over the Union Pacific Railroad began in February 2008 and the bridge was opened to traffic in July 2008.

The deteriorated existing bridge was replaced with a single-span, precast tee beam bridge with composite cast-in-place topping.

This type of hybrid bridge has been used in a few states and is the first to be built in the State of Wisconsin.

• **Teutonia Avenue Bridge**

Rehabilitation of the Teutonia Avenue Bridge over the Union Pacific Railroad was completed and both lanes opened to traffic in July 2008.

The project consisted of redecking the bridge, painting the superstructure, repairing the concrete substructure and providing new bridge railing and asphaltic slope paving.

The construction occurred in two phases to allow traffic to remain open on the bridge at all times.

• **South 29th Street Bridge**

Work on the rehabilitation of the South 29th Street Bridge over the Kinnickinnic River was completed in November 2008.

The project consisted of replacing the deteriorated bridge deck, painting the superstructure and modifying the railing to provide a code-required 42-inch height.

• **North Prospect Avenue Bridge**

A contract for the rehabilitation of the North Prospect Avenue Bridge over Oak Leaf Trail was let in March and construction was completed in November 2008.

The project consisted of replacing the concrete-filled steel grating with a new concrete deck, painting the structural steel and making repairs to the substructure elements.

• **North Teutonia Avenue Bridge**

A contract for the rehabilitation of the North Teutonia Avenue Bridge over Silver Spring Drive was let in May.

The work includes replacing the bridge slab, replacing the steel railing with crash-tested rails and incorporating a single-point intersection to reduce traffic accidents.

Although access was provided to both Silver Spring Drive and Teutonia Avenue in late December, full ramp access was delayed by inclement weather and is expected to open fully in early 2009.

• **Highland Boulevard Bridge**

A contract for the replacement of the Highland Boulevard Bridge over the Cana-

dian Pacific Railway was let in July.

The new bridge will be a three-span precast, prestressed girder bridge with aesthetic upgrades incorporated in the bridge railing and vertical wall surfaces of the piers, abutments and retaining walls.

Construction is expected to be completed in fall 2009.

• **Humboldt Avenue Bridges**

A contract for the replacement of the Humboldt Avenue Bridges over Riverboat Road and the Milwaukee River was let in August.

The Riverboat Bridge will provide increased vertical clearance under the bridge while maintaining an adjacent ramp for access to Riverboat Road.

The bridge over the Milwaukee River will be a two-span precast, prestressed girder bridge with overlooks at the middle of the bridge for pedestrians.

The two bridge replacements with aesthetic upgrades, increased roadway width and concrete stone formed retaining walls was let as one project so as to minimize traffic disruptions to the area.

Construction is expected to be completed for the Riverboat Bridge in late 2009 and for the bridge over the Milwaukee River in summer 2010.

• **Forest Home Avenue Bridge**

Final plans, specifications and cost estimates were submitted for the replacement of the Forest Home Avenue Bridge over the Kinnickinnic River.

## KILBOURN AVENUE BRIDGE CONSTRUCTION

The Kilbourn Avenue Bridge is the second-oldest remaining Milwaukee-style trunnion bascule bridge. Rehabilitation of the bridge, expected to be completed in June 2009, involves restoring the aesthetic features that contribute to its historical designation.



In addition to its historic restoration, the bridge received a new feature during construction in 2008 – slip-resistant bike lanes in each direction. The lanes will make it easier for bikers, drivers and pedestrians alike to enjoy their crossing of the historic bridge.

# BRIDGES IN MILWAUKEE

Divided by the Milwaukee, Menomonee and Kinnickinnic Rivers, Milwaukee relies heavily on its 204 bridges, including 21 moveable bridges.

During 2008, rehabilitation of the historic Kilbourn Avenue Bascule Bridge continued, with the bridge scheduled for completion in June 2009.

Replacement of the South 29th Street Bridge

over the Union Pacific Railroad was completed in July 2008. Rehabilitation of the Teutonia Avenue Bridge over the Union Pacific Railroad was also completed in July.

In the fall, construction began on the Humboldt Avenue Bridge over the Milwaukee River. The bridge is slated for completion in 2010.



Wells Street Bridge



McKinley Avenue Bridge



Wisconsin Avenue Bridge

A sampling of the historic and functional bridges Milwaukee has to offer.



Michigan Street Bridge



State Street Bridge



Highland Avenue Bridge



Sixth Street Bridge

The bridge is designated a historic structure and will be replaced with a bridge matching the original geometrics and aesthetics.

Bids for this project are expected in March 2009 with construction slated for completion in fall 2009.

• **Vliet St. and Sherman Blvd. Bridges**

Preliminary engineering started on the rehabilitation of the Vliet Street Bridge over the Canadian Pacific Railroad and the Sherman Boulevard Bridge over Silver Spring Drive.

The work involves repairing concrete spalls, sealing cracks and adding an epoxy overlay to the roadway.

• **County Line Road**

A Cost-Sharing Agreement and cost estimates were prepared with the City of Mequon for the replacement of the County Line Road culvert structure over the Little Menomonee River.

The culvert will be replaced by a bridge meeting the necessary hydraulic and roadway geometrics.

• **Riverwest railroad trestle bridge**

A structural inspection report was prepared and recommendations given for the proposed rehabilitation of the abandoned railroad trestle bridge located adjacent to the Marsupial Bridge's north landing.

The proposed improvements will provide a more direct connection to Commerce Street for pedestrians using the Marsupial Bridge, while restoring a remnant of the old Beerline Railroad spur.

A Request for Proposal was prepared and a consultant selected to provide contract plans and specifications for improvements.

The construction work is scheduled to be completed in 2009.

• **Proposed Menomonee Valley bridge**

Conceptual plans were reviewed and structure recommendations were prepared for a proposed bridge over the Menomonee River and a tunnel under the Canadian Pacific Railroad tracks that would be part of the proposed Menomonee Valley Passage.

The bicycle and pedestrian trail would allow users to access the Hank Aaron State Trail from the South Side of Milwaukee, near 39th and Pierce streets.

• **WisDOT approvals**

Bridge Rehabilitation Reports were prepared, submitted and approved by the Wisconsin Department of Transportation for the Howell Avenue Bridge over the Union Pacific Railroad, Villard Avenue Bridge over Lincoln Creek and the Whitnall Avenue Bridge over Union Pacific Railroad.

Preliminary plans and a Structure Survey Report were prepared, submitted and approved by WisDOT for the rehabilitation of the Hampton Avenue Bridge over Lincoln Creek.

BRIDGE INSPECTION:

This unit performed inspections on 149 City-maintained bridges. The bridge inspection reports were entered into the Highway Structures Inventory System database and copies were submitted to Milwaukee County and WisDOT.

**DID YOU KNOW?...**

The City is required to have dive teams inspect certain bridge foundations every five years.

Federal and state regulations require underwater dive inspections every five years on all bridge foundations located in waterways in which the bottom of the footing is not visible or cannot be located by probing.

Twenty-nine bridges, including riverbed sounding profiles, were inspected this way.

No major deficiencies were observed and final reports were reviewed and submitted to WisDOT to satisfy bridge inspection regulations.

PARKING STRUCTURES:

This unit assisted the Parking Administration with recommendations for short- and long-term repair needs for the City-owned parking structures and helped prepare the six-year Capital Improvement Program for the structures.

• Final plans and specifications were prepared and a contract was let in September for facade repair work for both the 4th and Highland and 2nd and Plankinton parking structures.

The repair work for the 2nd and Plankinton structure was completed in November and the work for the 4th and Highland structure will be completed in spring 2009.

• Preliminary and final contract documents were reviewed for repairs to the roof-level expansion joint for the MacAr-

thur Square Parking Structure.

The contract work was let in December and work will start in spring 2009.

MISCELLANEOUS STRUCTURES:

This unit continued to provide engineering review and contract administration for the Department of City Development in connection with the Milwaukee Riverwalk initiative.

The unit's responsibility included review and recommendations for approval on all contracts, plans and specifications, construction budgets, change orders and payments, shop drawings and construction field reports for the Riverwalk development.

The following Riverwalk projects had activity in 2008:

Contract plans, budgets and payment applications were reviewed for:

• The **Edge Riverwalk**, located on the west side of the Milwaukee River upstream of the Holton Street Bridge

• The **Switch House Riverwalk**, located on the west side of the Milwaukee River upstream of the McKinley Street Bridge

• The **River Renaissance Riverwalk**, at 102 N. Water St. on the east side of the Milwaukee River

• The **Marine Terminal Building**, located on the east side of the Milwaukee River south of Young Street



In 2008, Infrastructure Services reviewed plans to expand the Milwaukee Riverwalk to areas of the Third Ward and Brewers Hill.

- The **First Place Riverwalk**, located at 101 W. Seeboth along the Milwaukee River

- Conceptual plans and budget were reviewed for the **Aloft Riverwalk**, located on the west side of the Milwaukee River between Juneau Avenue and McKinley Street.

- **Brewer's Point Apartments Riverwalk**  
Final plans and specifications were prepared and a contract was let in December for the construction of the Brewer's Point Apartments Riverwalk, located on the west side of the Milwaukee River, downstream of the Lakefront Brewery.

The new on-grade Riverwalk will connect the existing Riverwalks at Trostle Square and the Lakefront Brewery.

The project is scheduled to be completed in 2009.

- **Emmber Lane River Access and Improvement Project**

Contract plans and specifications were reviewed for the Emmber Lane River Access and Improvement Project.

The proposed improvements include a trash barrier wall that will limit the amount of debris that collects in the river adjacent to the bridge, and provisions for a future pedestrian ramp allowing river and dock access.

The project is expected to be completed in 2009.

Structural analysis was performed for various repair and construction projects, including bridges, retaining walls, hollow walks, public buildings, firehouses and bridges with overload vehicles.

The work included:

- Reviewing contract plans and providing technical assistance during construction of the structural modifications needed for a replacement lift elevator at the City Hall main entrance
- Providing structural inspection and recommendations for damage sustained to storage water tanks and the Menomonee Water Works pumping stations caused by flooding in June 2008
- Preparing a final report, at the request of Buildings & Fleet Services, to evaluate the structural condition of the lower park-

### DID YOU KNOW?...

Several Milwaukee intersections are equipped with Milwaukee Fire Department traffic preempt control that adjusts traffic signals when emergency vehicles approach the intersection.

ing level garage slab of the Zeidler Municipal Building. The report will be used to budget future repair work.

- Preparing a structural report and repair recommendations for the Critical Inspection of the City Hall Fire Escape and submitting it to the Department of Neighborhood Services. This report is prepared every five years in compliance with the Milwaukee Code of Ordinances.

Analysis of bridges by this unit for permit overload vehicles continued as the number of permit applications and enforcement has increased.

In 2008, 319 bridge analyses of overload vehicles were performed. The overload review and analysis process has been streamlined to allow a timely response to the permit desk to avoid trucking delays.

## ELECTRICAL SERVICES UNIT

Electrical Services is proud to serve the City of Milwaukee by overseeing the operation, maintenance and installation of facilities and equipment related to street and alley lighting, traffic control signals and street signage.

### TRAFFIC SIGNAL SERVICES:

The Traffic Signal Services are operated and maintains 738 controlled intersections in the City of Milwaukee.

2008 accomplishments included:

- Completing the installation of a new signalized intersection at 22nd and Center
- Completing LED conversions at 220 intersections, which now puts the City at 50 percent LED intersections
- Making pedestrian improvements with the addition

of pushbuttons, countdown heads and/or audible pushbuttons for the visually challenged at 12th St. and Wisconsin Ave., 16th St. and Wisconsin, Brady St. and Farwell Ave., Cambridge Ave. and Farwell, Oklahoma Ave. and 51st St., and Burleigh St. and 92nd St.

- Completing work for the two-way conversion of North Broadway and Michigan



In 2008, Traffic Signal Services added countdown heads and other pedestrian improvements to intersections across the City.

### Street

- Continuing work on the Marquette Interchange Project, including the completion of five new intersections, on/off ramps and temporary signal relocations

- Installing a new traffic count station at 43rd Street and Good Hope Road

- Providing electrical power at two new locations for the Milwaukee Police Department camera project

- Upgrading 10 intersections with Milwaukee Fire Department Opticom traffic preempt control. The control system provides a continuous green signal as emergency vehicles approach an intersection on an emergency route, giving the vehicles unobstructed travel and improving MFD's response time.

- Installing temporary overhead wiring at 21 intersections to accommodate paving and other construction projects

## MACHINE SHOP

The Machine Shop provides the support for routine and specialty machining services for the Electrical Services Unit.

2008 accomplishments include:

- In-house repair of directional boring machines for additional cost savings to the Department of Public Works

- Continued support of Electrical Services crews with fabrication of materials for construction and maintenance



The Traffic Sign Shop created and installed 1,400 temporary "No Parking" signs for the Harley-Davidson 105th Anniversary Celebration held in August 2008.

#### TRAFFIC SIGN SHOP

The Traffic Sign Shop oversees the fabrication, inventory, installation and maintenance of all the traffic, parking and specialty signage in the City, as well as the painting maintenance of all traffic center lines, lane lines and crosswalks.

The Traffic Sign Shop accomplished the following in 2008:

- Maintained and replaced/repared 2,143 permanent signs
- Maintained and replaced/repared 450 street name signs
- Provided traffic control at 1,069 special events
- Fabricated and installed approximately 1,400 temporary "No Parking" signs for the Harley-Davidson 105th Anniversary Celebration
- Completed the painting of 1,398 crosswalks and 1.84 million feet of pavement markings by the long-line crew

#### STREET LIGHTING

Street Lighting operates and maintains more than 76,000 street and alley lights and associated facilities to ensure Milwaukee's neighborhoods and roadways are safe and well-lit.

In total, Street Lighting is responsible for

nearly 1,300 miles of lighted streets in the City.

2008 accomplishments include:

#### • The Marquette Core

All Marquette Core projects were finished on time and with extremely tight schedules. Each new area required the installation of new lighting poles, fixtures, underground conduit and cabling.

The last of the Marquette installations included Clybourn from the Milwaukee River to 6th St., all interconnecting numbered streets between Plankinton and 6th, and St. Paul between 8th and 13th streets.

#### • Conversion of Ald. Murphy's District

Alderman Murphy's district has been upgraded by replacing existing underground cable (some from pre-WWII) and fixtures. This conversion will greatly reduce "dark areas" in that district.

#### • North 76th Street

The paving project on N. 76th from Clinton to County Line Road was one of the largest undertaken by Electrical Services and involved the installation of 265 wood poles to facilitate the reconstruction of the road.

Additionally, the crews removed the existing pole lines and installed thousands of feet of temporary overhead wiring to keep the lights on during construction.

#### • Kenwood Boulevard

This project, extending from Downer Avenue to Oakland Avenue, consisted of converting the area from the City's old series circuitry to multiple circuitry, installing new lighting poles and fixtures, and removing all temporary overhead wiring and wood poles, which were installed for the construction.

#### • Pabst City

Although Pabst City presented a challenge because of the intense political sensitivity of the project, Electrical Services crews continued to meet deadlines and were flexible with challenging demands, limitations and schedules.

Additional Street Lighting achievements include:

- Construction of a new substation in the new parking structure at Bellevue and Downer avenues

- The second conversion of a northside substation (Northside-D) located at 24th St. and Nash St. The project is 75 percent bored with approximately 20 percent of the new cable installed.

- Completion of lighting at Industrial Park, which included 31 new lighting poles and all associated cabling

- Removal of a pole-mounted service and all associated equipment, the setting a new service and reinstallation of all overhead wiring in one day to accommodate paving of Lovers Lane Road from Silver Spring Road to a northern point for the Harley-Davidson 105th Anniversary Celebration

- Completion of the installation of the street lighting at Terra Vista, a new subdivision on the City's far northwest side

- Completion of the paving project on Greenfield Ave. from Cesar Chavez Drive to Layton Blvd.

- Conversion of a series circuit to a multiple series on Adler from 84th to 92 street. This area was a huge source of underground circuit troubles and previously received

several citizen complaints.

- Completion of all associated work for the Clybourn Street Advanced Contract, which was part of the Marquette Interchange project

- Completion of additional electrical services for the Milwaukee Police Department camera project at 35th and Garfield, 35th and Greenfield, 35th and Glendale, and Chicago and Harbor Drive

Electrical Services continued to work on several paving projects in 2008. Electrical Services crews installed conduits, vaults, light poles, fixtures and cabling on more than 25 projects.

- The unit responded to more than 2,600 primary circuit troubles, repairing the majority of those problems within 24 hours.

- The unit also assisted Parking Services with the installation of an additional 75 automated parking meters (LUKEs). These units run off a battery during the day and are charged up at night from the street lighting circuitry.

#### DID YOU KNOW?...

LUKE multi-space parking meters run off a battery during the day and are charged up at night from the street lighting circuitry.



# MILWAUKEE WATER WORKS

Zeidler Municipal Building  
841 North Broadway, Room 409  
(414) 286-2830  
www.water.mpw.net  
watwebsec@milwaukee.gov



## Milwaukee Water Works

*Safe, Abundant Drinking Water.*

**Carrie M. Lewis, M.Sc.**, Superintendent (left)  
**Laura Daniels**, Administration and Projects Manager

### WHO WE ARE

The Milwaukee Water Works, a self-financing enterprise owned by the City of Milwaukee, provides pure, safe drinking water to 860,000 people in Milwaukee and 16 communities in southeastern Wisconsin. The utility is recognized nationally as a leader in providing high-quality water and monitoring water quality.

The Milwaukee Water Works disinfects Lake Michigan water with ozone and completes treatment with coagulation, settling, biologically active filtration, and a final disinfection with chloramines to maintain biological protection in the distribution system.

The utility is organized into several work units. Two **Water Treatment Plants** provide 24-hour-a-day drinking water treatment

and operational activities. **Water Quality** ensures all water quality regulations are met and exceeded. **Distribution activities** focus on scheduled preventive maintenance and repair of 1,964 miles of underground piping throughout Milwaukee and the utility's retail customer suburbs, and fire hydrant inspection. **Water Engineering** provides an internal resource, responsive to applied research needs and coordinates the Capital Improvements Program. **Business** includes accounting, customer service, billings and collections, marketing and public outreach. **Meter Services** ensures that water meters are operating properly and accurately represent water usage. **Technical Services** provides informational technology support.

On behalf of the City of Milwaukee, the utility manages the billing for the Milwaukee Municipal Services Bill, which in-

cludes charges and fees for drinking water, sewer treatment, sewer maintenance, solid waste collection, storm water management, and snow and ice removal.

The Milwaukee Water Works revenue reduces the tax rate for the City of Milwaukee. In 2008, the utility made an \$8.7 million Payment In Lieu Of Taxes to offset the City tax levy, reducing the tax rate by \$0.29 per thousand dollars of assessed valuation. The utility pays other city departments for services it uses and payment of employee benefits.

A modern, efficient, reliable water utility is one of the most important foundations of Milwaukee's quality of life. We count on the Milwaukee Water Works to deliver safe drinking water to protect public health, fight fires, and supply the water needs of business and industry. Investments in the

### KILBOURN RESERVOIR PARK OPENS

Kilbourn Reservoir Park, created with the removal of a 135-year-old underground drinking water reservoir, provides a green urban retreat in Milwaukee's Riverwest neighborhood after opening in October 2008.



To control erosion and storm water runoff, plantings of grass, shrubs, and perennials replaced the 3.63-acre paved top of the reservoir. Historic and native vegetation enhances storm water absorption and eliminates the need for high-maintenance mowing.



From left: Mayor Tom Barrett, Alderman Nik Kovac, Milwaukee Water Works Superintendent Carrie Lewis and Alderwoman Milele Coggs' assistant Akuwa Dantzler officially opened the renovated Kilbourn Reservoir Park on a rainy October day.

utility ensure that residents of Milwaukee and nearby suburbs have adequate supplies of high-quality water 365 days a year.

The Milwaukee Water Works provides drinking water to all or part of these communities: Brown Deer, Butler, Franklin, Greendale, Greenfield, Hales Corners, Menomonee Falls, Mequon, New Berlin, Shorewood, St. Francis, Thiensville, Wauwatosa, West Allis, and West Milwaukee.

## SAFE DRINKING WATER

Milwaukee is a national leader in producing high-quality water and monitoring water quality. The Milwaukee Water Works tests source and treated drinking water for more than 500 contaminants, while the U.S. Environmental Protection Agency (EPA) requires tests for only 90. The monitoring

### DID YOU KNOW?...

If laid end to end, Milwaukee's 2,000 miles of water mains would form a pipeline from Milwaukee to Ketchikan, Alaska.

is done as a precaution to ensure safe water, to collect baseline data for study, to help increase the understanding of how contaminants may affect public health, and to meet future regulations.

Milwaukee was one of the first utilities in the United States, starting in 2003, to test source and drinking water for endocrine-disrupting compounds (EDCs) and in 2006, to test for pharmaceuticals and personal care products (PPCPs). None have been found in Milwaukee drinking water. Neither testing nor disclosure of results is required under the Safe Drinking Water Act.

In 2008, the Associated Press cited Milwaukee as one of only 28 major utilities in the United States to test source and treated water for emerging contaminants such as EDCs and PPCPs. Milwaukee was the first U.S. utility to post the test results on the Internet.

## KILBOURN RESERVOIR PARK

A green urban retreat designed to control erosion and storm water runoff opened in Riverwest in October 2008. In a multi-year public involvement project, the Milwaukee Water Works and neighbors of the Kilbourn

Reservoir Park designed a plan to remove a 135-year-old water reservoir from the hill on North Avenue. The plan returned 3.63 acres of pavement to water-absorbing surface. Landscaping includes historic and native vegetation — trees, shrubs, and a mix of prairie grasses, sedges, and forbs. This enhances storm water absorption and eliminates the need for high-maintenance mowing.

## SUSTAINABILITY EFFORTS

As water use and revenues have been falling, the Milwaukee Water Works has been working to reduce and hold down costs and operate efficiently. The utility is increasing its use of technology and automation to improve efficiency. As an Environmental Protection Agency WaterSense partner and steward of Lake Michigan concerned with preserving our nation's water supply, the Milwaukee Water Works is implementing sustainable practices to conserve energy, fuel, and water.

- The Milwaukee Water Works joined a new Public Service Commission of Wisconsin program in 2008 to preserve the environment and protect water and energy resources. The utility optimizes operations for water efficiency, locates and fixes leaks

in infrastructure, tests meters regularly for accuracy, and provides customers with water efficiency information. The utility also agreed to shift water used for flushing activities away from rainy periods to dry days to assist the Milwaukee Metropolitan Sewerage District in reducing overflows into Lake Michigan, thereby helping protect the resource.

- During 2008, space was converted at both the Linnwood and Howard Avenue Water Treatment Plants to create renovated control rooms to accommodate new plant automation technology.

- Through operational innovation and public education about water waste, the utility has increased savings of treated water to 500 million gallons each year. In 2008, the Milwaukee Water Works received two American Water Works Association (AWWA) awards for water efficiency.

- Meters and Distribution personnel participated in the Department of Public Works' Eco-Driving Program, designed to reduce air pollution and save fuel. Meters personnel participated in Green Plumbers Training, learning about using water wisely and new plumbing parts and fixtures that save water.



A new activity book for children teaches kids where water comes from and introduces them to careers in the drinking water practice.

## AWARDS AND HONORS

Milwaukee Water Works received the following awards and honors in 2008:

- Operations and Maintenance staff at the Linnwood Water Treatment Plant received a 2008 American Water Works Association national efficiency award. They were recognized for inventing and sharing with other utilities a tank rinsing method that resolved a safety issue, conserves water and energy, and reduces time spent on a maintenance and inspection task.

The method will save about 424,000 gallons of treated water per year and reduce the time of the operation from six-to-10 days to three days.

- The Milwaukee Water Works received a state AWWA Utility Special Achievement Award for its multi-year public education campaign to reduce the number of illegally opened fire hydrants in the City of Milwaukee. The program saves millions of gallons of water and prevents injury and



Milwaukee Water Works regularly tests water meters to ensure accuracy. property damage.

- Employees of the Milwaukee Water Works received Special Recognition from

the 2008 City of Milwaukee Combined Giving Campaign for having increased their participation by 25.6 percent over the previous year.

## WATER WORKS IN THE NEWS



Heavy rainstorms caused storm water runoff and sewer overflows in early June 2008, causing rumors of drinking water contamination. Mayor Tom Barrett assured the public at a June 13 news conference that Milwaukee water is continually tested and there was no indication of any public health risk. Barrett said the Milwaukee Health Department reported its monitoring found no increase of illness in the community. Health Commissioner Bevan Baker and Milwaukee Water Works Superintendent Carrie Lewis provided supporting data at the news conference.



A national report in March cited Milwaukee as the only major water utility to test and post on the Internet results for testing its drinking water for pharmaceuticals. Milwaukee Water Works Superintendent Carrie Lewis told a news conference in March that Milwaukee water is free of pharmaceuticals. She was joined by Health Department Disease Control & Environmental Health Services Director Paul Biedryzcki and Public Works Commissioner Jeffrey Mantes.

# 2008 STATISTICS

## GENERAL INFORMATION ABOUT MILWAUKEE

Altitude (City datum).....	581.2 feet
City Area.....	96.1 square miles
Geographic Center.....	N. 42nd St. and W. North Ave.
Shoreline of Lake Michigan in City.....	10.2 miles
Incorporated by Wisconsin Charter.....	January 31, 1846

## GENERAL INFORMATION ABOUT MILWAUKEE'S INFRASTRUCTURE

Alleys, total.....	415 miles
Freeways.....	40.1 miles
Paved City Streets.....	1,424 miles
Unpaved City Streets.....	14 miles
Total city streets.....	1,438 miles
Miles of lighted streets.....	1,290.78 miles
City-maintained bridges.....	204
Movable bridges.....	21
Total bridge openings.....	14,617
Total sewer mileage in operation (Sanitary, storm and combined).....	2,442
Streets with interim lighting.....	81.96 miles
Unlit streets.....	51.26 miles
Street lighting units.....	67,709
Alley lighting units.....	8,925
Traffic control signals.....	738 intersections
Traffic control signs.....	110,082
Underground conduit.....	558.3 miles
Bus stops, signage maintained.....	4,246

## MILWAUKEE WATER WORKS

Howard Avenue treatment plant rated capacity .....	105 million gallons per day (MGD)
Linnwood treatment plant rated capacity.....	275 MGD
Average daily pumpage 2008.....	112 MGD
Total gallons pumped 2008.....	40 billion gallons
Total length of all water mains in service.....	1,964 miles
# of meters in service.....	161,977
# of fire hydrants in service.....	19,824
Population served.....	857,816
Area served.....	195 square miles
Average daily use per person.....	48 gallons
Cost of drinking water: 5.8 for one cent or 100 cubic feet (748 gallons) for \$1.27	
MWW payment to city in lieu of taxes (PILOT)....	\$8.7 million
Retail customers: (water, billing service, maintenance).....	
.....Franklin, Greenfield, Hales Corners, St. Francis, West Milwaukee (provides its own maintenance)	
Wholesale customers: (water only).....	Brown Deer, Butler, Greendale, portions of Menomonee Falls, Mequon, New Berlin, Thiensville; Milwaukee County Grounds facilities, Shorewood, Wauwatosa, West Allis

## SANITATION

Residential waste collected.....	184,600 tons
Other solid waste collected.....	93,980 tons
Recyclables collected.....	23,070 tons
Compostables collected.....	31,950 tons
Snowfall (Jan. - Dec.).....	106.6 inches
General snow plowings.....	9
Ice control operations.....	63
Service Requests.....	114,110

## FORESTRY

Trees on city streets.....	200,000
Shade trees planted.....	4,214
Trees pruned.....	36,673
Trees removed (all causes).....	3,098
Stumps removed.....	3,448
Boulevard medians & green spaces maintained.....	476 acres
Flowers produced, annuals.....	308,000
Signature beds installed.....	98
Signature bed square footage.....	158,000
Landscaped boulevard medians.....	121.8 miles
Green spaces maintained.....	59
Totlots maintained.....	57
City properties maintained.....	20
Service Requests.....	19,906

## INFRASTRUCTURE SERVICES — SEWER DESIGN AND MAINTENANCE

Sewers examined.....	146.3 miles
Sewers cleaned.....	596 miles
Replacement sewers.....	14.65 miles
Sewer lining.....	2.75 miles
Service calls answered.....	12,533

## FLEET SERVICES

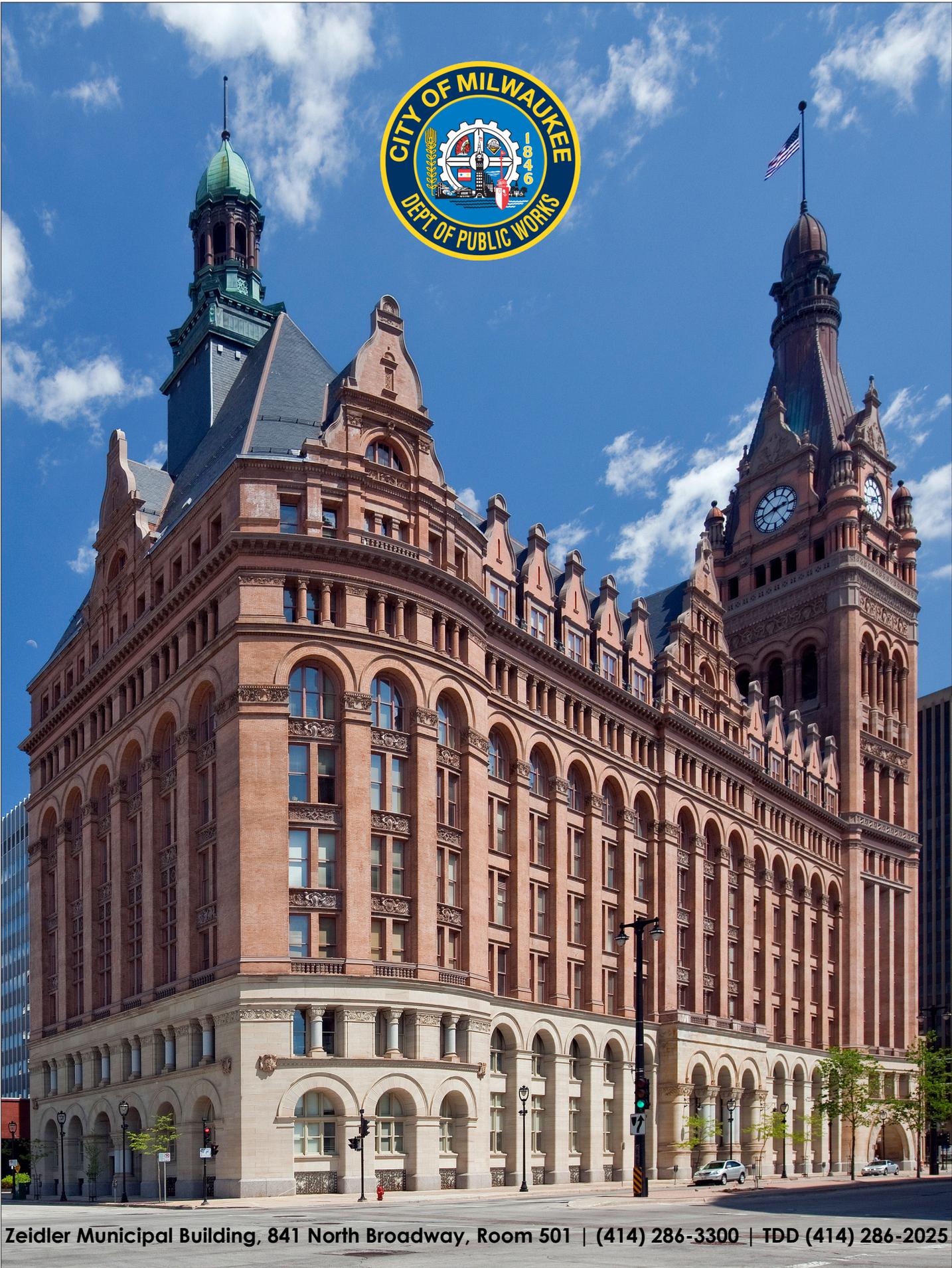
Repair Orders.....	33,446
Preventive Maintenance Inspections Performed.....	7,635
Tires Mounted.....	3,368
Field Service Calls, Tires.....	3,601
Field Service Calls, Other.....	9,559
Stockroom Activity.....	5,339,872

## Vehicles Serviced

Automobiles.....	101
Vans.....	182
Pickups.....	212
Police Units.....	782
Parking Enforcement.....	49
Packers, Rear Load.....	131
Packers, Front Load & Roll-off.....	21
Packers, Recycling.....	49
Tractors.....	58
Street Sweepers.....	21
Sewer cleaners, flushers, etc.....	33
Construction equipment.....	480
Trucks, all other.....	787
Compressors.....	80
Vehicle Total.....	2,993
Non-Automotive equipment.....	1,601
Total Serviced.....	4,594

## STREET AND BRIDGE MAINTENANCE

Bridges, inspected.....	149
Bridges, number of openings.....	14,617
Pavement seal coating (sq. yards).....	255,453
Asphalt surface by contract (tons).....	6,138
Asphalt patching (tons).....	14,900
Crack filling (square yards).....	406,373



**Zeidler Municipal Building, 841 North Broadway, Room 501 | (414) 286-3300 | TDD (414) 286-2025**