ANNUAL REPORT 2005

2005 MILWAUKEE COMMON COUNCIL

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City of Milwaukee

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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 2005

- Continue to develop and enhance Department of Public Works computer applications, including updating Infrastructure's database for monitoring streets, alleys and sewers.
- Proceed with the extension of West Canal Street from North 25th Street to Miller Park.
- Continue local street improvements to replace the Park East Freeway spur.
- Increase the efficiency of bulky garbage collection by collecting bulky garbage on scheduled regular garbage collection days and by limiting the type and amount of items collected.
- Begin construction activity for City Hall restoration and Traser Yard Relocation Projects.

2005 MESSAGE FROM THE COMMISSIONER: Year in Review

The Department of Public Works continued to make strives in every Division in 2005, in many instances making sure there was a positive impact on the environment and money saving efficiencies.

Jeffrey J. Mantes

The **Administrative Services Division** completed the installation of the new Avaya telephone system consisting of 3,100 new telephones at 30 locations that began in 2004. Total costs for the project was $1.5 million less than budget. In addition, the city entered into a 3-year contract with SBC for landline telephone services saving the City $500,000 over the term of the contract.

Staff also issued a bid for cellular telephone service and is currently working with a vendor to provide new cellular service to 1,400 employees in 2006. The DPW Technology Section is responsible for designing and supporting the City of Milwaukee Fiber Optic Network, which provides voice and data communications for all critical public health and safety agencies including Police, Fire, Water and Health. In addition, the COMON serves many other agencies including the Department of Public Works, which provides services to the public 24/7. In 2005, DPW entered into an agreement with DOA-ITMD to be the exclusive provider of network support services including those agencies in City Hall. This agreement will eliminate duplication of services, ensure reliability and a higher level of security and more cost effective network services.

In 2005 the DPW Call Center was expanded to receive calls for sewer maintenance including surface flooding and backwater complaints as well as for street signs and traffic controls. The Call Center now receives and processes calls for all DPW services including sanitation, forestry, street maintenance and street lighting. In 2005 the Call Center received 180,301 calls for service and information.

Buildings & Fleet supervised the beginning of the City Hall $70 million restoration project which began in earnest last fall. The work to restore the icon, completed in 1895, exemplifies City government's renewed commitment of economic growth and opportunity to the people of Milwaukee. The project offers many job opportunities for people of diverse backgrounds to learn new trade skills, help minority contractors, and to contribute to the general economic growth of our community.

The Facilities Development Section of DPW completed the installation of a dual purpose emergency generator. The generator provides power for essential functions of the City Hall Complex during a power outage and also has the capacity to generate power to offset peak demand charges the City would have to pay for energy usage during the day. The anticipated annual savings is $36,000.

As one of Mayor Barrett's four initiatives to control storm water runoff in 2005, patented roof drain flow restrictors were installed at eight City facilities. The unique devices are a part of a pilot program to reduce the peak levels of storm water run-off during heavy rains. These restrictors will allow rain water to temporarily form pools on the roof and allow a slower rate of draining over an extended period of time. The Facilities Section selected eight sites as viable candidates for the program. The sites included Milwaukee Police Department district stations, Milwaukee Fire Department engine houses, and DPW buildings.

The **Environmental Services Division** had several projects that had a healthy effect on the community and the budget. Project "Clean & Green" combined several neighborhood cleanups into a citywide seven-week spring cleanup. Clean and Green crews collected: 1,680 tons of refuse, (a 23% increase over the targeted cleanups in 2004), 7,160 small brush piles, 4,240 tires, 4,980 skid loader piles of debris.

The Division's Sanitation Section utilized a "salt brine street application" process that adds a cost effective strategy to DPW's anti-icing program, which is also good for the environment. Sanitation also devised a new improved DPW leaf collection procedures improved collections and reduced operating costs associated with labor and fuel. Savings were approximately $200,000.

The Environmental Services Division's Forestry Section received a U.S. Environmental Protection Agency Great Cities Grant of $121,500 for storm water parking which will retrofit a City-owned surface parking lot using Best Management Practice's to reduce runoff into the combined sewer system. The Division also received a Federal Appropriation in 2005 to spend $345,000 over the next two years for a program that converts Milwaukee Public Schools asphalt playgrounds into playable surfaces for children.

The Forestry Section received "rave reviews" from downtown businesses and residents on the Park East/McKinley Avenue/Water Street boulevard streetscaping project because of its comprehensive and colorful design. This design included a variety of trees, shrubs, perennials, and a modest

application of annuals to showcase an efficient low-maintenance design strategy.

Environmental Services staff participated and staffed Mayor Barrett's sustainability initiative, the Milwaukee Green Team that produced a list of recommendations on how to improve Milwaukee's economy, environment and quality of life for all residents.

Infrastructures Services Division completed the Marsupial Bridge, under the Holton Street Bridge, which connects two neighborhoods, Riverwest and the Brady Street area. The Marsupial Bridge received rave reviews for its design, which includes bicycle lanes and a walking path. Other projects completed by the Division include the successful design and deployment of the new street lighting master control system and the Wisconsin Avenue Streetscape program, from the Milwaukee River to Milwaukee Street. The Division also hired its first Bicycle & Pedestrian Coordinator, installed approximately 300 miles of new bike lanes citywide and printed 100,000 new bike route maps for distribution. Transportation staff worked with the DOT to developed successful traffic mitigation strategies for the Marquette Interchange.

A major portion of the Canal Street project from 6th Street to 25th was completed. The project represents an unprecedented example of intergovernmental and private business cooperation between the City of Milwaukee, the State of Wisconsin, the Department of Transportation, the Department of Natural Resources, Milwaukee Sewerage District, Menomonee Valley Partners, C.P. Rail and numerous others. The Hank Aaron Trail was also opened from 6th Street to 25th Street. The second portion of the project will extend to Miller Park and will be completed in spring 2006.

The Infrastructure Services' Environmental Services Section continued its storm water pollution abatement program which included an information and education campaign, sponsored a "Milwaukee Cleaner River Conference", developed a storm water web site, and developed a City wide erosion control program. Environmental Services Section helped to remap the floodplain boundaries in the Lincoln Creek area, implemented sewer separation project on Hawley Road, completed sewer projects on Canal Street and awarded approximately $25 million in sewer construction. Staff cleaned 8,111 catch basins, 14,249 storm inlets, and 384 miles of sanitary and combined sewers. They also inspected 17,750 inlet structures.

Milwaukee Water Works continued to assist business development by installing public water mains into remaining areas not previously served in the Menomonee Valley. As of July, 2005 MWW included the eastern third of New Berlin as a whole sale customer. Other accomplishments included renewing existing infrastructure to ensure water quality, such as increased usage of internal joint seals for large water main repairs, saving money by avoiding restoration costs and reduced material costs and limited disruption of traffic.

Also water mains were relocated to facilitate Marquette Interchange work, and filter valve operators were upgraded at Linnwood to improve filter operation. Another major accomplishment was the decommissioning of Kilbourn Reservoir from the distribution system and creating the Master Plan for landscaping the site which included neighborhood involvement.

An event that had a major impact on the Department of Public Works was the groundbreaking ceremony for the new Department of Public Works/Milwaukee Water Works Facility at the Tower Automotive site. The new facility provides the opportunity to bring four existing facilities of DPW and Milwaukee Water Works together at one site to cooperate and share resources. The new headquarters will be energy efficient and work efficient. Over 450 staff will work out of the 230,000 square foot building. DPW's Traser Street facility at 6th and Canal Street will be relocated so the site can be redeveloped into the Harley-Davidson Motor Company museum.

These are only a small portion of the accomplishments Department of Public Works' Divisions has made in 2005. The list is too long to enumerate. We have a Department that we can be proud of and one that will continue to work on behalf of the citizens and businesses of Milwaukee. Thank you for your continued hard work and dedication.

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

2005 DEPARTMENT OF PUBLIC WORKS BUDGET SUMMARY

	2003 Actual Expenditures	2004 Adopted Budget	2005 Adopted Budget	Change 2005 Adopted VS. 2004 Adopted
Personnel*				
FTEs – Operations & Maintenance	1745.17	1800.00	1729.16	–70.84
FTEs – Other	427.24	441.29	429.62	–11.67
Total Positions Authorized	**4063**	**3509**	**3145**	**–364**
Expenditures – General City Purposes				
Administrative Services	$4,645,595	$4,553,338	$4,610,376	$57,038
Infrastructure	22,752,888	22,476,509	21,482,735	–993,774
Operations	77,779,587	75,971,287	71,264,031	–4,707,256
Subtotal – General City Purposes	**$105,178,070**	**$103,001,134**	**$97,357,142**	**–$5,643,992**
Water Works				
Operating Budget	$59,163,207	$63,435,206	$65,242,241	$1,807,035
Capital Budget	11,713,229	22,620,000	18,790,000	–3,830,000
Total Water Works**	**$70,876,436**	**$86,055,206**	**$84,032,241**	**–$2,022,965**
Parking Budget				
Operating And Maintenance Budget	$24,609,432	$26,500,225	$26,174,804	–$325,421
Capital Budget	582,671	1,305,900	1,200,000	–105,900
Addition to Parking Reserves	0	0	0	0
Transfer to General Fund	8,300,000	12,000,000	15,210,000	3,210,000
Capital Improvements to be Financed				0
from Permanent Improvement				0
Reserve Fund – Parking	0	5,000,000	5,000,000	0
Total Parking Budget	**$33,492,103**	**$44,806,125**	**$47,584,804**	**$2,778,679**
Sewer Maintenance Fund				
Operating and Maintenance Budget	$21,673,855	$24,165,233	$31,823,316	$7,658,083
Capital Improvements	19,692,165	21,500,000	22,706,000	1,206,000
Total Sewer Fund Budget	**$41,366,020**	**$45,665,233**	**$54,529,316**	**$8,864,083**
Grand Total – Depart. of Public Works	**$250,912,629**	**$279,527,698**	**$283,503,503**	**$3,975,805**

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

**Does not include retained earnings

AUTOMATED PAYMENT CENTERS INTRODUCED AT THREE POLICE DISTRICT STATONS

FIRST NIGHT TIME PARKING PERMIT DISPENSING MACHINES IN THE COUNTRY

Alderman Joe Dudzik, Mayor Tom Barrett, DPW Administrative Services Director Dorinda Floyd, and Deputy Inspector Dale Schunk at the 6th District Police Station. Mayor Barrett said, "One of the goals of the City of Milwaukee is to make critical investments in technology to enhance the parking experience."

Need to buy a third quarter night parking permit? The City of Milwaukee has introduced "Automated Payment Centers" at three Police District Stations to purchase night parking permits and to pay for parking citations. Mayor Tom Barrett, Administrative Services Director Dorinda Floyd, Milwaukee Police Department Deputy Inspector Dale Schunk, and Alderman Joe Dudzik participated in a press conference on June 28th to discuss how the payment centers operate and their success.

Mayor Barrett said, "Not only are the machines more convenient for the public, but they also allow personnel at the police stations to be utilized more efficiently and effectively for police related matters." Deputy Inspector Schunk and Alderman Dudzik echoed his sentiment in their remarks.

The City Milwaukee sells over 190,000 night parking permits annually. The payment centers will make the purchase of night parking permits more convenient. The payment centers, which are currently located at Police Districts 2, 5, and 6 are available 24 hours a day, seven days a week. They take cash, check or credit card, and are in both English and Spanish. If a resident has purchased a permit in the last 12 months, the permit information will appear on the screen and all the resident has to do is update the information, if necessary. If a resident has never purchased a permit, he or she can apply at the payment center as well.

Automated payment machine in Police District 6.

The City has tested the payment centers over the last two quarters (since the first of the year until June) and sold over 11,100 permits in the second quarter. Eventually the City intends to sell all night parking permits through the payment centers. The City is ordering five more to be placed in the remaining Police District Stations as well as an additional payment center in Police Districts 5 and 6, where the most sales occur. The Parking Fund is financing the purchase of the automated payment centers.

The cost of a night parking permit will remain at $12 per quarter and $44 per year. There will be no fee to use the payment center to purchase a night parking permit. The payment centers also provide for the payment of parking citations. Cash, check, and credit card can be used. All transactions will be real time with no delay in processing your night parking permit application or your parking citation.

The payment centers will be able to process other types of payments, such as utility bills. The City is currently negotiating with WE Energies to process gas and electric bills through the payment center.

ADMINISTRATIVE SERVICES

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James P. Purko, *Director of Operations*
Thomas Miller, *Coordination Manager*
Dan Thomas, *Personnel Administrator*
Cecilia Gilbert, *Permits and Communications Manager*

The Administration 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 for the department including media relations, special event permits, DPW Information Center and the telecommunications infrastructure.

The division manages all parking-related activities including parking enforcement, parking information desk, city tow lot, towing contracts, citation processing contract, parking structures and lots and parking meters. In February 2000, parking enforcement and the parking information desk were transferred from the Milwaukee Police Department to the Department of Public Works.

In June 2005, staff from the Commissioner's office and Administrative Services (except the Call Center), were consolidated on the 5th Floor of the Ziedler Municipal Building. Previously, staff was located throughout the Municipal Building as well as next door in the 809 N. Broadway building.

MAJOR PROJECTS

The Department of Public Works Administrative Services Division coordinated planning and construction of public improvements for several major projects during 2005. These projects included Pier Wisconsin, the Third Ward Public Market, and the planned expansion of the Potawatomi Casino. The Division also coordinated the design of public infrastructure for a number of single family home subdivisions including Tara Vista, River Ridge, and Josey Heights.

Using $250,000 in Department of Natural Resources grant funds secured in 2003, along with City funds and contributions from two downtown Business Improvement Districts, the Division coordinated construction of a new riverwalk segment that connects the Historic Third Ward and downtown riverwalk systems. This new riverwalk segment was opened to the public in mid 2005. During 2005, DPW also oversaw the installation of over 150 new directional and informational signs along the riverwalk.

LANDFILLS. DPW is working with the Department of City Development to market several closed landfill sites. A developer has submitted an acceptable proposal for the Layton and Pennsylvania site and the sale of this property should be completed in 2006. Both the College Avenue North and College Avenue South properties have also seen preliminary development interest. DPW will continue actively monitoring groundwater and methane at all the City's landfill properties until those properties are sold.

The Hartung Quarry is nearing the end of its useful life as a fill site. During 2005, plans for reuse of the property were prepared through a joint planning effort led by Alderman Bohl. The surrounding neighborhood played a crucial role in this planning process which was also aided by the Departments of City Development and Public Works. The reuse plan advocates the development of a park with some new single family housing to be constructed around the site's perimeter.

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 citation processing and collections. During 2005, 135 formal contracts were awarded totaling over $45 million. This figure does not include the $60 million contract awarded in 2005 for restoration of City Hall. Through its contracts, DPW leverages employment opportunities for city residents who live within the Community Development Block Grant boundaries. This initiative is known as the Residents Preference Program. The Department requires that at least 25% of all hours worked on individual City contracts

be allocated to unemployed residents of the target area. The Department partners with Esperanza Unida, the Milwaukee Urban League, and Big Step to assist contractors in locating eligible resident workers. All resident workers must be certified by the City prior to a contractor receiving credit for their hours worked. DPW maintains a list of all certified resident workers and reports annually to the Common Council on the success of the program. For the 2005 contracts that were closed out as of March 1, 2006, resident participation averaged 34% of all contract hours worked.

DPW requires that contractors use Emerging Business Enterprises (EBEs) in their contracts. EBEs are certified by the City and are mandated by ordinance to be involved in at least 18% of all work contracted by the Department. In 2005, the overall EBE participation requirement for DPW contracts was 23.2% or almost 30% higher than the established 18% minimum requirement. It also represents the Department's best performance in this area since the EBE program inception.

As part of its contracting activities the Department actively monitors all public works contracts for compliance with the Prevailing Wage and Livable Wage ordinances.

During 2005, the Department continued its efforts to place public works contract bidding procedures on line. Contractors and other interested parties can now find information on the DPW web site about projects coming up for bid, which contractors have taken out plans on various projects, rules and procedures for the EBE and Residents Preference programs, the results of recent bid openings, monthly EBE performance reports, a map of the Residents Preference Program target area, and various contracting forms.

FINANCE AND PLANNING

The Administrative Services Division is responsible for coordinating the operating and capital budgets for the department as well as several enterprise funds, including Water Works, Sewer Maintenance Fund and the Parking Fund. The division is also responsible for tracking and monitoring revenues and expenditures on a monthly basis.

In the 2005 budget, the department's operating budget (excluding enterprise funds) totaled $97.3 million and the capital budget totaled $46.8 million. Revenues were projected to total $31.7 million.

In 2005, the Department of Public Works was challenged by significant increases in fuel prices as well as greater than average snowfall. The department spent $1.4 million more for fuel and $3.1 million more on snow and ice control. As a result, the department needed $2.1 million from the city's contingent fund to balance its year-end expenditures. However, the department generated $37.3 million in general City revenue, $5.5 million more than the Comptroller's Office 2005 estimate. This excess revenue is diverted to the city's Tax Stabilization Fund. In fact, over the past four years, the department has contributed over $18.8 million to the Fund in excess revenue and expenditure savings.

The Finance and Planning Section is also responsible for paying invoices and billing City agencies as well as external agencies for services performed by the department. In 2005, this section processed 31,858 vouchers totaling over $128 million and produced 4,428 invoices and interdepartmental requisitions totaling over $49 million.

PERSONNEL/PAYROLL/SAFETY. In 2005, the number of disciplinary actions was up 20% from 2004, with written warnings increasing by 32%. Written warnings are used to correct behavior before it becomes a bigger problem. During 2005, the Department completed the conversion of disciplinary actions to electronic files. The files are part of the time entry system. Many DPW employees transfer between divisions on a regular basis and having information available electronically will enable managers to easily retrieve an employee's disciplinary history. In addition, all future disciplinary actions are created using the time entry system.

In 2005, the number of grievances was unchanged from 2004. In 2005 a grievance tracking system was developed. This system will be able to track a variety of data and will aid in making the process more efficient.

The number of recordable injuries was down 7% in 2005. The number of lost work days was also down 8.5%. The decrease in the number of lost workdays is attributable, for the most part, to the Infrastructure Services Division. The Safety staff will continue to provide training, education and enforcement of safe work practices to insure that work injuries are minimized throughout the department.

DPW CALL CENTER. The Department of Public Works 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 286-8282, citizens can talk to customer service representatives who will process requests for services, provide information and respond to citizen complaints for sanitation, forestry, street maintenance and street lighting services. During 2005, calls for service for sewer maintenance, street signs and traffic signals were transferred to the call center.

DPW service requests are entered electronically using an application developed by staff. The application contains all relevant information required to deliver the requested service. Once received, the service request is sent electronically to the field district offices to expedite processing. Because of the large volume of sanitation-related service requests processed each day, an enhanced application was developed whereby each service request is bar coded to track disposition and response times. For all service requests, the Call Center application is used to track the number and type of request, monitor response times, and schedule and route staff to deliver services in the most cost efficient and effective manner.

In 2005, the Call Center received 172,445 calls and requests for services, a decrease of 20% from 2004. The decrease in calls is due to a change in how Sanitation collects regular garbage and special pick ups. In 2005, Sanitation began taking additional items up to four cubic yards as part of the weekly garbage collection. In addition, the city no longer collects appliances and limits brush collection to four cubic yards between the months of April

and November. This has had an impact on the number of calls to the DPW Call Center.

Of the total calls received over 124,400, or 72%, were service requests, of which 92% were for sanitation-related services. In addition, the Call Center also processes service requests received online at www.dpwworks.mpw.net. In 2005, over 7,800 online requests were received, similar to 2004.

SPECIAL EVENT PERMITS. In 2005, the Special Events Office processed 1,062 permits issued for the public-right-way, a slight increase over 2004 of 1,038 permits. There were increases in permits for block parties, festivals, filming, walks/runs and etc. The number of parking events requiring permits also increased. Students attending theatrical productions accounted for some of this increase.

Theatrical productions have special parking needs for loading and unloading of equipment. Gala events like to provide valet parking for their patrons. Large conventions need to establish temporary bus shuttle stops to get their attendees around the city for various events, and sometimes streets need to be "signed" to accommodate parking needs for very large events in the neighborhoods. And some streets need to be closed to accommodate the farmers markets on the East Side and downtown Milwaukee. All of these activities have economic impacts in the business districts and neighborhoods; they promote the city's cultural diversity and showcase the architecture of the city in some instances.

Public awareness of the services that are provided by the Department of Public Works has increased and more organizations are utilizing these services. In 2005, there were 11 more block parties, 10 more parades/processions and 10 more parking events.

The Special Events office also provides assistance for festivals held at the Henry Maier festival grounds. This includes making sure parking restrictions are posted on nearby streets to enhance the shuttle service and to ease the flow of traffic in and out of the festival grounds. The Special Events office is part of the Technical Task Force for Summerfest and works on the Traffic Plan for the festival season. The Task Force also includes the Historic Third Ward, Lakeshore State Park, the Harbor Commission and businesses located in the Historic Third Ward.

The coordination of all Special Event permits, especially the larger ones, includes the Milwaukee Police Department's Planning & Operations Division, the Common Council, Milwaukee County Transit System, DPW Traffic and Parking Sections, and the Special Events Office. Sometimes the Milwaukee County Sheriff's Department and the Milwaukee Fire Department are a part of the coordination effort. Aspects involved in the public right-of-way include:

- Coordination of DPW services, such as street construction and maintenance, and Sanitation services, and street sweeping after large events;
- Barricading and occupying a city street or sidewalk;
- Traffic and or parking restrictions for an event, including the installation of "Temporary No Parking" signs;
- Hooding of parking meters;
- Providing use of dumpsters, garbage carts and snow fencing; and
- Police escort and traffic control (event security is not provided by Milwaukee Police Department).

Although special event fees are charged for various services, the fees in no way cover the cost of implementing the special event. Several hours are spent planning events, installing signs, hooding meters, delivering barricades, and maintaining the safety of the events by the Milwaukee Police Department.

TECHNOLOGICAL 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 citywide telecommunications infrastructure.

SERVER/DESKTOP COMPUTING. This team performs software and hardware installation, administration, support and maintenance for server hardware and operating systems. Support is provided for applications including the department-wide electronic calendar, the DPW open source email system, new client server applications for 286-CITY, work management systems, public works' permits, DPW invoice/accounts receivable system and PeopleSoft. In addition, the technology support section is responsible for installation of numerous patches in response to multiple virus attacks.

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. With the exception of the database itself, all the software used to develop and support DPW's 44 production applications is "Open Source" or free. The application servers are low cost powerful Intel computers that run the Linux operating system that is also open source. In addition to small code revisions and supporting all the users of the 44 applications, the application development team has developed many new reports, dozens of database field additions, SQL streamlining, modular code libraries, and other algorithm enhancements to provide improvements to the end user experience. The most widely used application is CityTime which flawlessly transferred almost 2.5 million time card entries in 2005 to the City payroll system. Also, the Call Center has been expanded to include all service requests for sewer maintenance and traffic signs and signals.

In 2005, the technology section developed several new applications. An application was developed for Forestry to track plant inventory, billing, and invoicing at the Franklin nursery. Also, Sanitation has a new ScaleHouse application. The old system was not reliable and vendor support was ineffective. The system weighs garbage and recycling trucks from the city, as well as private companies. Vehicles are weighed in and out to create a 'net' weight at the three scale yards. The data gathered by the system is used for billing and monitoring purposes.

A framework of classes has been developed that allow for greater productivity by the application development team. Many common tasks such as making connections to servers, error handlers, monitoring, data retrieval and other database transactions, and more have been included in a set of libraries available to all applications. These libraries also allow for applications to be developed with little or no server code. The result is greater system reliability and less disruption to end users. All new applications are using these libraries, and some old applications will incorporate some of these features. These classes shift a lot of work from the server to the client. Client PC's have excess computing capacity and by shifting processes to them we are able to increase application performance.

In 2004, the Comptroller's Office audited the databases and applications that Infrastructure uses to manage the City infrastructure assets including: streets and alleys, bridges, sewers and water mains. These databases had been developed independently over many years based on functional needs within the respective operation responsible for the facility. Many of these databases contain some duplicate information, while others may have functionality missing or no longer needed. The applications and databases are utilitarian to match the needs of Infrastructure. In 2005, the conversion began for the Infrastructure Information Management System. Project programming, boxcars and unit prices, mailing lists, and special assessment modules are complete and in production. The aldermanic service request tracking system, a special privileges database, construction, and estimating modules are planned for 2006. When complete, all modules will interact in a unified system sharing common data sets and functionality.

TELECOMMUNICATION SERVICES. The Department of Public Works solicited and received bids for local, long distance and other telecommunication services in 2005. This multi-year contract will save $150,000 annually over the life of the contract. A bid for wireless telecommunication services will be issued in 2006.

The Department of Public Works began working with WiscNet and other parties in 2003 to facilitate the establishment of UW-Milwaukee as a node on Internet2. In 2005 the effort continued with development of the UWM connection to BOREAS-Net (Broadband Optical Research Education & Sciences Network). BOREAS-Net is a multi-state consortium of leading research institutions in the upper Midwest. The purpose of the project is to build and operate a Regional Optical Network (RON) to service the advanced production and experimental network requirements of the research and educational institutions in the upper Midwest. The recently completed remodeling of the 5th floor of the Municipal Building has provided additional rack space and enhanced environmental improvements that would enable the City to accommodate a WiscNet/BOREAS-Net POP at the DPW-NOC (Network Operations Center). Also, there is fiber in place and currently being used to provide the City of Milwaukee and Marquette University access to the Internet through WiscNet and could be made available for the use of the UWM BOREAS-Net node. In addition to Marquette University, MATC and Milwaukee Public Television have connectivity to the Municipal Building. In 2005, Common Council Resolution 050178 authorized DPW to extend network connectivity to Pier Wisconsin, VISIT Milwaukee and Milwaukee World Festival Inc.

In 2005, The Department of Administration-Information Technology Management Division and the DPW-TSS developed an agreement transferring all responsibility for the design, acquisition, installation, maintenance, documentation, management and support of network equipment and services to DPW. In conjunction with DOA-ITMD, the Department of Public Works will develop a citywide plan for network services, management, operations, and policies.

DPW-TSS provides installation, maintenance and support for a wide variety of telecommunication equipment. Most importantly, DPW-TSS currently provides support for the network infrastructure for the Police, Fire and Water departments. DPW-TSS provides on-site response for problems that impact health and safety 24 hours a day, 365 days a year. While information technology focuses primarily on applications and the associated hardware, telecommunication services and the deployment of the City's network equipment, fiber and copper infrastructure involves a great deal more. Beside "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 Water and Sewer System Control and Data Analysis Systems.

Development continued in 2005 on a variety of telecommunication projects, including:

- Cable Book Inventory Management System (completed)
- Parking payment kiosks (completed)
- Street lighting SCADA
- Traffic control SCADA
- Summerfest Shuttle Parking Management System
- Panic/ Holdup alarm system in the City Hall complex (completed)
- Installation of two new firewalls for Milwaukee Water Works (completed)
- Installation of router in City Hall basement for expansion & redundancy of City Hall network
- Installation of network for City Clerk including wireless access in Committee rooms
- Provided network connectivity to Milwaukee County for City/County website and mainframe data center consolidation

Various construction projects by other governmental entities continued to challenge DPW's ability to maintain telecommunication services. Initiated in 2003, the Marquette Interchange Project activities are scheduled to be completed in 2008. In conjunction with communication staff in the Operations Division, communication relocation projects required by the Marquette Interchange reconstruction and other projects are providing opportunities to add more redundancy to the fiber optic network. In February 2005, the Milwaukee Metropolitan Sewerage District contacted the City regarding sewer designs at 15 sites located in the City of Milwaukee. The designs impact most of the river crossings in downtown Milwaukee posing a substantial utility interference with the proposed sewer structures. DPW is working with MMSD to minimize disruption to public safety communication services.

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 Parking Fund's activities include owning and 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. Revenues received in 2005 from parking structures and lots totaled over $6.6 million.

Four staff manages 6,535 parking meters citywide, 6,185 on-street and 350 off-street meters. In 2005, nearly $4.1 million was generated in meter revenue. Parking meter staff is also responsible for hooding, installing and removing meters. This activity generated nearly $134,900 in 2005.

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 2005, nearly $2.7 million was generated from the sale of quarterly and annual night parking permits.

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 2005, 26,799 vehicles were towed. Of this amount, 3,137 vehicles were abandoned and 23,662 vehicles were illegally parked. In addition, of the vehicles towed 43% were unclaimed causing the City to dispose of the vehicles. This was a significant decline from the previous year's level of 50%. Of the vehicles disposed, the City recycled 77% and sold 23%. Revenue generated from towing, storage and disposal of vehicles totaled nearly $5.0 million in 2005, similar to 2004. This reflects higher prices for scrap metal, higher retrieval rates of vehicles and billing individuals who failed to retrieve their vehicles for towing and storages.

Parking enforcement operations along with the Parking Information Desk are housed at 123 N. 25th Street in the Menomonee Valley. Parking enforcement operations includes 64 parking checkers. The goal of parking enforcement is to deploy parking checkers to provide the most comprehensive and consistent parking enforcement Citywide. In addition, parking checkers are deployed 24/7/365 and are assigned to special patrols, including abandoned vehicles, citizen complaints and Aldermanic Service Requests. In 2005, parking checkers issued 800,755 parking citations, a decrease of 18% from 2004. Most of this decrease is attributable to a delay in hiring new parking enforcement officers due to the expiration of the eligible list and an issuance of a new exam. Police-issued parking citations continued to decline in 2005 by over 17%. The Police have reallocated their resources to concentrate more on crime-fighting activities. In addition, in 2005 the average response time to a parking complaint totaled 1 hour and 23 minutes, higher than the goal of 1 hour. The higher response time is a reflection of the large number of vacancies in parking enforcement officers in 2005.

Parking Information Desk operates 24/7/365 and includes 21 communication assistants. Parking Information Desk personnel receive parking complaints, process night parking permissions, provide general parking information and dispatch tow operators. In 2005, the Parking Information Desk received 182,487 calls, of which 43,927 calls were parking complaints from citizens and 138,560 calls were for night parking permissions. In addition, DPW developed an online night parking permissions request form to make night parking permissions even more convenient for the public. This form can be accessed through www.parking.mpw.net. In 2005, over 29,200 permissions were requested online, an increase of over 9,500, or 48% over 2004. Further, Parking Information Desk personnel also dispatched 34,097 tows in 2005.

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. They may use the pay-by-mail service, of which 31% utilized this service in 2005, visit the three Violations Bureau locations of which 31% utilized this service, or utilized drop boxes which are located in each of the seven Police District Stations, the Avenues West Police Substation and City Hall. In 2002, the City offered two more convenient ways to pay parking citations, which are available to the public 24/7. Citizens can pay by phone through the Interactive Voice Response (IVR) system by calling the Violations Bureau at 344-0840 at any time. Over 5% of the citations were paid using this method of payment. In addition, citizens can pay parking citations online by accessing www.parking.mpw.net. In 2005, 16% of the parking citations were paid online. With the installation of the kiosks in 2005, over 2.5% of parking citations were paid through the kiosks. And lastly, over 14% of all parking citations were paid through the Tax Refund Intercept Program.

The automated citation processing/cash management system tracks citation issuance and payments and has improved the City's ability to pursue overdue and delinquent citations and to better manage City parking resources. In 2002, the City began utilizing the Tax Refund Intercept Program implemented by the State of Wisconsin Department of Revenue to intercept state income tax returns for those individuals that had outstanding parking citations. Currently, persons with unpaid parking citation balances exceeding $75 are registered with the Department of Revenue. In 2005, over $1.3 million in outstanding parking citations was collected through this program.

Although the Tax Refund Intercept Program has been successful in collecting citations that would have otherwise gone unpaid, the Department of Revenue requirements for a social security number or driver's license number to certify the debt have reduced certifications to about 47% of those eligible. The City is working with the State Department of Transportation to allow the City to obtain driver's license number information as part of the vehicle registration information. DPW anticipates this will improve the certification rate to 90% and significantly increase collections of unpaid parking citations. It is anticipated this will be implemented in 2006.

The Violations Bureau processed over 913,000 parking citations in 2005. The amount of revenue collected totaled $20.1 million. Of that amount, over $6.8 million was collected from past due

violations. This amount is reflective of the Tax Refund Intercept Program. It appears that the clearance rate of citations issued in 2005 is expected to resemble the clearance rates of prior years of nearly 80%.

PARKING CITATION ADJUDICATION. In 2003, the Department of Public Works, City Attorney's Office and the Municipal Court worked cooperatively to develop and implement a number of strategies to deal with the large number of parking scofflaws. These strategies include the Municipal Court obtaining jurisdiction for adjudication and enhanced collection efforts of outstanding parking citations. One of these strategies includes utilizing the Notice of Appearance form to address parking scofflaws who schedule an appointment with the Citation Review Manager and miss the appointment. Over 50% of parking scofflaws who schedule an appointment miss the first appointment. In order to reschedule an appointment, the scofflaw must go to the Violations Bureau or the Tow Lot to sign a Notice of Appearance form. This form includes a Municipal Court date and a summary of all outstanding parking citations. Failure to appear in Court will result in a default judgment and may include a suspension of vehicle registration or a lien on assets. In 2005, 4,139 notices were issued.

Another strategy implemented in late 2003 included the utilization of the Summons and Complaint form. The purpose of this form is to address parking scofflaws whose vehicles have been towed by the City and retrieved by the owners. When the scofflaw retrieves his/her vehicle at the Tow Lot and there are eligible outstanding parking citations, a summons and complaint will be personally served to the parking scofflaw. This form will include a Municipal Court date and a summary of all outstanding parking citations. Failure to appear in Court will result in a default judgment and may include a suspension of vehicle registration or a lien on assets. In 2005, 1,102 summons were issued for 14,807 citations valued over $612,000.

In 2005, the Municipal Court judges issued an order requiring the City Attorney to prevent the filing of any actions in the Municipal Court which contained parking citations that were more than two years old unless the citations had been submitted to the DOT for registration holds. Because it is cost prohibitive for the City to place a registration hold on every outstanding citation (the City requests over 100,000 holds annually at a cost of $5 per hold), the City is discussing with the Wisconsin Department of Transportation to allow the City to bundle all overdue citations under one registration hold. Currently, the City places a registration hold on the oldest citation. Placing a vehicle registration hold on any outstanding parking citation extends the statute of limitations to adjudicate a citation from 2 years to 6 years. As a result, all outstanding parking citations will have to be paid before a vehicle registration hold is released. DPW is hopeful that this change can be implemented in 2006.

In 2005 the Outstanding Debt Task Force was created to assess the level of outstanding debt owed to the City of Milwaukee and make recommendations relating to its collection. Parking citations comprise the largest amount of outstanding debt owed to the City. One of the recommendations of the Task Force to encourage payment of outstanding parking citations is to seek legislation that would allow municipalities to ticket and tow or boot any legally parked vehicle with three or more outstanding parking citations and require the citations to be paid or scheduled to be adjudicated prior to releasing the vehicle. Currently, if a vehicle with outstanding citations is legally parked, the City cannot tow or boot the vehicle for unpaid citations. DPW estimates that there are over 98,500 violators with three or more open citations valued at $30.6 million. DPW will work with Intergovernmental Relations to prepare and lobby for such legislation in 2006.

Another recommendation of the Task Force to encourage timely payment of outstanding parking citations is to seek legislation establishing a time frame to adjudicate parking citations for cities of the first class. The legislation would require a parking citation to be paid, adjudicated or arranged to be adjudicated within 180 days after issuance. For a violator who does not do any of these things, the legislation would also allow the Municipal Court to enter a default judgment without requiring signed acceptance or responsibility by the vehicle owner or violator. DPW will work with Intergovernmental Relations to pursue this legislation in 2006.

PARKING TECHNOLOGY. In 2004 the Department of Public Works negotiated an amendment to the parking citation processing contract to require the development and installation of kiosks that sell and dispense quarterly and annual night parking permits and accept payments for parking citations. Kiosks have been installed in Police District Stations 2 (two), 3, 5 (two), 6 (two) and 7. In 2007 a kiosk will be installed in District 4. The kiosks accept cash, check, or credit cards and electronically dispense the permits. The kiosks are in English and Spanish and are accessible 24/7. Because the purchaser of a permit is required to enter all the permit data or update the data when necessary, the night parking permit data is more timely and the City no longer requires its contractor to hand-enter this data after a permit is sold. In addition, the kiosks have significantly reduced the workload for the Milwaukee Police Department staff who previously sold night parking permits. In 2005, nearly 28,700 permits were sold through the kiosks totaling over $426,500. It is anticipated that by the end of 2006, most night parking permits will be sold through the kiosks. Parking citations can also be paid through the kiosks and are processed in real time. In 2005, 7,615 citations were paid totaling $183,600. In addition, the kiosks began receiving payment of WE Energy bills in July 2005. Since that time, 862 bills have been paid at the kiosks. The City receives $0.50 for each transaction processed.

In 2005, two AutoVu/AutoFind units for mobile license plate recognition were purchased for Parking Enforcement. This equipment reads license plates from a moving vehicle and provides an efficient and effective means to automate detection of violators for time zones, night parking permits, stolen vehicles and scofflaws.

DPW ADMINISTRATIVE SERVICES' TECHNOLOGY SUPPORT SERVICES SECTION REPLACES 20-YEAR OLD TELEPHONE SYSTEM

Everyone in City Government knows there is a new phone system. The City's telephone system includes approximately 5,700 telephones for nearly 8,200 employees at over 150 locations. The new phone system project included training on the use of the Avaya telephones for several thousand municipal employees. Employees have enthusiastically embraced the new phones and find it has been very helpful in their communication with each other and with the general public. Some of the most popular features include: caller ID, call logging, speed dialing and the digital screens on the more advanced phones. There are several stories that can be told about the City telephone replacement.

The old telephone room took up considerable more space.

The best story is about the people — the teamwork between DPW telephone, electrical, cabling, networking men and women in different sections and across the Administration and Operations Division. The replacement was a complicated undertaking that required an enormous effort by many dedicated DPW employees. The installation team from DPW included, Clyde Battle, Terrence A. Brehmer, Angel Fontanez, Jr., MICHAEL J. GERARD, Mark J. Ingles, Lance Liska, Kevin Michaels, Robert Morales, Michael D. Panlener, Bryan Pawlak, Walter Polk, David Pritchett, KENNETH R. WALKER, DEBORAH K. WILICHOWSKI, April D. Wilks, and Gerard Froh. A few of these PEOPLE worked 16 hour days and 60 plus hour weeks for months on end to get their part of the job done on time to minimize the impact on the telephone users. The training and installation assistance provided by Avaya and the invaluable contributions of "Telephone Coordinators" as well as the patience of City employees led to the most successful technology project in City government in recent memory. Phone service was virtually uninterrupted in spite of the fact that DPW supported the old and the new phone systems and two voice mail systems simultaneously.

Under budget is another good story. Initially budgeted in 2002 at $5,000,000, the project has been completed under budget by $1,000,000. This was achieved even after the project was expanded to include 500 new Avaya telephones for the 5 remote Health Department sites. The Common Council recently authorized us to spend $400,000 to upgrade the Police Department phone system to the
current Avaya technology and to spend $100,000 to upgrade the phone systems in Fire Stations. How did we save so much money? Part of it is luck and timing in the global "market" for telephone systems. The rest of the savings are because dedicated DPW staff did much of the work instead of consultants and contractors. Instead of buying software and hardware for our new voice mail, conference bridge and interactive voice response (IVR) systems, DPW built them from Open Source (free) software. That effort alone saved $250,000 and will have ongoing savings by avoiding annual proprietary licensing fees.

Good for the future is another story. When we turned off the old ROLM telephone system in the City Hall complex the power consumption dropped from 400 to 70 amps. An 82 percent reduction in electrical consumption for the telephone system. There will also be a corresponding savings in air-conditioning required for the "telephone room". Actually it is more like a telephone corner not a telephone room. The ROLM cabinets were 48 inches wide and 30 inches deep, there were 3 cabinets bolted together in a row and there were 5 rows of these cabinets for a total of 15 cabinets. The new equipment only takes up only 4 19 inch wide racks less than 1/10th the space of the ROLM equipment. The new telephone system and open source software enable the computer telephony integration needed to build the Mayor's "One Number to Call" initiative 286-CITY and integration with the DPW Call Center application.

The new "telephone corner".

Thanks to Gerry Froh, Network Planning Manager, Bryan Pawlak, Electrical Services Supervisor II, and Kenneth R. Walker, Telecommunications Analyst-Project Leader, for contributing and writing the article on the new telephone system.

OPERATIONS DIVISION

Zeidler Municipal Building
841 North Broadway, Room 516
[414] 286-8333

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

Venu J. Gupta, *Buildings & Fleet Superintendent*

Preston D. Cole, *Environmental Services Superintendent*

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 to managers of each operating section. Support functions include monitoring the facilities hotline to quickly dispatch service requests for City buildings, maintaining the City's keycard access database, responding to solid waste fee inquiries and environmental code citations and generating over $1,000,000 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 AND 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 and 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 that will allow customers to work more efficiently.

Buildings & Fleet has undergone many changes over the past several years. Methods and processes have been streamlined and the application of technology has created a more efficient and effective section. Our future is the vast array of talent, known as human resources (our employees), that on a day-to-day basis does the work and represents the front line teamwork of our services and projects.

ENVIRONMENTAL SERVICES

The merged Forestry and Sanitation sections continue to explore new opportunities for improved efficiencies resulting in a cost effective Environmental Services. These include the areas of 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. Our goal is to make Milwaukee cleaner and greener.

OPERATIONS DIVISION – BUILDINGS AND FLEET

Zeidler Municipal Building
841 North Broadway, Room 516
[414] 286-8333

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

Gary Kulwicki, *Facilities Manager*

The Buildings & Fleet Services is the classic example of an internal service agency providing core services to city departments and agencies. The Division is a composite of licensed professionals, skilled trades, certified mechanics and technicians, experienced fleet drivers, communication operations, dispatchers, and experienced office staff.

Our future is the vast array of talent that on a day to day basis does the work and represents the front line teamwork of projects and services. The Division has undergone a multitude of staffing changes throughout the past several years. A vast number of methods and processes have been streamlined and the application of technology has created a more efficient and effective Section. Staff works hard in developing relationships

Highlights for this 2005 report include the construction of a new $24 million facility, the start of the $60 million City Hall Restoration, and the installation of new generator system controls and consolidation of operating inventories.

FACILITIES DEVELOPMENT & MANAGEMENT

The Department of Public Works, Operations Division, Buildings & Fleet Services, Facilities Development and Management (FDM) Unit provides construction and maintenance services to all city facilities, excluding those of the Milwaukee Public Library. In 2005, FDM had an operations and maintenance budget of $9.3 million and capital appropriation off $9.0 million.

The Unit is responsible for providing facilities that are functional, comfortable, clean, in good condition, and provide a reasonable level of physical security. Additionally, the Unit, through the efforts of its highly dedicated staff, aims to maintain space that is pleasing and efficient to use. The Unit is responsible for the management, repairs, and maintenance of 108 Department Public Works facilities with over two million feet of space. It also provides project management, consulting services, inspections, and evaluations for the repair, maintenance, and renovation of the City's building infrastructure. The staff of skilled craftsmen, mechanics, and professionals provides these services to City agencies and departments' offices, field headquarters, shops, and storage facilities that include over 200 buildings.

MISSION STATEMENT

The Buildings and Fleet Division will constantly strive to give prompt, competitive, quality services to meet our customers' need through a diversified workforce of skilled, experienced, and professional employees in communication, buildings, and fleet operations.

THE ARCHITECTURAL DESIGN UNIT. The Architectural Design Unit's team of professionals leads DPW's development of new buildings, additions and alterations to existing facilities for the City. They are involved from concept through construction, creating the design, producing contract drawings and specifications, and administering construction, in addition to overseeing architectural consulting firms on projects. This unit also provides architectural technical support for the development of budgets and facility utilization studies, and assists in operations and maintenance activities and solicits RFP's "Request for Proposals" for various professional services.

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.

New Department of Public Works
Field Headquarters Facility
3850 North 35th Street

The newly completed DPW Field Headquarters Facility project has positively impacted two areas of the City of Milwaukee. The relocation of the City's existing facility out of the Menomonee Valley opened this valuable site for private development, and provided the opportunity for the City to begin the redevelopment of a large former industrial site with the building of the new DPW Facility in a second area of the City. In 2004, Harley Davidson Motor Company indicated an interest in acquiring the 10-acre "Traser Yard" site for a Museum complex. The City took this opportunity to evaluate other similar facilities throughout the City. The new facility combined operations from 7 sites throughout the City on the new 24-acre site.

The new facility allowed the City to holistically organize the Repair and Maintenance Divisions of Streets & Bridges, Sewer, Water, Facilities and the Field Engineers. A team of managers and staff assisted the designers to identify their common functions. Product and inventory flows were also identified as part of this process. The consolidation of similar operations saved the City in the construction of additional shop areas and infrastructure. The City is projecting total operational savings of $1,330,000 annually.

The City sees the new facility as a key component in the redevelopment of the 148-acre former "brown field" industrial site. The 230,000 square foot building was constructed on the front of the property to provide a handsome façade to the street while the large yard behind the building provides the necessary inventory and staging area for the 500 staff that work out of the facility.

As did the 6th street viaduct bridge and the Canal Street reconstruction work have and will continue to spur development in the Menomonee Valley, we believe this facility will act as a similar catalyst to encourage and stimulate investment and development in the North 35th Street and Capital Drive neighborhood.

Milwaukee City Hall Historic Building Restoration
North West Corner
200 East Wells Street

In late July of 2005 Milwaukee's City Hall Exterior Restoration Project started with site mobilization and erection of scaffolding. The southern portion of Market Street was closed off for the construction job trailers, lifts and materials storage on this limited sized site. Protected access into City Hall as well as access into the Lower Parking level of the Zeidler Municipal Building is being provided for the duration of the project which is scheduled to be completed in November, 2008.

The construction/restoration activity began after years of planning by our staff. The building had undergone several inspections, analysis and review before the restoration design work began. The project architects, Engberg Anderson Design Partnership along with other restoration professionals, were selected from an experienced group of restoration teams and completed the contract documents in 2004. The project then went out for bids and in 2005 and the construction/restoration contract was awarded to J. P. Cullen & Sons.

The construction/restoration work began with the cleaning of the masonry and documentation/ measuring of all the architectural elements on the building. This work continued through the fall months and into early December. In additional, some selected demolition of terra cotta took place. These pieces were carefully removed in tact and sent to a terra cotta manufacturer in California for use in the making of "molds" for new terra cotta replacement pieces.

The project's team of architects & engineers; general contractor, sub-contractors & material manufacturers; and the City, with support from a construction/auditing consultant and an EBE, RPP & residency provisions monitoring consultant has partnered to develop a comprehensive construction management plan that includes bi-weekly owner/architect/contractor progress meetings that include reviews of the project's costs, schedule and issues; pre-installation/submittal meetings; materials installation mock-ups; daily on-site inspections; and monthly & quarterly cost accounting and EBE, RPP & residency provision reports with quarterly status reports presented to the Common Council - Public Works Committee.

The project is being overseen by Facilities Development and Management staff. Construction inspection services are being provided by in-house FDM inspector to supplement construction services provide by the architectural & engineering consultant.

The architectural consultant, working with FDM, did extensive research and documentation on the cultural and architectural significance of Milwaukee's historic City Hall Building. In 2004 the City submitted this information to Washington D.C. requesting Milwaukee's City Hall be recognized as a National Historic Landmark. On April 5, 2005 the U.S. Secretary of the Interior signed the official documents designating Milwaukee's City Hall Building a National Historic Landmark.

For more information and continuing updates on this interesting and historic project, please visit the City Hall Restoration Project website on the City Of Milwaukee official website www.ci.mil.wi.us.

Safety Academy Window Replacement
6618 N. Teutonia Avenue

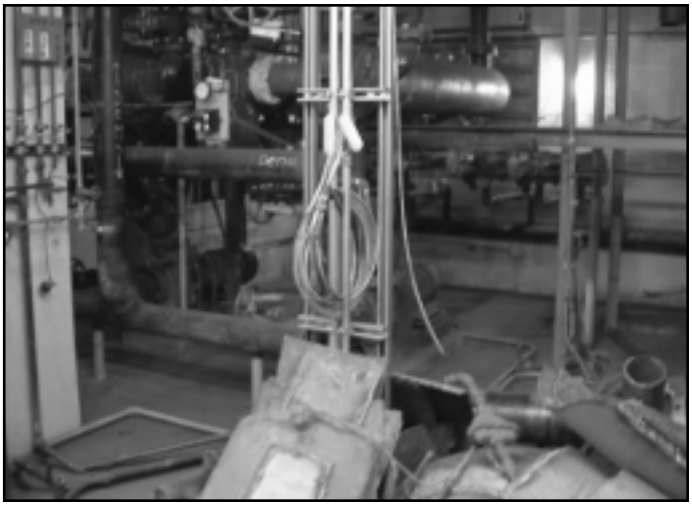
Built in 1964 as Madonna High School, the Milwaukee Safety Academy was acquired by approval of the City Planning Commission on March 8, 1972. This 170,000 square foot facility is used for fire and police training and operations. The original aluminum inefficient, leaking, and poor condition exterior windows were replaced with energy efficient windows in 2005. A total of 473 windows, consisting of 15 different types, were replaced.

The new windows, keeping in with the building's modern, finned exterior design are anodized aluminum, heavy-duty type, dual sealed, with 1" insulating glass. These replacement windows match the dimensions and finish of the original windows. The project was overseen by the architectural unit, and designed by an outside consultant. Window replacement was completed by an outside contractor, with oversight by B&F.

As a result of the window replacement, an energy audit comparison from WE Energies data shows an approximate 25% reduction in therms used for the same average temperature in the months of November 2004, when the building had its old windows, and November 2005, when the project was completed. In addition to energy cost savings, the new windows provide a more comfortable environment for fire and police staff.

THE MECHANICAL DESIGN UNIT. The Mechanical Design Unit's engineering professionals leads 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 the design and construction of building mechanical systems projects including project scheduling, budget control, compliance with design standards, resolution of on-site construction problems and overall project quality control, in coordination with user agencies. We provide engineering services to enhance the condition and prolong the useful life of public facilities. We provide engineering design services for fire life/safety systems, asbestos and lead paint abatement projects. We provide design services for the City-wide fuel dispensing systems that meet the Environmental Protection Agency and State of Wisconsin Department of Natural Resources requirements.

The existing heat exchangers were installed in 1960 when the building was built. The heat exchangers are used to convert steam purchased from WE-Energies to hot water that is used to heat the buildings' exterior walls and incoming outside ventilation air. The new units and pumps are more energy efficient as the waste steam is used to pre-heat incoming domestic water that is used in the sinks throughout the building.



Demolition of Old Heat Exchangers

New Heat Exchangers

MAYOR BARRETT DEDICATES PLAYGROUND TO COLONEL ROBERT J. MODRZEJEWSKI

FIRST WISCONSINITE TO RECEIVE MEDAL OF HONOR FOR VIETNAM WAR

On Tuesday, April 12, 2005, Mayor Tom Barrett honored Milwaukee native Colonel Robert J. Modrzejewski by renaming the Cleveland Avenue Playground to Modrzejewski Playground. The mayor was joined by Modrzejewski's family, friends, and members of the Wisconsin Chapter of Vietnam Veterans, the Polish American Congress, Milwaukee Public Schools Recreation Division, Department of Public Works Buildings & Fleet Division and many others to witness the dedication. The playground is located at 1020 West Cleveland Avenue, near the neighborhood he grew up in.

Mayor Tom Barrett, Colonel Robert J. Modrzejewski and his nephew Kevin Bilello. Kevin Bilello was instrumental in getting the name of the playground changed for his uncle.

Robert Joseph Modrzejewski was born (July 3, 1934) and raised in Milwaukee. He began his military career with the United States Marine Corps when he was 23 years old. He fought in the Vietnam War and rose to the ranks of Colonel. On March 12, 1968, during a ceremony at the White House, President Lyndon B. Johnson presented the Congressional Medal of Honor to Robert Modrzejewski "for conspicuous gallantry and intrepidity at the risk of his life above and beyond the call of duty", during Operations Hastings.

Colonel Modrzejewski spent most of his early childhood living on the southside of Milwaukee. Much of his spare time was spent at the playground near his house playing baseball and basketball. In his speech at the dedication, the Colonel spoke of the days when a portion of the playground was flooded during the winter and the neighborhood kids would skate there. He also learned how to swim at Cleveland playground.

The Colonel received his Medal of Honor for his participation in Operation Hastings. Over a three-day period, July 15–18, 1966, in an enemy infested jungle area, his company established a blocking position at a major enemy trail network. Right after landing, his company encountered a reinforced enemy platoon in a well organized defensive position. Then Major Modrzejewski led his men in the successful seizure of the enemy platoon which contained large quantities of ammunition and supplies. That evening, a numerically superior enemy force counterattacked in an effort to retake the vital supply area, thus setting the pattern of activity for the next 2.5 days. The enemy assaulted the company in overwhelming numbers, but each time was repulsed by the Marines. The second night, enemy struck in battalion strength, and major Modrzejewski was wounded. Although exposed to enemy fire, and despite his painful wounds, he crawled 200 meters to provide critically needed ammunition to an exposed element of his command and was constantly present wherever the fighting was heaviest. This occurred despite numerous casualties, a dwindling supply of ammunition, and the knowledge that they were surrounded. The then Major skillfully directed artillery fire to within a few meters of his position and courageously inspired the efforts of his company in repelling the aggressive enemy attack.

Colonel Robert J. Modrzejewski stands underneath the sign of the playground rededicated in his honor. The playground is one block through a neighbor's yard from his original home in Milwaukee.

Colonel Modrzejewski signed autographs for the crowd of veterans, family, friends and fans that attended the ceremony. Colonel Modrzejewski retired after serving 30 years in the Marines. He then taught Reserve Officers Training Corps (ROTC) and physical education for seven years. The Colonel and his wife Diane, are now enjoying their retirement in San Diego, California. Colonel Modrzejewski is Secretary on the Board of Directors for the Congressional Medal of Honor Society.

Shooting Range Replacement
Safety Academy

Since the tactical training of new and experienced police officers is continuously changing, the shooting range was upgraded to meet the safety needs of the officers.

Moving targets, armor resistant walls and stationary targets were installed to meet these needs. New lighting and ventilation systems were upgraded. A new control system for target control was added for more flexibility. This range is now one of the most modern units in the area.

THE COMMUNICATIONS UNIT. The Communications Unit consists of journeyman electrical mechanics, electrical workers and laborers, and 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 circuitry, various alarm systems, all City public address systems, the Community Safety Wide Area Network serving the Fire and Police Departments Dispatch Systems, Police call boxes and public access WiFi Hotspots at Pere' Marquette Park and Cathedral Square Park. This unit is also involved in the remodeling and construction of City facilities where we provide phone and data wiring and fiber connectivity for all City Departments. Communications continues to be in the forefront of the fiber optic and local area network hub technologies linking DPW, other City Departments plus other government and educational facilities.

In 2005, the Communications Unit worked with Avaya staff to install a telephone system at Department of Public Works (DPW) Field Headquarters to provide phone service to the new building. This involved providing fiber and copper to the new building to connect the facility to the City's existing network.

In 2005 Communications installed an additional 7 miles of fiber optic cable to enhance the City's data and telecommunication network. Only a few other municipalities in the nation own and use a community fiber network such as the one Communications is responsible for.

In addition to meeting the challenges of installing state of the art infrastructure technology, our unit replaces approximately 36 miles of copper cable each year due to cable damage, failures or to accommodate paving and road construction projects.

The most significant construction project impacting Communications in 2005 was the Marquette Interchange Project. Activities started in the fall of 2003 on the Marquette Interchange Project and are scheduled to be completed in 2008. Late in 2003, the Communications Unit began the task of relocating cables, and this year we restored cables routed across the State Street Bridge Structure and the Tory Hill Bridge Structure and temporarily relocated cables from the Walnut and Wisconsin Bridge Structures. Eighteen cables containing close to 3600 conductors feeding hundreds of circuits were relocated for these projects without causing any significant outage. Future projects will be coordinated around the activities of the Marquette Interchange to take advantage of planned outages while adding to reliability and redundancy of the fiber network.

Finally, our communications staff provides 24 hours a day, 7 days a week, 365 days a year service in maintaining the City wide 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 utilized by the City's ATM, SONET with DWDM, and Gigabit Ethernet networking technologies.

INFORMATION & SECURITY SERVICES

The 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 as well as acting as the central station monitoring center for DPW buildings on a 24/7 basis. The City contracts with a security provider during the weekends along with second and third shifts on the weekdays. These officers provide watch tour and patrol service along with monthly fire extinguisher and weekly AED inspections in the City Hall Complex. Their specific responsibility is to protect the assets under the control of the Department of Public Works.

SECURITY. This group also provides consulting services to other City departments on security-related matters and alarm system. In 2005 we moved our new digital access control /alarm into three of the four outlying garages and we have upgrade CCTV that are tied to this system at several additional facilities. Our long term plan is to manage all of our security function through this system in all DPW managed buildings. A large part of the year was devoted to the planning process for DPW's new field headquarters facility, as well as, the initial programming that was completed at the end of this year prior to occupancy in January 2006.

EMERGENCY RESPONSE. Our emphasis for 2005 has been to complete the first iteration of the Departments Continuity of Operation/Government (COOP/COG) plan. Additionally, were in development of the department portion of the City Emergency

Response Plan (ERP). These plans have been completed to date and we now begin the process of testing and adjusting these living documents. We continue various testing processes for emergency procedures and equipment in an effort to improve our ability to respond correctly to a variety of situations. These include regular testing on emergency and other procedures for employees who work in the central station, conduct fire drills for all employees in the complex at least annually and conduct inspections of emergency equipment per NFPA guidelines.

FIRE/LIFE SAFETY. We continue to upgrade the fire life safety system (sprinklers and detection) in the complex as we remodel spaces. The fourth floor of the municipal building and the fifth floor of City hall and several other small enhancements to the system have been completed in the complex. Additionally, we complete three of fours garages and now monitor eight building from our proprietary central station. We have also completed planning process on several projects that will be completed during the early months of 2005. This would include such items as: fire detection at the Central Repair Garage.

SPECIAL ELECTRICAL SERVICES UNIT. The Electrical Services unit consists of skilled and dedicated Electrical Mechanics specializing in the fields of electrical wiring, maintenance, and construction. Over fifty percent of our staff are credentialed Master Electricians and others hold credentials in Refrigeration, Electrical Inspection, and Industrial Instrumentation.

We provide a wide variety of electrical services for all city owned facilities including Police Districts, Fire Houses, Parking Garages, Forestry and Sanitation Yards, and the Port of Milwaukee, including the new Milwaukee Car Ferry.

In 2005 Special Electrical Services participated in and completed a multitude of large scale construction projects ranging from small office and shop alterations to large-scale remodeling projects.

The Group worked on the 10th floor Zeidler Building Office Remodel along with the Temporary Relocation of the City Attorneys Office. Each Project involved providing an updated power distribution system throughout with new energy efficient lighting, HVAC, and controls. The Group worked on the Zeidler Building 5th Floor West Office and DPW Data Center Projects. Management of schedules and resources exceeded expectations on these projects and allowed the Group to take on more work during 2005.

There were a host of other Capitol Projects the Group worked on which required substantial planning and coordination between Departments. These Projects included new Energy Efficient High Bay Fluorescent Lighting at the Northwest Garage Facility, Nine new state of the art Caterpillar Emergency Generators for the Fire Department, and continued work on the Zeidler Building Emergency Generator System Project. Communication between Departments was of critical importance during this work. Special accommodations were made not to interrupt operations during the Electrical Work. Planned outages were brief and efficient.

Fire House Emergency Generator Systems

City Hall Complex
Emergency Generator System and Controls

Also in 2005, the Group continues to work extensively on bringing the Electrical Systems up to Code Compliance within the City Hall Complex. The work involves designing and installing new feeder load panels within pipe chases for accessibility and safety.

In addition, the Group continues to be actively involved in the design, review, and planning of emergency back-up power upgrades, as well as on-site power generation projects for City Departments.

The group provided design review and recommendations and installation footnotes for the new DPW Field Headquarters on 35th and Capitol. Although this project was a Design Build it required the Services of this Department to insure operational functionality.

In 2005, Special Electrical Services continued to concentrate its effort in responding to customer generated electrical needs and requests. Through the Proteus Work Order System our staff with-

New City Hall Complex Emergency Power Distribution

Modification of Electrical Pipe Chases for Code Compliance

in Operations and Maintenance was able to manage a substantial volume of requests while still responding to other demand maintenance requests from other city wide department locations.

New to 2005, the Department worked with Operations Personnel and Johnson Controls installing Energy Monitoring Equipment at various Facilities. This equipment enables the City to track and trend energy usage. The information provides valuable feedback as to how the City's managing its energy resources. It also creates opportunities for energy conservation.

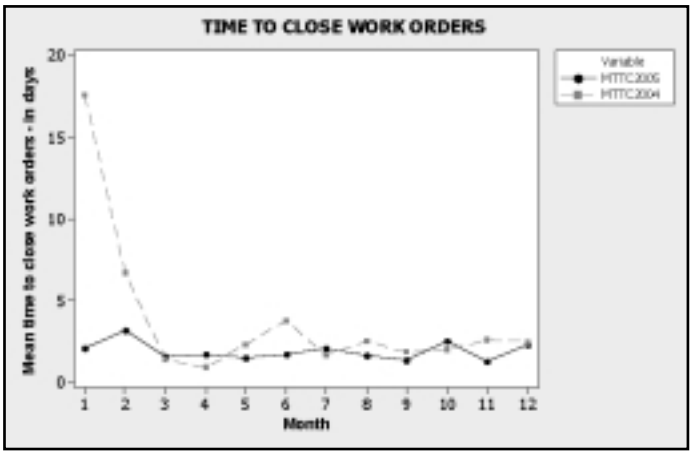


Figure 1: Comparing the number of work orders completed between 2004 and 2005

ENERGY TRENDING SOFTWARE. The Department undertook the task of consolidating its inventory and stockroom space in 2005 into a centralized location shared by Infrastructure. This streamlined operations and provided valuable real estate.

Throughout 2005 staff members have participated in a wide range of continuing education opportunities. As always, the group has displayed an eager willingness to adapt to an ever-changing work environment welcoming change brought on by new systems and technologies.

Special Electrical Services continues and makes every effort to provide prompt, competitive service to meet the City of Milwaukee's most critical electrical needs. Providing, 24-hour on call emergency call in service, the group prides itself on their ability to perform high quality, reliable electrical service, to a valued customer base.

OPERATIONS AND MAINTENANCE

USING OPERATIONS RESEARCH TO IMPROVE PRODUCTIVITY. The objective of the operations and maintenance unit is to maintain the capability of a diversity of systems while reducing overall costs. We have designed an organization that exceeds every performance and quality measure through sound operations research and practice. This distinctive approach incorporates measures of factors that include but are not limited to risk, prediction, alternatives, strategies and controls. Operations and maintenance has a rich history that now results in determined maintenance policy and actions based on the decision sciences. The operations and maintenance unit has been working very hard to not adopt best practices. We are system of imaginative people who lead rather than follow. Innovation in operations and maintenance is our mission.

DEMAND MAINTENANCE. The maintenance staff spend most of their time working on demand maintenance work orders (DMWO) such as hot - cold complaints and equipment failures such as pumps, compressors, air handlers, boilers and chillers. In 2005 the staff completed 8,867 work orders while in 2004 they completed 8785 (see figure 1 for a monthly distribution). There are two main reasons for the increase: 1) the buildings are getting older and 2) we started expanding the number of employees using our work order system to other units such as custodial workers, contractors, carpenters, painters and electricians. In 2006, this trend will dramatically increase.

PREVENTION. Preventative maintenance work orders (PMWO) involve performing a series of tasks that include inspections and servicing at specified intervals over time. Currently, we maintain 94 buildings with approximately 1800 pieces of equipment.

We have found that for some equipment, preventative maintenance costs exceed the cost of replacing a piece of equipment. Therefore, we found it to be more cost effective to allow breakdowns to occur and making repairs when they do. Figure 2 below reflects a monthly 2004 and 2005 preventative maintenance work order distribution. Our data allows us to better manage our PM by leveling our monthly work distribution to insure staff is never idle and making them more productive. 2005 was much better than 2004.

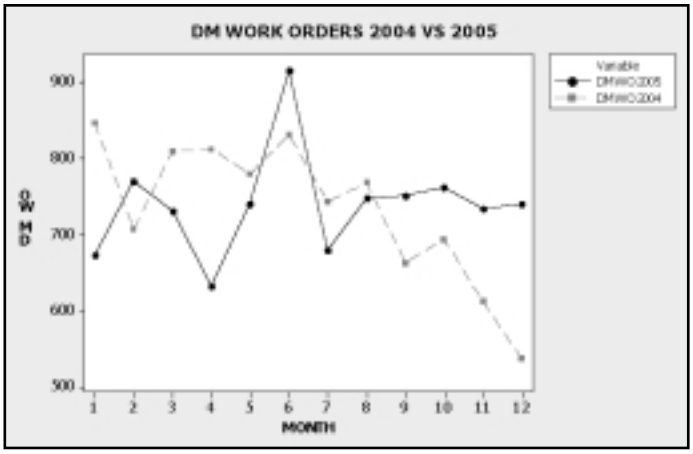


Figure 1: Comparing the number of work orders completed between 2004 and 2005

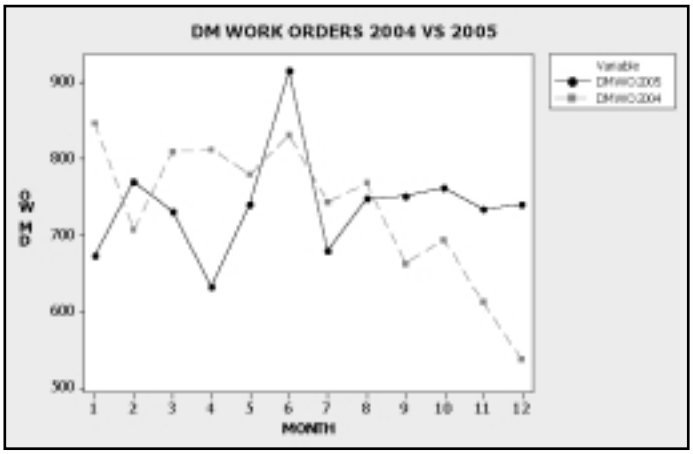


Figure 2: Planned performance time series data of work group output

FASTER SERVICE. We also are measuring the speed at which we deliver service to our customers by measuring the average time it takes to complete a work order (MTTC). In 2004 it took us 3.8 days while in 2005 we reduced the time to 1.91 days. The spike in January of 2004 was attributed to a large number of work orders left over from 2003. We evaluated each work order and found that we could consolidate a few, discard some and reassign the remainder to advance a standardized monthly workflow. As a result, the distribution has stabilized in 2005 (figure 3 below). Using time management analysis and principals staff was able to reduce our work order turnaround time in half.

MODELING OUR PERFORMANCE. We have dedicated ourselves to reaching our highest potential. We do this by analyzing the three performance measures (MTTC, DMWO and PMWO) all at once. By setting the average time it takes to close a work order (MTTC) as a function of the number of preventative work orders (PMWO) and the number of demand maintenance work orders (DMWO) in three dimensions, we are able to view the behavior of the stabilized system (see figure 4).

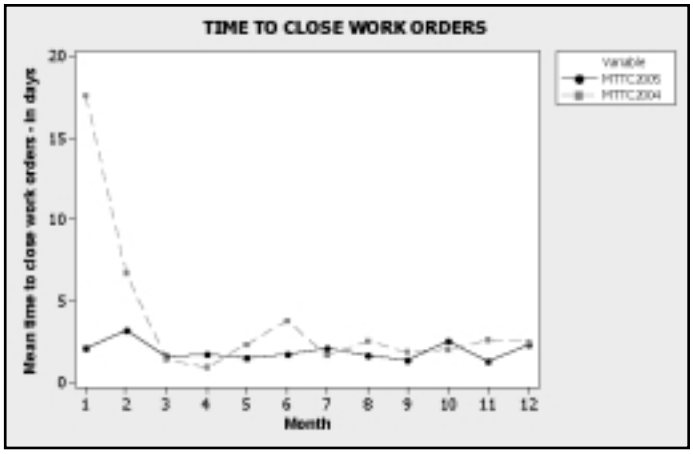


Figure 3: The average (mean) time it takes to close a work order

OPTIMIZING OUR PERFORMANCE. According to 2005 data and figure 4 above, it took between .8 and 14 days (on average) to close out a work order (MTTC), as represented by the height. We closed out anywhere from 200 to 850 demand maintenance work orders (DMWO) and from 80 to 260 preventative maintenance work orders (PMWO). After testing for statistical significance, we have identified our region of optimal performance. The results show our best performance over the year. Our best performing month was when it took us .8 days to close out a work order while completing 850 demand maintenance work orders and completing 260 preventative maintenance work orders. These performance measures were revealed to the staff and these results present themselves as a realistic goal. And, as managers, we all know, placing realistic expectations on our staff is essential.

INTRODUCING ENVIRONMENTALLY FRIENDLY CLEANING PRODUCTS. Several of our suppliers produce a line of eco-cleaning products. This natural line of cleaning products was developed with environmental responsibility, human health and performance as the criteria. Citrus-based oils, which are pure and pesticide free, have replaced toxic petroleum distillates and harmful glycol ethers. These products are made with

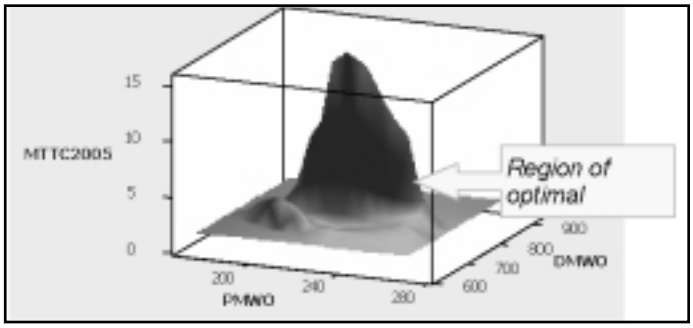


Figure 4: MTTC as a function of PMWO and DMWO

naturally derived detergents and other natural ingredients that biodegrade rapidly and are non-toxic to human, animal and vegetable life. There are no dyes or artificial fragrances in these products. Overall, our customers will experience a less harsh environment that leads to a healthier workplace.

REGISTERING THE MUNICIPAL BUILDING FOR OR LEED CERTIFICATION. 2005 marks the year that we registered the 841 N. Broadway Building for LEED certification. This means we are now gathering points to submit to the United Stated Green Buildings Council for official certification. Thus far, we are fulfilling prerequisites such as: separate metering of utilities, waste management and waste reduction, toxic material source reduction, minimum water efficiency, minimum energy performance, outside air introduction and exhaust systems, environmental tobacco smoke control, asbestos removal and encapsulation, discharge water compliance, erosion and sedimentation control and a host of other sustainable practices and technologies. As part of our green initiative we support our staff in seeking accreditation as a LEED professional.

GREEN TEAM. As a result of the Mayor's Green Team's suggestions we audited the energy use of the Municipal Building. As a result of the audit, we installed vending misers that reduce vending machine electrical use, removed all electric space heaters, installed enthalpy sensors that optimize the use of outside air for the HVAC systems, installed carbon dioxide sensors that insure indoor air quality and install occupancy sensors to reduce the amount of energy it takes to heat, cool and light rooms throughout the building.

COMMISSIONING. In 2005 we have introduced the concept of commissioning. Two waves of training we administered throughout the year and now we have a commissioning process in place to assure we receive no less than what we pay for and the maximum benefit from upgrades, system replacements, remodeling and installations. The commissioning process helps to reduce change orders, lowers over costs to the City, prevents start up problems and reduces energy use. Commissioning also insures adequate training for our staff and usable operations and maintenance manuals with preventative maintenance schedules and task lists.

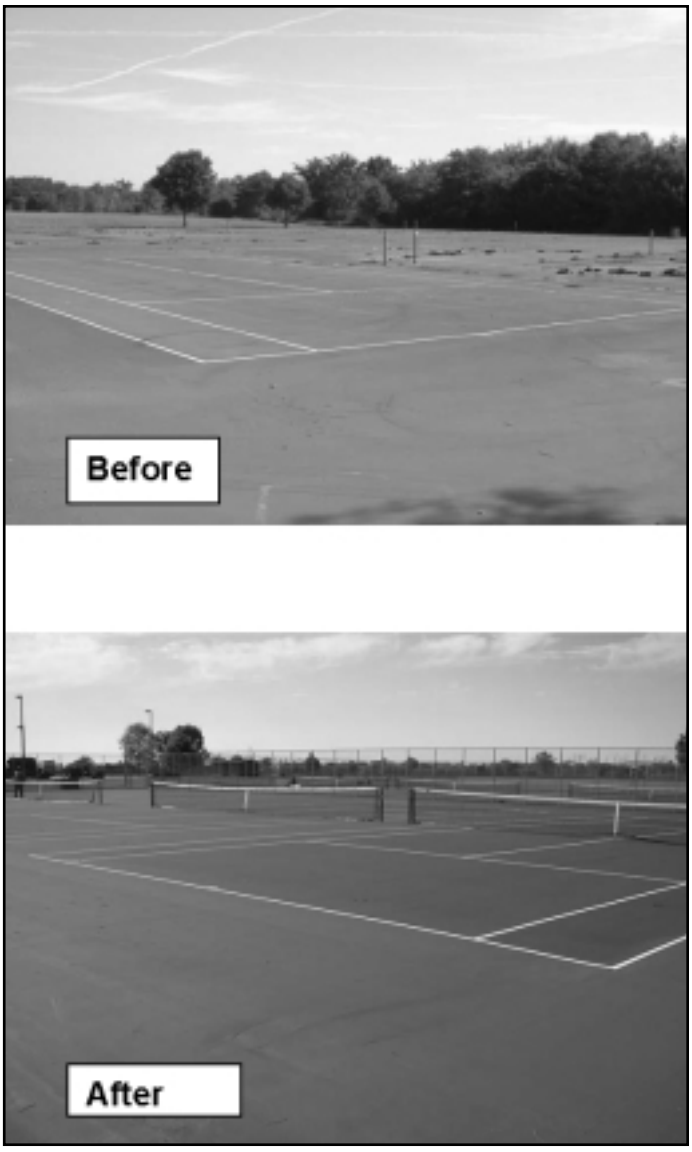
RECREATIONAL FACILITIES SECTION

The Recreational Facilities Design Unit has the responsibility for the construction and renovation of the city's eighty-three recreation facilities totaling over 369 acres. They are involved from concept through construction, creating the design, producing the contract drawings and specifications and administering construction contracts.

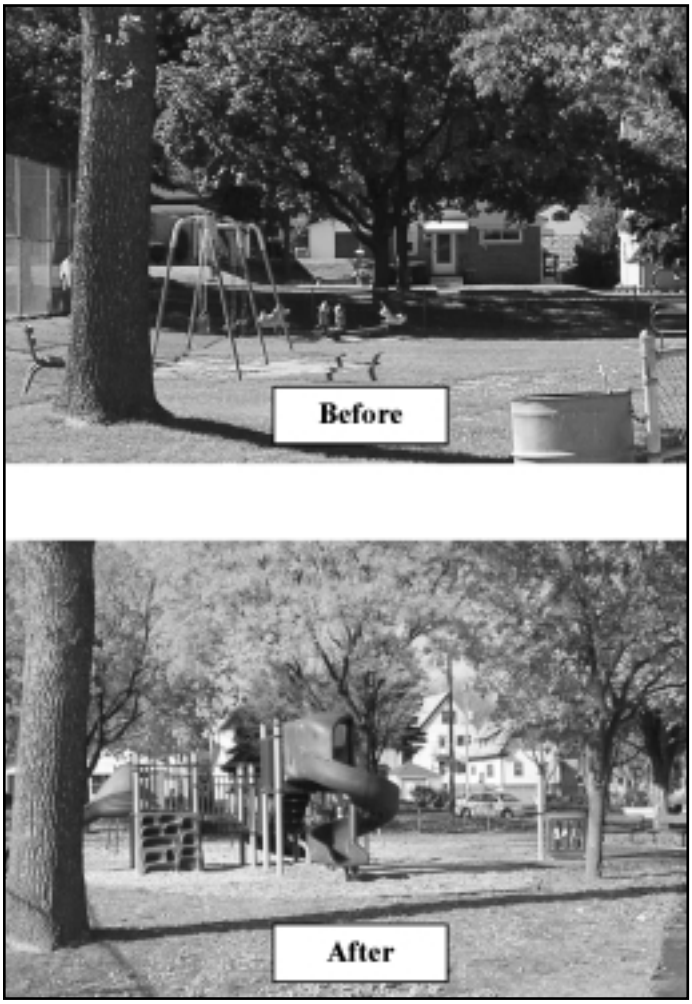
Work continued this year on upgrading the City's recreational facilities. Various renovation projects were completed and the first phase of two playfield projects were included in this year's recreational facilities construction program. Projects completed include the reconstruction of Sijan Playfield children's play area and the reconstruction of eight tennis courts at Vincent Playfield. The first phase of renovating S. 3rd & W. Uncas St. Playlot and Carmen Playfield was completed to assure the safety of young children using these facilities. The remaining phase of both sites will be completed in the summer of 2006.

All of the children's play areas constructed or reconstructed during the past eleven years are now handicapped accessible.

With our attention being focused on green spaces, the renovation of our children's play areas and playgrounds have been re-evaluated to suit the community's needs.



Harold Vincent Playfield



Sijan Playfield

CARPENTRY, PAINTING & MASONRY UNITS. This unit provides highly skilled trade services, which includes painting masonry, tuckpointing, stonework, ceramic tile, concrete walks and driveways, steel stud and drywall, millwork, cabinet making, floor and ceiling tile work and general maintenance of City buildings. This unit's employees were an integral part of the Section's Design-Build team, which included a number of remodeling projects. Remodeling work began in 2005 on the 10th floor of the Zeidler Building to make accommodations for the relocation of the City Attorney Offices while the City Hall undergoes restoration. This work will be completed in 2006. Staff also provided work on various fire houses, Police stations, and work for the health and Water Departments. This unit also and provided a over 900 board ups 24/7,. and continuous general maintenance of all city owned Tot lots.

GROUNDBREAKING CEREMONY HELD FOR NEW DEPARTMENT OF PUBLIC WORKS/MILWAUKEE WATER WORKS MAINTENANCE FACILITY AT TOWER AUTOMOTIVE SITE

The City of Milwaukee, in partnership with a turnkey developer, is building a new centralized facility for Department of Public Works and Milwaukee Water Works personnel. The facility is located at the former A.O. Smith/Tower Automotive Manufacturing Plant. A groundbreaking ceremony was held on May 17th with several local politicians, city officials, and contractors in attendance.

The new 230,000 square foot facility is being built on a 24-acre site, located at 35th and West Capitol Drive. This facility, when completed, will include operations of Street & Bridge Maintenance, Sewer Maintenance, Facilities Maintenance, and Milwaukee Water Works' Lincoln Avenue and Cameron Avenue distribution facilities. Currently, these groups are located at seven different locations. By combining these facilities, the City will create efficiencies by eliminating duplication of services in several different locations. The new facility will also avoid future capital and operating expenses. The staff at this site will number 480.

Mayor Barrett announced at the groundbreaking that the City was on track to meet or exceed the Emerging Business Enterprise (EBE) and Residential Preference Program goals. During the development of the site, the EBE goal is 18% of the contract dollars and the Residential Preference Program goal is 25% of the hours worked. The total value of the project is slightly over $23 million and when completed will have employed 65,000 worker hours.

Participating in the groundbreaking for the new Department of Public Works/Milwaukee Water Works Maintenance Facility groundbreaking were (left to right) Sam Dickman Sr., The Dickman Company, Mrs. Wade (Alderman Wade's mother), Alderman Willie Wade, Mayor Tom Barrett, Superintendent of Water Works Carrie Lewis, State Representative Barbara Toles, Director of Operations Jim Purko, City Engineer Jeff Polenske, and Gerry Blomerg, Midwest Rail and Dismantling. Not pictured, State Senator G. Spencer Coggs, and Brian Byrne, president of Briohn Development.

Environmental issues played a huge part in the development of the site and in the building design. The new building will incorporate sustainable design principles to help retain stormwater and prevent additional runoff from entering the sewer system. Energy Star standards will be met or exceeded for the lighting, HVAC, and roof elements of the project. In developing the site, 14 acres of buildings were demolished, resulting in 8,000 tons of salvageable metal and 100,000 tons of recycled granular fill that was created using on-site crushing equipment.

Completion of this facility will occur early in 2006, and the Department of Public Works will relocate its staff from the Traser Street facility at 6th and Canal Street, with that site being redeveloped into the Harley-Davidson Motor Company museum.

OPERATIONS DIVISION: Environmental Services

Zeidler Municipal Building
841 North Broadway, Room 619
[414] 286-8282

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

Michael J. Engelbart, *Sanitation Services Manager*

Robert McFadyen, *Forestry Services Manager*

CLEAN & GREEN

Environmental Services is dedicated to improving the environmental quality of life for the City of Milwaukee through clean neighborhoods, resource conservation and a healthy urban forest.

SANITATION SECTION

Sanitation is responsible for maintaining clean neighborhoods, streets and alleys. Sanitation conducts the following programs to achieve these results:

RESIDENTIAL GARBAGE COLLECTION.

In 2005, Sanitation provided weekly garbage collection to 190,572 Milwaukee households that disposed of 185,718 tons of residential waste. A solid waste contract with Waste Management effective July 1, 2004 resulted in a savings of $1.7M in the first year. Sanitation focused on improving the effectiveness of the residential program by changing the method of collection for bulky garbage.

COMBINED COLLECTION — NEW IN 2005. Sanitation implemented an operational change focused on more effective waste management, greater efficiency and a higher level of service to Milwaukee residents.

Combined collection allows residents to place bulky items at the curb on their regularly scheduled day of collection. Bulky garbage up to the size of two sofas is picked up in conjunction with weekly garbage collection. Previously, a separate special collection crew required up to 10 work days for pickup, whereas combined collection provides same-day pickup for those items set-out on the regularly scheduled collection day. For bulky items set-out after the regularly scheduled garbage pickup, combined collection reduces pickup time to less than 5 work days until the next week's garbage collection. An analysis of special collections in randomly selected one-block areas revealed that in 2004, Sanitation made 10 or more visits per block for brush, appliances and miscellaneous bulky items from April to October. In 80% of these cases, bulky garbage items were no longer at the collection point when crews arrived. By reducing the time items sit at the curb, combined collection improves neighborhood cleanliness and reduces garbage scavenging. Items larger than two sofas require special collection and are scheduled appropriately.

Combined collection also limits the type of bulky items accepted. Sanitation crews no longer collect major appliances such as washers, dryers, refrigerators, stoves, water heaters and dehumidifiers. Alternative disposal methods include retailer disposal, private scrap dealers or the City's self-help disposal centers. In addition, brush is limited to 4 cubic yards and only collected from March through November. Larger brush piles must be properly disposed of by residents or taken to the City self-help centers. By implementing combined collection and setting limits on the type and amount of bulky items collected, Environmental Services has improved collection response while reducing costs.

APARTMENT COLLECTION. Apartment buildings of 5 or more units are charged the full cost of garbage collection. In 2005, Sanitation provided garbage collection to 1,376 of the city's 2,663 apartment buildings that generated $914,505 in revenue.

NEIGHBORHOOD CLEANLINESS

Environmental Services supports strong neighborhoods by focusing on cleanliness efforts including:

PROJECT CLEAN & GREEN — NEW IN 2005. To foster neighborhood cleanliness and improve environmental quality of life, Environmental Services implemented Project Clean & Green as a citywide spring cleanup campaign. The new program combined several existing neighborhood cleanup activities with new initiatives to promote a clean, healthy and beautiful environment. Residents were encouraged to do their spring cleanouts during the seven week program from April 11th to May 27th. Residents received door/cart hangers requesting items be placed at the collection point by 7:00 a.m. on their scheduled collection day during their targeted week. The program capitalized on changes made under combined collection allowing residents to place unwanted bulky items at their collection point on their

scheduled collection day. Project Clean & Green included coordinated bulky collections, neighborhood cleanups, graffiti removal, tree plantings and 15 Arbor Day events. Project Clean & Green received media coverage through the *Milwaukee Journal Sentinel* Green Pages Supplement, on radio station WNOV and on Fox 6 News and WISN News Channel 12. City Channel 25 also taped a press event held with Mayor Barrett on May 4th. This segment was run on Channel 25 for multiple airings. Sanitation crews collected:

- 1,680 tons of refuse
- 7,160 brush piles
- 4,240 tires
- 4,980 skid loader piles
- 315 trees planted

Project Clean & Green saw a 23% increase in refuse and materials collected over targeted cleanups conducted in 2004.

SKID-STEER LOADERS

Sanitation routinely uses skid-steer loaders with grapple bucket attachments to manage loose debris and efficiently remove large piles of garbage and bulky items. The use of skid-steer loaders improves worker safety, improves efficiency and allows Sanitation to continue as a Department of Neighborhood Services nuisance remediation contractor. In 2005, a total of 11,555 tons of debris were collected using 8 skid-steer loaders.

STREET SWEEPING

Mechanical brooms swept 51,776 curb miles of Milwaukee streets and alleys and removed 7,828 tons of debris.

WEEKEND DROP BOX PROGRAM

Using Community Development Block Grant funding, Sanitation provides weekend roll-off dumpsters for coordinated neighborhood cleanups from April through October. This program provided 1,396 boxes for residential use which collected 4,387 tons of waste.

SPECIAL EVENTS

Sanitation provided support to 1,062 outdoor celebrations including races, marches, parades, block parties and church festivals, etc. Sanitation supplied a total of 134 dumpsters, 77 garbage carts, 14 roll-off boxes, 113 snow fences and 8,783 barricades for these events.

SELF-HELP CENTERS

The City's two self-help centers located at 3879 W. Lincoln Avenue and 6660 N. Industrial Road accept garbage, recyclables, appliances, brush, tires, used motor oil, oil filters, antifreeze and computers from Milwaukee residents. Non-commercial construction debris is limited to two-cubic yards. Summer self-help center operating

CITY ARBORISTS COMPETE IN WISCONSIN TREE CLIMBING CHAMPIONSHIP

The Wisconsin Tree Climbing Championship was held on July 14, 2005 at Pierce Park in Appleton, Wisconsin. The competition is sponsored by the Wisconsin Arborist Association. Arborists from the City of Milwaukee Forestry Section have participated and placed very well at this event for many years. The competition brings together statewide tree climbers to compete in five events — Speed Climbing, Footlocking, Throwline, Aerial Rescue, and the Work Climb.

There is a separate women's competition and men's competition. The women's winner is decided by the best overall score from all five events. The men's winner is decided by a masters challenge event consisting of the top three scorers from the five preliminary events.

In 2005 six arborists from the City of Milwaukee Forestry Section competed and did very well. Here are the names of the competitors and their placement.

Men's Division:
25 Competitors Overall
Najjar Abdullah — 2nd Place
Eric Wolf — 10th Place
Keith Gelhar — 12th Place

Women's Division:
4 Competitors Overall
Barb McCollum — 2nd Place
Kit Regan — 3rd Place
Kimberly Patterson — 4th Place

Barb McCollum and Najjar Abdullah, Urban Forestry Specialists, 2nd place winners in the Wisconsin Tree Climbing Championships. Congratulations!

Thanks to Randy Krouse, Technical Services Coordinator, Forestry Section for the information on the tree climbing competition.

MAYOR, COUNTY EXECUTIVE, DICKENS CHARACTERS, NUTCRACKER DANCERS PARTICIPATE IN CEREMONY

"OLD FASHIONED" CITY/COUNTY HOLIDAY TREE LIGHTING SET FOR RED ARROW PARK

On Thursday, November 17th Mayor Tom Barrett and County Executive Scott Walker hosted the lighting of the City/County Holiday Tree Lighting in Red Arrow Park, located on Water Street between State Street and Kilbourn Avenue. The 30-foot Colorado Blue Spruce was donated by the Loving Shepherd Lutheran Church and its school. The tree was planted 21 years ago by Pastor David Seager and his two sons.

Left to right: Mayor Tom Barrett, with daughter Kate, Assistant Pastor Evans, Pastor David Seager, both of Loving Shepherd Lutheran Church and school, Camara Hamilton, Alderman Ashanti Hamilton and Camani Hamilton. The alderman's daughters attended the harvesting of the Holiday Tree with their father. A slice of the tree was given to the school as a keepsake.

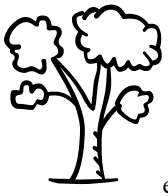
When Pastor Seager and his 7 and 9-year old sons planted the two 4-feet Colorado Blue Spruces in the front of the Loving Shepherd Lutheran Church in 1984 they never thought they would grow as fast as they did. On November 9th one of the trees was harvested for the City/County Holiday Tree. Mayor Tom Barrett and his 7-year old daughter Kate, Alderman Ashanti Hamilton with 7 year old Camara and 9 year old Camani were on hand to witness the harvesting of the tree along with several school children from the Loving Shepherd Lutheran elementary school. Pastor Seager said that the tree "will serve as a gift from the church and school to the public and serve as a tool to teach the children civic responsibility". Pastor David Seager and several members of the Loving Shepherd Lutheran Church and school children attended the Holiday Tree Lighting.

This year's event began with a pre-concert starting at 4:45 p.m. featuring the melodious sounds of the Roosevelt Middle School of the Arts concert choir. The choir has received top honors in state contests with combined high school and middle school choirs. Adding to the "old fashioned" merriment, characters from The Rep's A Christmas Carol, Mr. and Mrs. Fezziwigg (actors Michael Cone and Jenny Wanasek) were on hand to introduce the sponsors of the event and Mayor Tom Barrett. Dancers from another Milwaukee tradition, the Milwaukee Ballet's The Nutcracker added to the festivities by dressing in beautiful costumes from the production. Fresh hot popcorn was available and Starbucks Coffee's Cheer Patrol dispensed hot chocolate and treats for the crowd.

This year's Holiday Tree Lighting Ceremony was presented by Greening Milwaukee and supported by East Town Association, Starbucks Coffee Company, Milwaukee Downtown BID #21, Madison Medical Affiliates, Johnson Controls, Karl's Event Rental, Home Depot Foundation, Milwaukee Public Schools, the City of Milwaukee, and Milwaukee County. People filled the park and the event received excellent coverage by the media.

MAYOR TOM BARRETT PARTICIPATES IN 40TH ANNUAL ARBOR DAY PROGRAM

TREE DEDICATION TO HONOR THOMAS H. WYNN SR., CO- FOUNDER OF VETS PLACE CENTRAL



Mayor Tom Barrett was joined by other elected officials and dignitaries at the Center for Veterans Issues, Ltd., 3330 West Wells Street, in celebration of Arbor Day, April 29, 2005. This year's Arbor Day program was a dedication ceremony honoring Thomas H. Wynn Sr., co-founder of the Center for Veterans Issues, which opened VETS Place Central in 1992.

In addition to the tree dedication, there was an "honoring of the land" performance by the Indian Community School and a performance by the Texas Bufkin Academy choir. A VETS Place Central veteran performed a poetry reading.

Mayor Tom Barrett addresses the crowd at one of the 40th Annual Arbor Day Programs at a tree dedication in honor of Thomas H. Wynn, co-founder of Vets Place Central. Several neighborhood school children attended the event, as well as members of Thomas Wynn's family, friends, other veterans' groups and community organizers.

Young men from the Indian Community School perform an "honoring of the land" ceremony as part of the City's 40th Arbor Day celebration.

Thomas Wynn III helps to plant the tree dedicated in his grandfather's honor.

VETS Place Central provides holistic services and transitional housing for up to 75 veterans. Through their "Veterans United for Community Service Program," veterans and community members unite to provide volunteer services to the community. VUCS brings veterans and the community together, united around the issues of homelessness, youth, and the elderly while focusing on the training and empowerment of all returning veterans.

Also attending the Arbor Day program were President of the Common Council Willie Hines, Alderman Robert Bauman, and Sheriff David Clarke. Thomas H. Wynn Jr., put some of his father's ashes around the small tree so that as it grew his father would become a part of it. His son, Thomas H. Wynn III helped to plant the tree.

2005 marks the fortieth consecutive year that the City of Milwaukee has celebrated Arbor Day at area schools and facilities, and for the twenty sixth year, Milwaukee has received national recognition as a "Tree City-USA" by the National Arbor Day Foundation. Tree plantings and ceremonies took place in each of the 15 aldermanic districts in celebration of Arbor Day.

hours are Monday-Friday 7:00 a.m. – 7:00 p.m., Saturday 7:00 a.m. – 3:00 p.m. and Sunday 10:00 a.m. – 2:00 p.m. From December through March hours are Monday-Saturday 7:00 a.m.-3:00 p.m. and closed Sunday.

LEAF AND YARD WASTE

Sanitation collects brush piles up to 4 cubic yards in size from March through November. In addition, annual fall leaf collection runs from October through December. In 2005, operational improvements in leaf collection resulted in $200,000 in labor and fuel cost savings. A total of 30,949 tons of leaves, brush and yard waste were collected and composted.

RECYCLING AND WASTE REDUCTION. A critical component to clean communities is an effective recycling and waste reduction program. Sanitation's goal is to reduce the amount of residential solid waste sent to landfills through recycling and waste reduction programs. As a part of this effort, Sanitation conducts the following:

HOUSEHOLD RECYCLING

Milwaukee's residential recycling program diverted a total of 25,483 tons of materials from landfills. Under the recycling contract negotiated in 2004 with Waste Management Recycle America (formerly Recycle America Alliance), the City shares in revenues receiving 50% of the market value per ton of recyclable materials amounting to $1.478M in 2005. Recyclable materials include aluminum and steel cans, #1 & #2 plastics, glass and all grades of paper: newspaper, magazines, junk mail, home and office paper, phone books, paperback books, paperboard (cereal boxes, beverage cartons, etc.) and corrugated cardboard.

DIVERSION. As a result of the wide range of City recycling initiatives, approximately 25% of the solid waste collected is diverted from landfills. In 2005, a total of 60,712 tons of material were diverted from landfills. In addition to household recycling and yard waste, this includes 16 tons of computer components, 12 tons of waste antifreeze, 614 tons of used motor oil, 3.6 tons of oil filters and 25 tons of lead-acid batteries, 819 tons of tires, 450 tons of major appliances, 2,139 tons of scrap metal and 90 tons of plastic.

RECYCLING AND WASTE REDUCTION EDUCATION. The City is a member of the Wisconsin Be SMART (Save Money And Reduce Trash) Coalition, an award-winning partnership of local communities, state agencies, nonprofit organizations and businesses that offers recycling and waste reduction education. Through our membership in Wisconsin Be SMART Coalition, Environmental Services is included in the annual *Milwaukee Journal Sentinel* Green Pages. The 2005 Green Pages, an environmental supplement with tips on how to save money by conserving resources, was published on April 7th with a short story on the City's sustainability activities.

The City continued its partnership with Keep Greater Milwaukee Beautiful (KGMB) to conduct educational tours of the Materials Recovery Facility where recyclables collected by city crews are processed. KGMB conducted tours for 841 students from 37 schools. KGMB also conducts outreach and education on resource conservation. KGMB's myriad outreach activities resulted in contact with over 25,000 participants.

REUSE-A-SHOE

In 2005, the City's Reuse-A-Shoe program collected 14,424 pairs of used athletic shoes bringing the grand total to 20,743 since the program's inception in 2004. Participation in the program keeps used athletic shoes out of landfills and provides recycled material for use in athletic surfaces and playgrounds.

CANS FOR CASH

In 2005, the City participated in the Cans for Cash City Recycling Challenge sponsored by the US Conference of Mayors and Novelis Corporation. Cans for Cash is a national contest that rewards cities for recycling aluminum beverage cans. Cities compete for top honors in most cans collected and most innovative promotion categories. For the second consecutive year, the City won first place of $5,000 for the most cans collected. In cooperation with local recyclers, Milwaukee Public Schools and the City's Material Recovery Facility, a total of 1,002,792 pounds of aluminum cans were collected from September 1st – 16th. The theme of this year's challenge was the "Magic of Recycling." To promote the economic benefits of recycling aluminum cans, the theme emphasized the magic of "turning" cans into cash. Environmental Services partnered with MPS to sponsor aluminum can collections. Participating schools benefited from the proceeds generated by the redemption of their school can collections. The Top Three can-collecting schools won additional cash prizes paid from the City's 2004 award. All participating schools also received a "Magic of Recycling" Show with local magician, Tim "the Trash Man" Glander who used the fun of magic to teach the three R's of waste reduction: Reduce, Reuse and Recycle.

SNOW AND ICE CONTROL:

Public safety is priority one during snow and ice operations. In 2005, Milwaukee's snowfall totaled 61.4 inches which required 5 general plowings and 34 general ice control operations to clear the city's 1,400 miles of streets. The Department of Public Works' response, which ranges from a small number of trucks salting bridges to a full scale general plowing that involves a fleet of 375 pieces of equipment, is dependent upon the severity of a storm. General ice control operations are most common. This operation requires 90 salt trucks that apply the minimum amount of salt necessary to achieve safe road conditions. Major arterial streets are given first priority followed by side or residential streets. During a major storm, a general plowing can take 12-18 hours to complete. Emphasis is given to keeping main streets open followed by clearing snow islands, touching up intersections and widening residential streets. These cleanup activities may take several days following a storm. City crews do not plow alleyways.

In 2005, Sanitation began a pilot program using salt brine as an anti-icing agent on Milwaukee's bridges to test its effectiveness and feasibility in snow operations. Salt brine is a 23.6% mixture of rock salt and water. Salt brine application is a proactive measure for use at temperatures above 15 degrees Fahrenheit or prior to a general salting. Test use yielded positive results providing protection against ice formation and allowing added time to prepare for general ice control operations.

FORESTRY SECTION

The Forestry Section is responsible for maintaining a healthy urban forest that reduces stormwater runoff, improves air and water quality, moderates temperature by reducing the urban heat island effect, adds beauty to our urban landscape, reduces incidences of crime, increases business traffic and commercial activity and provides many other social benefits. Forestry designs, plans, plants and manages the City's 200,000 street trees, 120 miles of boulevards and over 475 acres of greenspace.

BEAUTIFICATION

BOULEVARDS. Forestry designed and planted new boulevards Downtown on Water Street from Juneau Boulevard to Pleasant Street that garnered praise and attention. The comprehensive design and color scheme were recognized by downtown businesses as adding value and beauty to Milwaukee's Downtown. A combination of trees, shrubs, perennials and a modest application of annuals highlighted an efficient low-maintenance design.

Capital planting projects included Forest Home Avenue from 27th Street to 35th Street. In addition, large gateway plantings were created on S. 27th Street at the Mitchell Park Domes and on Grange Avenue west of Howell Avenue.

As part of a continued budget initiative, Forestry reduced annuals on boulevards by 15% to reduce planting and maintenance costs.

In 2005, the conversion to an automated boulevard irrigation system continued. As a result of major street projects, boulevard reconstructions allow Forestry to install an automated irrigation system. Automated irrigation reduces labor costs, improves efficiency and conserves water with boulevard watering occurring at night.

MUNICIPAL NURSERY. Forestry operates and maintains a 160-acre municipal nursery in Franklin equipped with 30,000 square feet of greenhouse space. Plant materials including annuals, perennials and trees are grown for use on city streets and boulevards. To maximize efficiency of greenhouse operations, the City Nursery grows plant material at capacity and provides excess plants to area communities and organizations. In 2005, $71,000 in revenue was raised through the sale of 173,000 plants.

ARBOR DAY CELEBRATIONS

On April 29th Mayor Tom Barrett was joined by other elected officials and dignitaries at the Center for Veterans Issues, Ltd., 3330 W. Wells Street in celebration of Arbor Day. This Arbor Day program was a dedication ceremony honoring Thomas H. Wynn Sr., co-founder of the Center for Veterans Issues which opened VETS Place Central in 1992.

In addition to the tree dedication, there was an "honoring of the land" presentation by a Native American Elder. Students from the Indian Community School performed a traditional Native American Dance and there was a presentation by students from Texas Bufkin Academy. VETS Place Central veterans performed a poetry reading and their choir sang.

2005 marked the 40th consecutive year the City of Milwaukee celebrated Arbor Day at area schools and facilities and the 26th year Milwaukee received national recognition as a "Tree City-USA" by the National Arbor Day Foundation. Tree plantings and ceremonies took place in each of the 15 aldermanic districts.

On an Arbor Day celebration on May 18th, Forestry personnel joined staff and students at Golda Meir School, 1555 North Dr. Martin Luther King, Jr. Drive, in a dedication ceremony called "The Remembrance Tree: A Project for Peace". This program was coordinated by Express Yourself Milwaukee, an organization that nurtures the artistic and emotional lives of at-risk youth in Milwaukee. School children made leaves of copper engraved with the names of children whose lives were lost due to acts of violence. These leaves were hung from a tree in the playground area and as part of a "circle of life" celebration a new tree was planted by Forestry and dedicated at this event.

COMMUNITY OUTREACH

Forestry continued to reach out to the community to assist with beautification projects, provide expertise and knowledge and foster positive partnerships. Group participation included:

- Avenues West – upgraded Wisconsin Avenue from 16th to 27th Streets
- Wisconsin Natural Resources Foundation – hosted an urban forestry tour

MAYOR'S LANDSCAPE AWARDS

The annual City in Bloom Mayor's Landscape Awards recognized residents, community organizations and businesses for their achievements in gardening, landscaping and overall beautification of Milwaukee neighborhoods. Nominations are judged according to different categories: residential, commercial, school and creative. Out of a pool of 339 nominations, a total of 34 awards were presented by Mayor Barrett at the Italian Community Center on May 4, 2005. The City partnered with Greening Milwaukee to coordinate the annual awards.

CITY/COUNTY HOLIDAY TREE

Mayor Tom Barrett and County Executive Scott Walker were joined by characters from The Milwaukee Repertory Theater's "A Christmas Carol" and dancers from the Milwaukee Ballet's "The Nutcracker" to light the 92nd Holiday Tree. The "Old Fashion"

City/County Holiday Lighting took place on November 17th in Red Arrow Park. The impressive 30 foot tree was donated by Pastor David Seager, his family and congregation at Loving Shepherd Lutheran Church located at 3829 W. Clinton Avenue in Milwaukee. Mayor Tom Barrett, Alderman Ashanti Hamilton, Environmental Services Superintendent Preston Cole and Joe Wilson of Greening Milwaukee were on hand for the tree harvesting performed by a City Forestry crew on November 9, 2005.

INSECT AND DISEASE CONTROL

In 2005, the team of Forestry Technicians continued to monitor the Gypsy Moth population through egg mass surveys, tree service requests and examining past outbreak locations. In response to an outbreak in 2003, a spraying in 2004 of heavy outbreak areas was conducted in conjunction with the Wisconsin Department of Natural Resources. In 2005, seventy-five traps were placed representatively throughout the city to determine egg mass counts. Trap counts have leveled off since a peak in 2003. Forestry responded to a total of 8 Gypsy Moth complaint calls compared to 50 calls in 2003. As a result of these efforts and the cyclic nature of infestation, continued monitoring indicated a significant decrease in the Gypsy Moth population. With the population decline, spraying was not necessary in 2005. Forestry will continue to monitor, survey and document the Gypsy Moth population on an annual basis to ensure early detection and corrective actions are taken to keep the tree pest manageable and under control.

The University of Wisconsin-Extension published an informational fact sheet on the Linden borer tree pest in 2005. The Forestry section worked as a cooperating agency with the UW-Extension to study this native tree pest from 2002 through 2004. 36 city Linden trees were selected to evaluate infestation levels, life cycle of the insect, stress factors, and treatments for control of the pest. The UW-Extension Agency will be submitting the research manuscript to various scientific journals for possible future publication.

The Emerald Ash Borer is an exotic tree pest that has killed up to 20 million ash trees in the Midwest since it was discovered in 2002. This pest has the potential to spread into Wisconsin and threaten the State's estimated 700-800 million Ash trees. The Forestry Section has started preparing for this by attending numerous seminars on Emerald Ash Borer since 2003 to stay abreast of the current research and distribution of the pest. Additionally, in 2005 Forestry started training personnel on monitoring public and private ash trees for Ash tree decline, tree pest infestations, and protocols for reporting potential Emerald Ash Borer infestations.

CODE ENFORCEMENT

Forestry conducts the Code Enforcement Program that identifies noxious weed and tall grass, hazardous trees and encroachment violations. Forestry Technicians inspect properties, notify property owners of violations, stipulate corrective action, advise on work timetables and follow-up to ensure violations are remedied. If property owners do not complete the necessary work in the prescribed time, the work is performed by Forestry staff or a private contractor at the owner's expense.

Forestry staff took over inspection and enforcement of sidewalk snow and ice complaints on city sidewalks. Property owners are required to clear sidewalks abutting their property within 24 hours following a storm. Based on complaint calls, properties are inspected, violations are posted on property and property owners are given an additional 24 hours to clear walks. If the violations are not corrected, Sanitation staff will clear walks with the charge assessed to the owner's property tax bill.

URBAN FORESTRY INTERNS

Forestry directs the Urban Forestry Internship Program which hires college students enrolled in forestry programs during the summer. This program provides interns with valuable on-the-job experience through involvement in municipal urban forestry operations. Forestry benefits by having seasonal employees with collegiate training and knowledge in forestry. In 2005, Forestry had 11 Urban Forestry Interns enrolled in forestry programs at Milwaukee Area Technical College, UW-Stevens Point and UW-Milwaukee. Urban Forestry Interns performed:

- Street tree inventory data collection
- Gypsy Moth trapping and monitoring
- Other forestry related research
- Assisted with boulevard planting & maintenance and tree operations
- Assisted with nursery and greenhouse operations

NEW INITIATIVES

STREET TREE INVENTORY. As a result of two successive grants from the Wisconsin Department of Natural Resources, Forestry continued a comprehensive computerized inventory of the city's street trees. Grey to Green Street Tree Management Initiative consists of a GIS database that records tree location, tree health and work history of each of the 200,000 city street trees. In 2005, a total of 39,966 street trees were inventoried, bringing the two-year total to 46,089 trees inventoried. Completion of the all-city street tree inventory is anticipated to take 5 years. A full inventory will be used on a daily basis with tree data updated every 5 years through Forestry's pruning cycle. Updates will re-assess tree health, size and condition. Upon completion, the inventory will provide valuable operational data that assists in street tree maintenance, offers operational efficiencies and demonstrates the cost-benefit relationship of Milwaukee's urban forest. A computerized inventory will also greatly assist in insect and disease control in that species specific threats and target tree populations can be quickly identified.

NIGHT WATERING PILOT INITIATIVE. Assisting the Milwaukee Police Department in their effort to reduce street cruising, Forestry piloted a boulevard night watering initiative. Forestry worked with MPD and Council Members to coordinate night watering locations in targeted neighborhoods to wet road-

MAYOR BARRETT, DPW ACCEPTS $10,000 FOR NATIONAL RECYCLING CONTEST

U.S. CONFERENCE OF MAYORS HONORED THE CITY FOR ITS INNOVATIVE CAMPAIGN

Mayor Tom Barrett, DPW Commissioner Jeff Mantes, Environmental Services Superintendent Preston Cole, and Recycling Specialist Mary Bengsch were present on March 15th to receive a $10,000 check for winning the U.S. Conference of Mayors and Novelis, Inc. sponsored "Cans for Cash" contest. This was the first year for the contest.

The City of Milwaukee won two categories of the contest, each worth $5,000 — the city that collected the most aluminum cans during the two-week contest, and the city that uses the most innovative ideas to promote recycling. Milwaukee competed in the top division of the competition, which was for cities with populations of 250,000 or larger. The final tally for can collection was 559,977 cans or 280 tons collected from November 2–15, 2004.

"It is an honor to win the inaugural Cans for Cash Contest," said Mayor Barrett. "This contest was the first step towards launching Milwaukee's 2005 recycling efforts, and the $10,000 grant is going to be used towards citywide recycling education and promotion."

Activities used to increase recycling during the competition included an aluminum can education and collection program with Milwaukee Public Schools elementary schools, and an attempt to break the Guinness World Records for the longest line of aluminum cans. Additionally, specially labeled "Cans for Cash" recycling containers were located throughout the city.

Ms. Judy Sheahan, Executive Environment Policy Director for the U.S. Conference of Mayors, was on hand to congratulate the City of Milwaukee for winning the contest, and Ms. Brenda Pulley, Vice President, Corporate Communications and Affairs, Novelis, Inc., presented the over-sized check to Mayor Barrett.

Recycling remains a top priority for the City of Milwaukee and the Environmental Services Division. During the past few years, recycling participation has been slowly eroding. Steps have been taken to reverse the trend in 2005 by implementing new recycling programs initiatives. Since the beginning of the year, overall aluminum recycling numbers are about 350 tons above the same period last year.

According to the Aluminum Association, a Washington based trade group, aluminum is the most valuable material in the household recycling bin. Last year nearly $1 billion was paid for recyclable aluminum beverage cans, yet nearly 50 percent of all aluminum cans produced were not recycled.

(Left to right) Preston Cole, Environmental Services Superintendent, Brenda Pulley, Vice President, Corporate Communications and Affairs, Novelis, Inc., Jeff Mantes, Commissioner, DPW, Judy Sheahan, Executive Environment Policy Director for the U.S. Conference of Mayors, Mayor Tom Barrett and Mary Bengsch, Recycling Specialist pose with over-sized $10,000 check. The City of Milwaukee won in both divisions of the Can for Cash contest.

Mary Bengsch, DPW Recycling Specialist and principal, Ray Collie with students from Henry David Thoreau. The MPS school was #3 in collecting the most cans in the "Cans for Cash" contest. The students were treated to a pizza party sponsored by Recycle America Alliance.

ways in an effort to discourage cruising on Milwaukee streets. Median sprinkler systems were turned on weekends starting in mid-August through the end of summer from 9:30 p.m. to 4:30 a.m. at the following locations:

- Sherman Boulevard from Lloyd Street to Congress Street
- Fond du Lac Avenue from Sherman Boulevard to Hampton Avenue
- Capitol Drive from 35th Street to 76th Street
- 60th Street from Capitol Drive to Fond du Lac Avenue
- 76th Street from Capital Drive to Fond du Lac Avenue
- Burleigh Street from 76th Street west to City limits (Sundays only)

GRANTS

Environmental Services increased its grant receipts by approximately 2500% in 2005. Grants of note include:

As part of the US Environmental Protection Agency's Great Cities Partnership, Environmental Services received a $121,500 grant for Stormwater Parking to retrofit a city-owned parking lot located at 371 E. Ward Street using pervious pavement and a rain garden. This project will reduce the amount of stormwater runoff from city property into the city's combined sewer system.

Environmental Services received a federal appropriation in the amount of $345,000 for Green Schools to retrofit Milwaukee Public Schools playgrounds replacing asphalt with trees and turf. This project will reduce stormwater runoff from selected MPS sites, transform hardscape into playable surfaces and provide valuable shade and cooler temperatures for children to play.

ENVIRONMENTAL SERVICES — OTHER

FACILITY STUDY. Environmental Services contracted with EarthTech to conduct an assessment of all Environmental Services facilities to maximize efficiency. A final report is due in 2006.

ENVIRONMENTAL SERVICES UNIVERSITY (ESU). Environmental Services University is a commitment to the professional growth of Environmental Services employees through a customized training and development program. Created in 2005, ESU – Phase I consisted of an 11-course curriculum designed to provide professional enrichment, supervisory skills enhancement and management training for Environmental Services managers. In an analysis of tuition reimbursement usage, Environmental Services found that only 10% of available funds were used in 2002 and even less in 2003 by employees for continued education and training. ESU was developed as a training solution to meet the needs of Environmental Services employees by eliminating the inconvenience associated with continuing education. ESU is our approach to:

- Preparing Environmental Services employees for career advancement
- Creating a positive work environment for employees
- Providing staff with a broader understanding of all areas of Environmental Services management and operations
- Facilitating a culture of respect, cooperation and trust among employees
- Empowering staff to strategically plan for the future

ESU will be expanded to offer Executive Leadership and Introductory Supervisory Training to encourage all employees to value education and training.

MILWAUKEE GREEN TEAM. Environmental Services participated and staffed Mayor Tom Barrett's sustainability initiative, the Milwaukee Green Team. The Milwaukee Green Team comprised of a mayoral appointed Steering Committee and three community member work groups produced a list of recommendations on how to improve Milwaukee's economy, environment and quality of life for all residents. The recommendation report available online at www.milwaukeegreenteam.org emphasized the City's role with Mayor Barrett's leadership as critical to establishing Milwaukee as a leading Green City. Look for exciting developments in 2006!

SUMMER YOUTH INTERNSHIP PROGRAM. As part of Mayor Tom Barrett's youth job initiative, Environmental Services employed a total of 26 high school interns during the summer. Teen interns participated in Sanitation and Forestry operations gaining work experience and earning money. Teen interns performed sanitation work, worked on city boulevards and at the municipal nursery. Environmental Services managers reported positive experiences with participation in the program and as supervisors to the interns.

CITY OF MILWAUKEE EXCEEDS NIKE GOAL

MAYOR BARRETT ANNOUNCED THAT THE CITY HAD RACED PAST NIKE REUSE-A-SHOE GOAL OF COLLECTING 5,000 PAIRS OF ATHLETIC SHOES

Mayor Tom Barrett issued a challenge in June for City of Milwaukee residents to recycle their old athletic shoes. The challenge was to see if 5,000 pairs of athletic shoes could be collected, and turned into a sports surface material, Nike grind. The recycled material will be used to resurface and beautify a Milwaukee Public Schools tot lot/playground.

The mayor will announce just how many pairs of athletic shoes had been collected on January 7 at Gee's Clippers & Hair Design, 4323 West Fond du Lac Avenue. The grand total was 6,319 pairs of athletic shoes. More than 30 boxes are located around the metro Milwaukee area to collect the shoes, ads ran on local radio stations, and DPW Recycling Manager, Mary Bengsch worked with local organizers of race events in the area to collect shoes from runners. Attending the event was Jim Purko, Director of Operations, Joe Wilson, Greening Milwaukee, and Gina Spang, MPS Manager of Design & Construction. Preston Cole, Environmental Services Superintendent introduced Gaulien Smith, owner of Gee's and Mayor Tom Barrett. The 5,000th pair of athletic shoes was collected at the barbershop and presented to the mayor.

Mayor Barrett thanks "Gee" for using his barbershop to collect the athletic shoes and raising awareness of recycling.

Preston Cole, Environmental Services Superintendent, recapped what the Nike Reuse-A-Shoe program is all about before introducing Gaulein Smith, owner of Gee's Clippers (left) and Mayor Tom Barrett (right).

Gailein Smith, known as "Gee" is a huge basketball fan. His barbershop is adorned with Milwaukee Bucks memorabilia, including shoes and jerseys signed by the players and photographs. "Gee" decided to start collecting the shoes in October and issued a challenge to other barbershops in the community to also collect the shoes. Smith said he decided to involved as a way to help the children of Milwaukee and divert the shoes from the landfill.

The City of Milwaukee is looking forward to the completion of a recreational surface utilizing the Nike grind material sometime in 2005. The City will continue to collect the shoes and rebuild another surface once the second 5,000 pairs of shoes have been collected.

INFRASTRUCTURE SERVICES DIVISION

Zeidler Municipal Building
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[414] 286-2400

Jeffrey Polenske, *City Engineer*

Clark Wantoch, *Administration and Transportation Design Manager*
Administration and Transportation Section

Martin Aquino, *Engineer-in-Charge*
Environmental Section

Dale Mejaki, *Infrastructures Operations Manager*
Field Operations Section

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. Through consolidation and efficiencies, the Division has been reduced by roughly 350 positions over the past 11 years to a level of 909. In 2005, 966 Alderman Service Requests were received.

ADMINISTRATION AND TRANSPORTATION SECTION

ADMINISTRATION AREA. The Administration Area 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 Division.

The Area coordinates accounting functions along with the Department of Public Works Administration Services Division and the Comptroller's Office. The accounting services provided by the Area include establishing projects, recording payments, monitoring costs, and closing project budgets and expenditures for the Transportation Area and Environmental Area in coordination with the Construction Area. In addition, the Area is involved in accumulating, categorizing, recording, and reporting operation and maintenance expenditures for the Division. The Area 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.

In 2005, the Area administered Capital Improvement and Grant and Aid Programs in excess of $77.4 million, Operations and Maintenance budgets of over $43.5 million, with payrolls of $21.8 million. The 2005 expenditures for all contract payments totaled over $59.3 million. In addition to processing payments and monitoring construction contracts, the Administration Area provides support to other areas of the ISD on financial matters. The Area recorded and monitored expenditures that included payments to contractors, cost of City provided materials used in projects, as well as the salaries and benefits of City employees involved in the planning, implementing, and managing of the projects.

In 2005, Highway Aids in the amount of $22.6 million were received by the City of Milwaukee. The net expenditures related to DPW-Infrastructure activities resulted in approximately $9.3 million of aid received. In addition, $660,000 was received for reimbursement of costs incurred in maintaining and operating lift bridges on the connecting highway system program. Also, $1.9 million was received for Connecting Highways within the City of Milwaukee. Administration personnel were involved in the retrieval of information and gathering of support documents to produce the reports necessary to submit requests for these aids.

The Administrative Area completed the annual report of the Mid-Year Review of the financial condition of the Sewerage System. The Commissioner of Public Works is required to file this report with the city clerk on or before July 1st of each year as stated in the Master Resolution for the Sewer Maintenance Fund to secure bonds. The Section works in conjunction with the Budget Office and the Financial Division of the Comptroller's office to evaluate data for this report. The Sewerage System has a required Debt Service coverage of 1.2 times net revenues. The report determined the Sewerage System is in compliance with the covenant as found in Article VIII of the Master Resolution.

The Computer Services group within the Administrative Section of Infrastructure Services provides support for day-to-day operations of the computer systems within the Division and acts as liaisons with the other computer support areas within the City. The support includes providing hardware and software maintenance on the 93 GIS/CADD areas, 190 general-purpose areas and 29 special purpose areas within the Division and providing assistance to Division staff as necessary.

During 2005, the group replaced 25 of the GIS/CADD areas and 74 general-purpose areas for Division computer users. (4 of these users were upgraded to portable 'laptop' systems.) In addition, older hardware, which would otherwise have been

disposed of, was reconditioned, reconfigured, updated and reinstalled where practical. The group saw to the replacement of 10 of the oldest Division laser printers, purchased in the early 1990s, with more current and efficient technology. Software to remotely diagnose, update and configure workstations was installed on all networked Division computers in order to facilitate their more effective support. The group also generated various ad-hoc reports from data contained in the Division's databases and began the process of upgrading the office automation software used by the Division.

The group participated, as part of a citywide panel of support staff, in the review and selection of a new email and calendar system to be implemented for all of City government in late 2006. The section has also completed the upgrade of the Division's office automation software to current technology. In addition, the group is leading the ongoing effort to convert the Division's obsolescent database software into current web based applications. To date, major portions of the ASR tracking, Contract Letting, Project Programming and Special Assessments systems have been redeveloped.

Finally, the move and consolidation of Field Operations various locations into the new facility located at 35th & Capitol was assisted by the Administrative Section's support personnel.

TRANSPORTATION AREA. The Transportation Area is responsible for programming street, alley, and bridge improvements using city, state and federal funds; design of public way lighting, traffic control signals, signing 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 in sidewalks; 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; and undertaking engineering studies and investigations for the Common Council and other city departments.

The Area inspects and makes recommendations for Capital Improvements for all city maintained bridges and city owned parking structures. It also maintains plans and other records for the city's bridges, parking structures, dams, retaining walls, dock walls, and other structures; designs and prepares contract documents, and performs construction administration for a wide variety of projects involving structures.

The Area is also responsible for administering the city's major street, local street and alley capital paving programs, along with street lighting, traffic control and underground conduit capital programs.

PROJECT PROGRAMMING AREA. Administration of the City of Milwaukee's $7.5 million capital paving budget by the Project Programming Area resulted in approval of 31 street paving and 26 alley projects in 2005, and the award of $6.1 million in contracts for local streets and alleys.

In 2005, the Project Programming Area prepared 301 estimates and verified 39 city certified paving projects for improvement in the City of Milwaukee. The formal estimates prepared include 75 street paving projects (10 of which were sponsored by the State of Wisconsin) and 58 alley-paving projects. The verified certificates include 19 street paving projects, of which 11 were sponsored by the State of Wisconsin and 9 alley paving projects.

Project Programming staff appeared before the Common Council's Public Works Committee for public hearings on 123 paving, new sewer and new water projects. In addition, resolutions were prepared to authorize construction for approximately 239 non-assessable public improvement projects. Upon completion of the work, the Area reviews assessments, prepares and issues the associated special assessment bills to property owners affected by the work. In 2005, the area issued 4,270 bills resulting in $5,270,000 in revenue to the City.

MAJOR PROJECTS AREA. The Major Projects Area coordinated the completion of nine Federal and/or State Major Arterial Street and bridge projects at a total cost of $11,787,444 of which the City's portion was $2,304,300. The Major Federal and/or State paving and bridge projects completed in 2005 include the following:

- The reconstruction of W. State Street from N. 12th St. to N. 17th St.
- The reconstruction of N. Hawley Rd from the Viaduct to W. Vliet Street
- The reconstruction of N. Teutonia Ave. from W. Ruby Ave. to W. Villard Ave.
- The reconstruction of W. Wisconsin Ave. from N. 95th St. to N. 89th St
- The reconstruction of S. 6th St. from S. Chase Ave. to W. Maple St.
- The reconstruction of S. 6th St. from W. Ohio Ave. to W. Hayes Ave
- The resurfacing of W. Silver Spring from N. 43rd St. to N. 27th Street
- The resurfacing of W. Forest Home Ave. from S.42nd St. to S. 35th St.
- The rehabilitation of W. Glendale Bridge over Lincoln Creek.

Construction on the Hawley Road Underpass, a $4.3 million dollar project, was initiated in spring of 2005 with the majority of the east half of the bridge constructed by the end of 2005. Painting on the east half is currently underway. Traffic on the bridge was switched over in February 2006 and construction continues on the west half of the bridge with a scheduled completion date in 2006.

Construction was started on the State Street Bridge, a $14,000,000 project, in spring of 2005. This project is 100% funded by the Wisconsin Department of Transportation. The State Street Bridge is a "Milwaukee Type Bascule" bridge and is listed in the National Register as a historically significant structure. The rehabilitation of the bridge includes entire removal of the

superstructure and all mechanical and electrical components, which occurred in 2005. In 2006, the superstructure will be replaced historically in tact, including the rehabilitation of the adjacent bridge houses.

Preliminary engineering was in progress for 13 Federal and/or State Aided Major Street paving projects, 2 Congestion, Mitigation Air Quality (CMAQ) landscaping/ lighting projects, 2 Hazard Elimination and Safety (HES) project to improve roadway geometrics, 10 Local Bridge Replacement Program projects and one State Trunk Highway Bridge Replacement/Rehabilitation Project.

The area continues to work with the WISDOT in their efforts to design and coordinate work on the Marquette Interchange. The West Leg (Phase I) of the project from approximately N. 25th to Marquette University was completed in 2005. Phase II of the Interchange (North Leg) from North Avenue to approximately the Hillside Interchange started construction in 2005 and will be complete by the end of 2006, As part of the cleanup work of the North Leg, Major Projects coordinated the plans and estimates for the reconstruction of two local streets damaged by the Marquette construction, N. 11th Street from W. Highland to W. McKinley and N. 12th Street from W. Highland to W. Vliet Street. Construction of both the South Leg, from the Menomonee River to approximately the South Menomonee Canal, and the Core Interchange, from Marquette University to Water Street, was initiated in 2005. The West Leg is to be complete in 2007 and the Core is to be complete by the end of 2008.

Major Projects also worked with Marquette University toward completing the required preliminary engineering requirements associated with a Congestion Mitigation/Air Quality (CMAQ) Grant received from the Wisconsin Department of Transportation (WISDOT) for additional pedestrian lighting, landscaping and other streetscape items in and around the campus area. Landscaping was completed in June of 2004 and the Pedestrian Lighting is scheduled for completion in January 2005.

Planning and preliminary engineering work was completed in 2004 for the reconstruction of the State Street Bridge. The State Street Bridge is referred to as a "Milwaukee Type Bascule" and is listed in the National Register as a historically significant structure. This bridge was not only historical for its structure type but also for some of its aesthetics, such as its decorative hand rail and its copper clad octagonal operator's house. Therefore, the proposed project not only includes reconstruction of the existing Bascule Bridge but also incorporates these various items of historical significance.

Preliminary engineering was in progress for 17 Federal and/or State Aided Major Street paving projects, 3 Congestion, Mitigation Air Quality (CMAQ) landscaping/ lighting projects, 1 Hazard Elimination and Safety (HES) project to improve roadway geometrics, 11 Local Bridge Replacement Program projects and one State Trunk Highway Bridge Replacement/Rehabilitation Project.

Construction was completed on the Park East Freeway Project in 2004. The project involved the removal of the existing freeway and replacement with an at-grade roadway facility and a new movable bridge over the Milwaukee River at a total cost of over $30,000,000. Demolition and local road construction was completed by December 2003, streetscaping for the project was completed by the spring of 2004 and the Knapp Street Bridge was completed and operable by mid 2004. This unit continues to work with City and County staff in developing the redevelopment plan for the lands formerly occupied by the Park East Freeway.

Major Project's staff also coordinated the City's efforts to assist the Southeast Wisconsin Regional Planning Commission in their preparation of the 2005-2007 Transportation Improvement Program (TIP). This program is part of the Statewide Transportation Improvement Plan, which involves not only transportation planning efforts but also analysis of the state's air quality to meet future goals. This major effort involves compiling and updating project information on all Federal/State aided projects proposed for the TIP period.

As one of the City's major liaisons with the WISDOT, the Major Projects Unit was involved in several major efforts in 2004. These include the planned reconstruction and extension of the second phase of West Canal Street in the Menomonee Valley, between South 25th Street and Miller Parkway. Further agreements were negotiated with the WISDOT to supply additional state funds in the amount of 5 million dollars for this major street improvement, which will open up the Menomonee Valley for future development.

In addition this unit is working in conjunction with Milwaukee County on the reconstruction of South 13th Street(County Trunk V) from West College Avenue to the South City Limits. This reconstruction will include going from a rural roadway cross section to an urban sewer system and installation of new sidewalk, within the City of Milwaukee. The project will also include new street lighting.

Major Projects is also working with the Wisconsin Department of Transportation (WISDOT) in their efforts to rehabilitate 4.5 miles of North 76th Street (USH 181). Construction is scheduled for the spring/summer of 2007 for the portion from West Florist Avenue to West Clinton Avenue and for the spring/summer 2008 for the portion from West Clinton Avenue to West County Line Road.

The unit continues to work with the WISDOT in their efforts to design and coordinate work on the Marquette Interchange. Preliminary construction work on West Clybourn Street between North 9th Street and North 16th Street was completed in 2004 In addition ramp closings were put into place in preparation for Phase I of the Marquette Interchange, North Leg which is to begin construction in 2005.

TRAFFIC DESIGN AREA. Eight new traffic signals were install by the Division in 2005 to address new roadway construction and new land uses. Three of the signals were installed for the Marquette Interchange Project including one that is temporary and will be removed when the project is complete. Another signal was installed on West Canal Street at North Emmber Lane/North 13th Street in anticipation of the opening of the new Canal Street extension to Miller Park.

The City continued its program of replacing older electro-

mechanical traffic signal controllers with new microcomputer based solid-state signal controllers to improve reliability, to provide flexibility of operation, and to reduce maintenance costs. Three electro-mechanical controllers were replaced in 2005; there are only eight more controllers remaining to be replaced, with upgrades now completed at 99 percent of all traffic signal installations.

The City continued its program of installing fire vehicle traffic signal preemption on primary fire response routes. As the fire vehicles approach, vehicular traffic at signalized intersections is cleared for approaching emergency vehicles and a continuous green signal indication is displayed on the emergency approach route until the emergency vehicle clears. This program improves response times for these emergency vehicles while improving safety for emergency vehicles as well as pedestrian and vehicular traffic at affected intersections. The signal preemption devices were made operational at 15 locations under this program in 2005.

For the first time in the City, new special advanced technology signal pushbuttons and indications were installed at a signalized intersection to aid pedestrians who are blind and hard-of-hearing. An audio-vibro-tactile (AVT) pedestrian system was installed at the intersection of East Oklahoma Avenue and South Superior Street. The AVT system gives blind and hard-of-hearing pedestrians information via audible tones and vibrations to aid them as they cross the street. The intersection is located between the Center for Deaf-Blind Persons, Inc. and a bus stop used by many patrons of the Center.

Five Wisconsin Department of Transportation sponsored paving projects started in 2005 impacted traffic signals requiring hardware modifications and signal retiming. In addition, work for the Marquette Interchange Reconstruction project continued in 2005.

Along with installing the three traffic signals mentioned above, the Traffic Design Area has worked to insure that the additional traffic diverted from the freeway system onto City streets due to the construction moves as efficiently as possible. Major detour routes were set up for when the freeway system ramps or freeway lanes are closed. Traffic signals along the routes were optimized by changing their timing, and in some instances, modifying hardware to facilitate new traffic patterns. There were over 90 work orders issued in 2005 for traffic signal work solely to accommodate changing traffic patterns caused by the Marquette Interchange Reconstruction Project. Over 20 additional work orders were written in 2005 for projected changes due to construction work for the Marquette Interchange Reconstruction Project.

In 2005, light-emitting diodes (LEDs) began to be installed extensively throughout the City. LEDs use significantly less energy, resulting in substantial savings on electrical bills. Also, LEDs have a six-year warranty, compared to one year for incandescent bulbs, which is expected to save labor costs on the replacement of burned out bulbs. The specification and purchase of the first large order of LEDs was completed and all new, permanent traffic signals will be installed with LEDs. Five of the new signals installed in 2005 had LEDs. Traffic signals materially affected by paving projects also were fitted with LEDs. Funding for the first full-scale retrofit project, consisting of 114 signals, was secured in 2005 through a safety grant administrated by the Wisconsin Department of Transportation. Retrofits were started in 2005 with the bulk of the work expected to be completed in early 2006.

During 2005, the area 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 area 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.

In 2005, approximately 2,500 traffic signs were replaced throughout the City as part of our sign maintenance program. Also, 1,600 traffic signs (new installation) were installed throughout the City, now bringing the total amount of traffic signs in the City to 116,176.

STREET LIGHTING AREA. As part of the City's Capitol Improvement Program, plans were prepared for street lighting alterations and upgrades that were to be done in conjunction with 43 paving projects. 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, and where required, the installation new street lighting cable and the upgrade of electrical circuitry and components.

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 2005, a total of 583 streetlights in the City were converted to high-pressure sodium lighting. With this work, approximately 93 percent of the 67,240 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 and neighborhood and business district beautification projects. In 2005, grant funds or private funding was used to provide historical lighting as part of the neighborhood and business district improvement projects. Examples of projects completed this year are: East Wisconsin Avenue (Milwaukee River to North Milwaukee Street) and West North Avenue (North 4th Street to North 7th Street).

Engineering was completed for Streetscaping for East Wisconsin Avenue (North Milwaukee Street to the intersection of North Prospect Avenue and East Mason Street), and Park East Corridor on North Market Street (East Juneau Avenue to North Water Street) and East Ogden Street (North Market Street to North Broadway). Construction will continue on both of these projects in 2006.

Work has continued on the installation of street lighting on City streets affected by roadway improvements made in conjunction with the Marquette Interchange Reconstruction Project in 2005. Temporary and permanent street lighting improvements are being coordinated with Wisconsin Department of

CITY OFFICIALS, BRADY STREET BID, ARCHITECTURAL FIRM AND STRUCTURAL ENGINEERING COMPANY CUT RIBBON FOR ONE-OF-A-KIND MARSUPIAL BRIDGE IN MILWAUKEE

The Marsupial Bridge, located underneath the Holton Street Bridge, opened to the public following a ribbon-cutting ceremony on November 10th; five years after Julilly Kohler had the idea after kayaking down the Milwaukee River. The bridge is a pedestrian and bicycle path crossing the river and is suspended from the Holton Street bridge. Because it seems to hang like a pouch from the existing structure, the term "marsupial" has been utilized to describe it.

The ribbon-cutting was well attended by Brady Street Business Improvement District members, merchants from the area, Department of Public Works staff, residents, members of the Mayor's Bicycle & Pedestrian Task Force, principals and staff from La Dallman Architects and Bloom Consulting, LLC.

Kohler is a neighborhood resident who has been active in the revitalization of the Brady Street area for a number of years. She lobbied for the Congestion Mitigation Air Quality (CMAQ) funds and with the assistance of State Representative Jon Richards, the City was granted 80% of the funds needed for the project. Mayor Tom Barrett, who was a congressman at the time the funds were sought, also provided assistance. The total cost of the project was $3.2 million. Major support for the project was provided by 3rd District Alderman Michael D'Amato.

The unique design for the bridge was created by La Dallman Architects, with the structural design provided by Bloom Consultants. The Holton Street Bridge was completed in 1926 and there was a question whether the structure would support the Marsupial Bridge. Bloom Consultants provided detailed structural analysis to ensure the safety of the bridge. The sleek, sweeping design by La Dallman now connects two neighborhoods, the Riverwest area (including Kilbourn Park) and Brady Street.

A groundbreaking ceremony for the bridge was held in May 2004 and it was completed in November 2005. The completed bridge is 642 feet long, 10 feet wide, with the bikeway 8 feet. It spans the Milwaukee River for 200 feet. The deck of the Marsupial Bridge is about 32 feet above normal water elevation.

The bridge has received rave reviews for its stylish design which incorporates a deck of long-lasting Brazilian ipe wood and a railing of gleaming mahogany slats topped by stainless steel. Lighting is built into the bridge to provide illumination at night and on the Water Street side there are several low slung concrete benches in small plaza like area. The architectural firm believes the area could host movies in warmer weather.

Julilly Kohler at podium, from left to right, Alderman Michael D'Amato, Mayor Tom Barrett and City Engineer Jeff Polenske. Ms. Kohler stated that although many have given her credit for the idea of the Marsupial Bridge there were many others who felt that a connection needed to made between the two neighborhoods. She also thanked former DPW Commissioner Mariano Schifalacqua for his assistance in bringing the project to fruition.

The city expects to receive an additional $640,000 in funds from the federal government along with tax-incremental financing revenue that will help pay for amenities that were too costly to include in the current budget. Those amenities include a stairway to the Commerce Street Riverwalk, a connection to an old wooden train trestle and additional landscaping.

The Marsupial Bridge is part of the Crossroads Project undertaken by the Brady Street Business Association to assist with the revitalization of the Brady Street area and surrounding neighborhoods. Neighborhood organizations are planning a celebration around the Marsupial Bridge on May 20th that will incorporate the Milwaukee River, Kilbourn Park and Brady Street area merchants.

Left, the railings of the bridge feature varnished mahogany slats, topped with stainless steel. This photo shows the relationship of the Marsupial Bridge to Commerce Street. The view pictured below demonstrates how the Marsupial Bridge fits into the structural design of the Holton Street Bridge.

Transportation contractors as work on the interchange project progresses. Construction will continue in 2006 for the upcoming phases with completion anticipated in 2008.

In 2005, a major circuit cutover to replace aging electrical circuitry has started at the west side of the City between the area bounded by North Hawley Road to North 77th Street and West Bluemound Road to West Dickinson Street. Work will continue in 2006 for the remaining segments of the project. Another circuit cutover was also included in this project in the area bounded by West Adler Avenue to the south City limits and South 84th Street to South 95th Street.

In 2005, work has 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. Replacement of the existing system will continue in 2006.

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

PLANNING AND DEVELOPMENTS AREA. The Planning and Developments Area undertakes a variety of tasks related to transportation planning, ranging from non-traditional projects such as traffic calming to arterial roadway and freeway improvements. This area is involved in almost every major private development and public improvement that occurs Citywide. This area works closely with other City departments, elected officials, state and county departments, private organizations and the general public. The following is a sampling of work activities that were undertaken in 2005.

In 2005, assistance was provided to the WISDOT with regard to traffic mitigation and administration during the North Leg and start of the Core and South Leg phases of the reconstruction of the Marquette Interchange. This area attended numerous meetings concerning Marquette Interchange construction phasing, utility relocation, and coordination, traffic mitigation and elected official and public outreach in 2005. All of these efforts were directed at keeping downtown Milwaukee open for business during all phases of the Marquette Interchange construction and minimize the impacts of diverted traffic from the interchange during construction. Assistance was further provided on the Intermodal Passenger Facility location study; the application of Intelligent Transportation System technology (ITS) in the Gary-Chicago-Milwaukee (GCM) Corridor; a study of incident management on southeast Wisconsin's freeways (TIME); and the implementation and testing of an Integrated Corridor Operations Program (ICOP).

The area coordinated projects being completed under the Congestion Mitigation and Air Quality (CMAQ) Program, the Statewide Multi-Modal Improvement Program, and the Transportation Enhancement Program, all of which were continued under the Transportation Equity Act for the 21st Century (TEA-21). These programs generally provide up to 80% Federal and/or State funding for eligible projects.

During 2005, the area worked closely under a three-party design contract with Edwards and Kelsey, Inc. on the Summerfest Shuttle Bus Advanced Parking Guidance system. The area facilitated and participated in numerous meetings with the Technical and Executive Committees of this project as well as attending meetings with various other project stakeholders. As a result of these meetings, consensus was reached on the design of the advanced parking signs and their location and on the parking structures to be invited to participate in the system. Final Plans and Specifications for the project were completed in late 2005. Draft Agreements between the City of Milwaukee and the participating Parking Structure owners were drafted and conveyed to the owners following meetings with representatives of this area. The City plans to let a construction contract for this project in late spring of 2006 with construction anticipated to begin later that year and operation of the system in early 2007. This system will provide information to drivers headed for Summerfest about available parking in garages located near the shuttle route in the downtown area. It is hoped that this initial deployment will spur the development of a more comprehensive downtown parking management system.

The area was involved in several bicycle and pedestrian related projects again in 2005. A major event in 2005 was the creation of a full-time Bicycle and Pedestrian Coordinator position. This area continued to provide membership and staff assistance to the City's Bicycle and Pedestrian Task Force. The Task Force was active in 2005 fulfilling its mission to recommend to City policy makers ways to make the City of Milwaukee more bicycle and pedestrian friendly.

Planning and Development has also worked with Wisconsin Walks using WISDOT BOTS funding to hold walking workshops (Pedestrian Roadshows) in the Marquette and Silver City neighborhoods. These workshops are designed to get neighborhood input and produce a plan to improve the pedestrian environment from an aesthetic and safety perspective. We have held these workshops in other areas in previous years and the plans have resulted in dramatic improvements such as the bump outs and in-street yield to pedestrian (R1-6) signs on Brady Street.

Another outcome of the Walking Workshops has been the development in 2005 of an overall pedestrian safety campaign initially emphasizing efforts to improve driver awareness of the need to yield to pedestrians in a crosswalk. This campaign will be called "StreetShare" and is in the final development stages with plans to launch in June of 2006.

The area continued its efforts in implementing the City's Bike Rack Assistance Program. This program, funded by a Transportation Enhancements grant, provides local business with free bike racks. In 2005, City forces installed new bike racks in several local business districts. To date, over 850 free bike racks have been distributed since 2000. The area will continue to promote the program in 2006.

In 2005, the area worked with the Bicycle Federation of Wisconsin (BFW) to undertake two bicycle related projects. The BFW was retained to undertake the Off-Street Bikeway Study. This project, funded by the STP-Discretionary program, involves the evaluation of off-street corridors that potentially could accommodate a paved bike trail. The BFW was also retained to design and produce a new City/County bicycle route map using STP-Discretionary funds. Over 100,000 new bicycle route maps were printed and about 40,000 were distributed in 2005.

Engineering continued on the Kinnickinnic River Bike Trail over the former Union Pacific Railroad right of way between South 6th Street and East Washington Street. The City retained Bloom Consultants, Inc. to design a new bicycle bridge over South Chase Avenue. Construction of this CMAQ funded bridge and trail is anticipated to begin in 2006.

Construction on the Marsupial Bridge was completed in 2005. The Marsupial Bridge is a bike/pedestrian bridge suspended beneath the North Holton Street Viaduct, which connects the Beer Line "B" area to the Brady Street commercial district. The Marsupial Bridge project was funded by a CMAQ grant secured by this area.

In 2005, we used CMAQ construction dollars from the Bicycle Route Evaluation, Designation and Spot Improvement project to stripe bicycle lanes marked on W. Center St., N. Oakland Ave., W. Forest Home Ave., E. Lincoln Ave., E. Chicago St., N. Milwaukee St., E. Young St., E. Pittsburg St., W. Highland Blvd., N. Humboldt Blvd., W. Lisbon Ave., W. Walnut St., W. Vliet St., E. Ogden Ave., E. Kenwood Blvd., S. 6th St., W. Silver Spring Dr., and E. Erie St. We also added some new bike lanes on a few other streets through our regular paving program to bring our total to 45 miles of bike lanes.

During 2005, we continued to work in a cooperative effort with the DNR to implement remaining segments of the Hank Aaron State Trail (HAST). The HAST projects are funded primarily with CMAQ grants previously secured by this area. Furthermore, this area provided technical assistance to the DNR to secure an additional CMAQ grant for the construction of a bike ramp structure from the 6th Street Viaduct down to grade along the south bank of the South Menomonee Canal and trail connection to East Pittsburgh Avenue. The Hank Aaron Trail between 6th Street and 25th Street was completed in 2005 in conjunction with the Canal Street Reconstruction project.

In 2005, the West Canal Street Reconstruction project was completed. The primary objectives of the project included providing an effective traffic mitigation route during the reconstruction of the Marquette Interchange and facilitating redevelopment of the Central Menomonee Valley in addition to a portion of the Hank Aaron State Trail, this project included relocation of an existing railroad spur within West Canal Street, reconstruction of West Canal Street between North 6th Street and North 25th Street on the existing alignment, and a modern roundabout near the intersection of West Canal Street and North 25th Street.

In 2005, we worked closely with the design consultant, Milwaukee Transportation Partners, to finalize plans for the West Canal Street Extension project between 25th Street and Miller Park in the Menomonee Valley. This project includes construction of a new roadway from North 25th Street to Miller Park through the west end of the Menomonee Valley, a new access road serving Falk Corporation, and construction of portions of the Hank Aaron State Trail. Construction on this project began in 2005 and, upon completion in 2006, will include _ mile of elevated roadway, 20,600 tons of concrete, 2.7 miles of bridge girders, 250 tons of reinforcing steel, and 14.6 miles of bridge pilings. This project is expected to provide a catalyst for redevelopment of the Menomonee Valley as well as provide an alternate traffic route during reconstruction of the Marquette Interchange.

In 2005, engineering was completed and construction began on a Lift Station/Bioretention Facility located at 25th St. and Canal Street. This project is partially funded through an MMSD partnership and provides stormwater treatment for Canal Street between 16th Street and 25th Street as well as adjacent private land in the central Menomonee Valley. This project is the first element of a comprehensive plan to treat virtually all stormwater generated in the Menomonee Valley with regional treatment facilities.

In 2005, engineering was completed on the Miller Park Reversible Lanes/Variable Message (VMS) Sign Project. This project provides the necessary traffic control equipment including overhead sign structures, static signage, pavement markings, ITS equipment, and a variable message sign to allow efficient parking lot operations and two-way traffic operation on Canal Street during stadium events.

This area also worked closely with DCD and the Menomonee Valley Partners business group in their planning efforts including participation in a National Design Competition for the "Green Development" of the former Milwaukee Road Shops site. The results of this competition were integrated into the design initiatives for the extension of West Canal Street between North 25th Street to Miller Park. In 2005, design engineering began on the infrastructure to support the Milwaukee Road Shops business park. Technical assistance was provided to DCD to secure an EDA grant to fund 50% of the cost of this infrastructure. Remaining costs will be TID funded. S. 33rd Ct., which provides access to the Menomonee River and the Palermo's Pizza development will be completed in 2006.

We continue participation in a study of downtown transit improvements known as the Milwaukee Downtown Transit Connector Alternatives Analysis. This study, sponsored by the City, Milwaukee County, the Metropolitan Milwaukee Association of Commerce and the Wisconsin Center District, is investigating alternative downtown fixed guideway transit improvements linking multiple tourist and business venues. The Alternatives Analysis is expected to be completed during the summer of 2006 with selection of a Locally Preferred Alternative. With local consensus, the project could advance to the preliminary engineering phase of project development

This area participated in the Kenosha-Racine-Milwaukee Commuter Rail study. In 2005, the Alternatives Analysis (a.k.a. WISERIDE) was completed. Late in 2005, the next phase known as the Alternatives Analysis / Project Development/ EIS Phase was initiated. This study, sponsored by the Counties and Cities of Kenosha, Racine and Milwaukee, the Wisconsin Department

of Transportation (WISDOT) and the Southeastern Wisconsin Regional Planning Commission, is intended to produce a Draft Environmental Impact Statement (DEIS), refine the previous alternatives analysis, and develop further a commuter transportation project within the corridor.

We provided coordination services for the Downtown Pedestrian Corridors project. A contract was awarded in 2005 for street amenities along East Wisconsin Avenue and North Prospect Avenue from North Milwaukee Street to East Mason Street. Work on this CMAQ funded project is expected to be completed in 2006.

During 2005, we continued our role as liaison with the various railroad entities doing business in the City in matters of crossings, structures, and right-of-way improvements.

The area coordinated Infrastructure Services Division and Department of Public Works activities for several major development projects, including Kilbourn Tower, St. Luke's Regional Medical Center, Columbia/St. Mary's Hospital, Phase II of the Cherokee Point Subdivision, the Mayberry Subdivision, Palermo's Pizza, the Harley Davidson Museum, Potawatomi Casino expansion, the Milwaukee County Grounds development and the Pabst City redevelopment project. This area also worked on several residential developments in and around the central business district in 2005. This area participated in several predevelopment roundtable conferences with DCD in which DPW's comments and concerns were identified at an early stage in the development process.

We worked closely with DCD on the Park East corridor redevelopment project. We worked to retain National Survey and Engineering to prepare subdivision plats, which will allow for the full development of the Park East corridor.

We continue to assist the DCD with the expansion of the Riverwalk system, including planning for roadway and streetscape improvements to complement the adjacent riverwalk.

The Planning and Development area is responsible for the Division's review of various permits, specifically as the proposed work relates to the public's use of the right-of-way. In 2005, this area processed 620 utility permits, 182 DPW permits, 55 boring permits, 5 hollow sidewalk and 427 building permits. We also review applications for special privileges and air/subterranean space leases, and writes resolutions for Common Council action. In 2005, 54 special privilege resolutions were prepared by this area.

During 2005, we continued our role of assessing impacts to the public way through the review of local and state legislation, and encroachments and obstructions affecting various public improvement projects. We also continued to provide public service assistance to our citizens by investigating a variety of traffic, roadway, and railroad grade crossing condition complaints. We also continued its role in reviewing the condition of hollow sidewalks that may be impacted by planned paving projects.

In 2005, this area continued to provide technical assistance to the Board of Zoning Appeals (BOZA). We provide membership to the Zoning Administration Group (ZAG), which provides comprehensive and timely reviews of special use and zoning variance requests in front of the Board. In 2005, approximately 725 new requests were submitted to the Board office and reviewed by the ZAG. This area also provides staff at each BOZA meeting to present the DPW report on cases in front of the Board. We also provide technical assistance to the City Plan Commission with regard to DPW concerns on proposed General and Detailed Planned Developments, as well as proposed zoning changes. Both written comments and oral testimony are provided to the City Plan Commission in 2005.

During 2006, the Planning and Developments Area will continue to work closely with other City, State, County, Federal, and private entities in continued improvement and maintenance of our arterial street and bridge infrastructure with the given resources and funding programs at our disposal. We will also work similarly in implementing streetscape and bicycle enhancements.

CENTRAL DRAFTING AND RECORDS AREA. The Central Drafting and Records Area is responsible for maintaining the one-quarter section maps of the area 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, address assignment maps; and the preparation of state and city paving plans, structure plans, street lighting plans, circuit maps, traffic signal plans, underground conduit plans, and other specialty maps and exhibits are accomplished with the use of an interactive computer graphics system.

Additional duties of Central Drafting and Records includes: the operation of a "Diggers Hotline" service to assist in the location of City of Milwaukee facilities in the public way; the 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; the review of certified survey maps and subdivision plats; the assignment of addresses; the review of street name change ordinances; checking and optimizing routes for oversize and overweight loads; sales of maps; performing traffic counts and surveys; providing reproduction services for various City departments; and maintaining an office supply facility for the Transportation and Administration Section.

In 2005, 15 plans and petitions for the vacation of public ways were processed. The Area also processed 6 subdivision plats and 90 certified survey maps, produced 209 paving plans for 112 separate paving projects, 6 bridge structure projects and 5 state

paving projects, conducted 15 traffic counts and acted upon 34,361 requests from Diggers Hotline to locate the City's underground electrical and water main facilities and 571 requests for utility plan information.

CITY UNDERGROUND CONDUIT AREA. During 2005, an additional 13,080 lineal trench feet of conduit was installed, 7,650 lineal feet of conduit expansion, 1,241 lineal feet of conduit replaced and 1,657 lineal feet of conduit abandoned.

City forces installed conduit in South 6th Street from West Lincoln Avenue to West Maple Street, South 6th Street from West Ohio Street to West Hayes Street and North Hawley Road from West Wisconsin Avenue to West Vliet Street in conjunction with the paving of those streets. These installations expanded existing conduit packaged within these streets. City forces also installed conduit across North 35th Street from an existing conduit package into the Tower Automotive site, which will house various Department of Public Works staff and operations. Additional conduit was also installed in the intersection of North 36th Street and West Auer Avenue to support the cabling needs for the Tower Automotive site. Conduit was installed in West Canal Street from North Emmber Lane to North 25th Street by the paving contractor. This installation was included in and funded by the paving contract.

As part of the Marquette Interchange Project, City forces installed new conduit in North 11th Street from North Wisconsin Avenue to West Wells Street for the necessary cable reroute required with the removal of the Wisconsin Avenue Bridge over I-43. The Wisconsin Department of Transportation's contractor installed conduit on both the new State Street and Wells Street Bridges over I-43 replacing what was removed with the demolition of those bridges. City forces replaced conduit in the approaches of both bridges. Conduit was installed for the City by the Wisconsin Department of Transportation's contractor in West Fond du Lac Avenue from West Walnut Street to West McKinley Street. Members of the Underground Conduit staff continue to attend weekly meetings for the Marquette Interchange Project.

City forces installed conduit in East Michigan Street from West Plankinton Avenue to the Milwaukee River. The City hired a contractor to install conduit on the Michigan Bridge over the Milwaukee River from the abutment to the bridge house. This installation will allow for the remote operation of the bridge. City forces installed conduit in East Michigan Street from North Harbor Drive into the Pier Wisconsin Building. Both of these installations were funded by Buildings and Fleet.

FIELD OPERATIONS SECTION

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

- Maintenance of the City's streets, alleys and sidewalks.
- Design, construction and inspection of street, alley, sidewalk and bridge improvement projects.
- Construction and maintenance of all public way lighting, traffic control signals, traffic signage and pavement markings.
- Operation and maintenance of the City's moveable and fixed bridges and viaducts.
- Inspection of permitted utility construction and occupancy in the public way.

CONSTRUCTION UNIT

Local Paving

The Construction Section performs duties in all facets of local paving projects. This includes existing roadway surveying, designing, construction inspection, materials administration, labor compliance, contractor payments, as-built certificates, maintaining an extensive Road Life database and construction management. The South and North Field Engineering groups were combined in 2005 and relocated to the new DPW Field Headquarters. Ample office and storage spaces designed for our specific needs along with adequate vehicle and employee parking will facilitate improved work efficiencies. In 2005 local paving work consisted of 20 contracts that totaled 7.22 miles of roads and 2.67 miles of alleys. The total local paving contract cost was $10.5 million. In addition, Street Maintenance resurface paving work consisted of a contract that totaled 1.17 miles of roads and private development paving work that totaled 1.75 miles of roads.

Sewer construction totaled $19.2 million for 38 contracts covering 10.57 miles. Water main construction consisted of 27 contracts that totaled 11.5 miles of water main relay at a cost $9.1 million. Inspection was also provided for 2.2 miles of suburban water main installations.

State Paving

The Construction Section also performs administrative duties on Wisconsin Department of Transportation (WisDOT) projects within the City of Milwaukee. These functions include construction management, inspection, contractor payment estimates, materials monitoring and reporting, and wage/labor verification. For select projects survey and design duties were also performed. Nine WISDOT paving projects were constructed in 2005 at a contract cost of $30.7 million covering 5.94 miles. These include:

- South 6th Street – West Ohio Avenue to West Hayes Avenue
- South 6th Street – South Chase Avenue to West Maple Street
- West Canal Street – North 6th Street to North 25th Street
- West Forest Home Avenue – South 35th Street to South 42nd Street
- North Hawley Road - West Valley Forge Drive to West Vliet Street
- West National Avenue (Streetscape) – South 1st Street to South 12th Street
- West Silver Spring Drive – North 26th Street to North 43rd Street
- West State Street - North 12th Street to North 17th Street
- North Teutonia Avenue – West Ruby Avenue to West Villard Avenue

One bridge project was completed and four bridge projects began construction in 2005 at a cost of $7.3 million. These WISDOT projects are respectively:

- West Glendale Avenue over the Lincoln Creek
- West Canal Street over the Menomonee River
- West Canal Street viaduct over the Menomonee Valley / Railroad R.O.W
- North Hawley Road over the Menomonee River / Railroad R.O.W. / West State Street
- West State Street over the Milwaukee River

Project highlights include:

SOUTH 6TH STREET
South Chase Avenue to West Maple Street

South 6th Street is State Highway 38 throughout this projects limit. Reconstruction of concrete pavement included steel dowelled jointing on this 0.50 mile project at a contract cost of $833,000. Reconstruction consisted of replacement of all concrete pavement, curb and gutter, driveway approaches, and portions of sidewalk. An abandoned buried trolley track zone was removed as part of this contract. Track removal operations blocked the middle of the roadway preventing temporary one-way traffic to occur safely as planned. Traffic north bound was detoured to South 4th Street and south bound traffic was detoured to South 5th Street. This allowed more construction operations access to the roadway resulting in meeting the working days to complete goals. At project completion two-way traffic was restored and permanent pavement markings were placed with the addition of bicycle lanes.

SOUTH 6TH STREET
West Ohio Avenue to West Hayes Avenue

This portion of South 6th Street is a local north-south arterial. The total reconstruction of concrete pavement on this 1.20 mile project was completed at a contract cost of $1.4 million. Reconstruction consisted of replacement of all concrete pavement, curb and gutter, driveway approaches, and portions of sidewalk. Removal and disposal of an abandoned overhead railroad bridge was completed as part of this contract as well as the removal of an abandoned buried trolley track zone lying with traffic in the middle of the roadway. This track removal occurred continually in the middle of the roadway preventing temporary one-way traffic to occur safely as planned. With the entire roadway closed, multiple construction activities could stage work in the roadway resulting in meeting working days to complete goals. The roadway was permanently widened at the location of a north bound bus stop just north of West Oklahoma Avenue to allow traffic to keep flowing regardless of buses stopping. At project completion two-way traffic was restored and permanent pavement markings were placed with the addition of bicycle lanes.

WEST CANAL STREET
North 6th Street to North 25th Street

Concrete pavement reconstruction and realignment started in 2004 and was completed in 2005 for this 1.3 mile project. Extensive sewer main relaying and relocating, water main alteration, and hydrant relocations were completed prior to paving. Also prior to paving, extensive relocation of railroad tracks was completed under this contract. Construction was conducted in phases to allow two-way traffic almost throughout the project duration. Alternating halves of the right-of-way was opened to vehicles by placing traffic on the existing road, or on relocated temporary road, or on new pavement. The reconstruction of West Canal Street culminates the realignment at a new roundabout at North 25th Street. A new westerly outlet from the roundabout opens the way to the ongoing West Canal Street – North 25th Street to the Miller Park Ring Road WISDOT project. Decorative stamped and terra cotta brick colored concrete was placed at the roundabout. Concrete work included pavement with doweled joints, curb, and walk. The Hank Aaron Bike Trail was constructed north of the north curb as an asphalt path along Canal Street. The sewer excavating and grading required for this realignment of a historically industrial area made soil remediation necessary for debris hauled away. This remediation process was monitored and tested by an experienced consulting firm as part of this project.

WEST CANAL STREET
North 25h Street to Miller Park Ring Road
WEST CANAL STREET & NORTH 25TH STREET
Bio-Retention Facility and Lift Station

As the Menomonee Valley renewal process continues, these two projects started construction in 2005. Opening of a new road, a bridge, and viaduct will complete the connection of North 6th Street and West Canal Street to the Miller Park Stadium. Also, as part of water quality and storm water management improvements a Bio-Retention Facility is under construction. In 2005 the diversion sewers were installed that will lead to the facility.

WEST SILVER SPRING
North 26th Street to North 43rd Street

This asphalt resurfacing project was completed in stages to allow two-way traffic throughout construction on this busy commuter and truck route. Pavement operations included cracking and seating of existing concrete pavement into a stabilized base for the installation of two layers of asphalt pavement. Concrete replacement included walk, driveway, curb, bus stop pavement pads, and median revisions. Asphalt resurfacing occurred with four key operations: portions of existing concrete or asphalt was removed by milling (via mobile grinders), the lower course asphalt binder was placed, manhole adjustment work was done, and to complete the project a top course of asphalt with permanent pavement markings was placed. Pavement markings included the addition of bicycle lanes west of North 35th Street. This 1.34 mile project had a contract cost of $1.2 million.

WEST GLENDALE AVENUE
Bridge over the Lincoln Creek

The existing bridge was rehabilitated by complete concrete re-decking, sand blasting and painting of structural steel, concrete sidewalk and railing replacement at a contract cost of $277,000. The approaches to the bridge were replaced by concrete pavement.

NORTH TEUTONIA AVENUE
West Ruby Avenue to West Villard Avenue

Concrete pavement reconstruction was completed on this 0.96 mile long project for a contract cost of $2.6 million. Work was done in two stages of complete concrete pavement replacement of half the roadway at a time in order to maintain two-way traffic as much as possible throughout the construction. Construction operations were coordinated to accommodate road closures while the railroad completed reconstructed a track grade crossing, as well as businesses and residents along the project to successfully keep inconveniences to a minimum. Bicycle lanes were also added to this roadway.

EAST WISCONSIN AVENUE
Milwaukee River to North Milwaukee Street
EAST WISCONSIN AVENUE
North Milwaukee Street to North Prospect Avenue

The streetscape and asphalt resurfacing of East Wisconsin Avenue involved the main arterial of an important business area located in the heart of downtown Milwaukee. The westerly project extending west to the Milwaukee River was completed and the easterly project extending east to North Prospect Avenue was phased with 25% constructed in 2005 and completion planned for 2006. Asphalt resurfacing was placed in stages to allow two-way traffic and parking throughout construction. In addition to concrete bus pavement pads and curb placement, special jointing and exposed aggregate surface style of walk were installed according to an overall architectural streetscape design. Intersections were constructed with stamped and colored pavement to complement crosswalks with special jointing patterns. This specialized work required an experienced contractor per contract provisions. Other streetscape features installed were tree wells, granite planters with wrought iron railing, and black iron trash receptacle and bike racks. Specialty kiosks and harp street lighting installation is also planned. As expected in an older commercial area, there were hollow sidewalk present. These underground vaults directly under sidewalk may be an extension of existing historic buildings' basements and had to be dealt with in a manner unique to each building before or during construction. Total contract cost for 2005 was $1.46 million.

STREETS AND BRIDGES UNIT

STREET MAINTENANCE AREA. The Street Maintenance Section administers three types of maintenance contracts; pavement seal coating, crackfilling and asphalt pavement resurfacing. 2005 marked the seventh season of using the "Slurry Seal" method of seal coating asphalt pavements. Again this years' program was a success, receiving favorable public and Aldermanic reaction while receiving very few complaints. City streets received 220,921 square yards of "Slurry Seal" in 2005. Under the Crackfilling Contract a contractor crackfilled 369,159 square yards of pavement throughout the city utilizing a rubberized joint seal.

Asphalt resurfacing occurred on South 13th Street between West Edgerton Avenue and West Grange Avenue, North 8th Street between West Burleigh Street and West Keefe Avenue and West Mill Road between US Hwy. 45 and North 118th Street where 4,020 tons of asphalt were placed. In an effort to eliminate most of the rutting and shoving that is typically seen at intersections and in high traffic areas superpave asphalt was utilized on this projects.

A contract was also issued for pavement joint repair along North 107th Street between West Good Hope Road and West Brown Deer Road. The joints in the pavement were failing along this stretch of roadway. The failing joints caused the pavement to rise and produced a poor ride for vehicles. Full depth repairs were undertaken; the concrete base was removed and replaced then superpave asphalt was placed to create a smooth riding surface.

Street Maintenance Section field crews placed an additional 10,014 tons of asphalt on city streets. Repair projects included asphalt shims on roadways, asphalt shims on sidewalks, small asphalt patches and pothole repairs.

Street Maintenance Section has continued to make improvements in the tracking of customer requests. All service requests phoned into the City of Milwaukee are answered by the Call Center at (414) 286-8282. Telephone calls for pothole complaints, offsets along sidewalks, guardrail problems and pavement concerns are recorded into a database by the Call Center. Supervisors access this data, via computer, a minimum of twice daily. Utilizing the services of the Call Center has improved record keeping and improved the tracking of complaints, Aldermanic Service Requests and City Attorney Claims. Bar codes have been added to our Patching Lists thus speeding up the process of accessing and tracking the data from Call Center.

After receiving a new Pavement Planner in mid year 2004 Street Maintenance crews now utilized this piece of equipment for a full construction season. This new piece of equipment gave crews greater flexibility in the types and size of repairs that can be completed. Larger asphalt repairs are now completed in a shorter amount of time. Pushups and shoving of asphalt at bus stops can now be repaired easily with this machine. This machine also provides the ability to complete new types of repairs such as grinding asphalt along curb faces and around manhole covers.

Street Maintenance crews continued to utilize the sidewalk grinder on offsets along city sidewalks. New uses for this versatile

machine have been found including grinding along curb flanges and within alleys to correct surface water flow problems.

BRIDGE MAINTENANCE AREA. This Section is responsible for over 220 structures maintained by the City of Milwaukee, including routine daily and seasonal maintenance, and response to bridge emergencies 24 hours a day, 7 days a week. These structures span navigable waterways, the extended watershed, and highway or railroad grade separations. Most critically, the City operates 21 movable bridges on a year round basis.

In 2005 Bridge Maintenance began the move from the Traser Yards, just southwest of the confluence of the Menomonee River and Menomonee River South Branch. Out of necessity, the Bridge Maintenance crews have been split into two units: a group that is focused on movable structures and group that works on both movable and fixed spans.

The Bridge Operator Maintenance Crew and Bridge Electricians will remain in the Menomonee Valley. Through the cooperation of Electrical Services, some space was made available at 1540 West Canal. From this yard, the increase in crew response time to bridge emergencies will be negligible. Similarly, for routine year-round assignments, this unit will remain in proximity to their daily work sites and retain water access. In 2006, the remaining Bridge Section crews, the Carpentry/ Masonry, Painter, and Ironworker crews will be moving to the combined Water & DPW facility at 3450 North 35th Street, the former Tower Automotive site.

In 2005, scheduled bridge maintenance work was again focused on movable facilities over the navigable waterways and those fixed facilities near the Traser Yard at 6th and Canal including continued replacement of sacrificial timbering. Masonry repairs were made to bridges at Hastings, Burbank, and Denver. Emergency repairs, including replacement of broken expansion joints, were performed on the Hampton Avenue Bridge over the Lincoln Creek.

Bridge Maintenance crews poured concrete pads for scaffolding for city hall restoration and established signage for traffic redirection through the project duration. Crews completed scupper modification and added landscaping for the Marsupial Bridge. Crews constructed slabs for prefabricated Haz-Mat buildings for Electrical Services and Fleet Services.

Bridge Maintenance Crews were involved in final preparation for moving the shops out of the Traser Yard property. Usable materials were cataloged and added into the planning for the Tower site. Surplus machinery and materials were identified and other material was scrapped in order to reduce our footprint in the new facility.

Three of the trades crews were integral in security warranted upgrades to the Howard Avenue Water Treatment Plant. They completed their scope of work under budget and below the private sector bid. Crews completed remaining off season projects and undertook additional seasonal maintenance work at the Linnwood Water treatment Plant.

The Bridge & Iron Painting Crew devoted considerable time to eliminated surplus paints and materials prior to the move from Traser Yard. They worked on various bridges, prepping and painting rollers, railings, and structural steel. The crew dispatched a graffiti abatement crew each day. Cleaning is coordinated with the Department of Neighborhood Services and the Police Department. Extensive graffiti sweeps are conducted prior to festivals. For the Water Department, several projects were completed at the Linnwood and Howard Plants.

BRIDGE OPERATIONS AREA. In 2005 our operators conducted 13,457 bridge openings for commercial and recreational traffic, a 9% increase over 2004. Eight of the twenty-one movable bridges can be remotely operated from a hub bridge. Winter operations were consolidated with the Broadway Bridge without a drop in service. City Electricians rewired the Plankinton Street Bascule Bridge. They continue to update bridge electrical layouts and circuit designs to current practices thereby eliminating an increasing trend of unreliability. At the end of the season, the Bridge Operator Maintenance Crew and Bridge Electricians cleaned out their respective areas at the Traser Yard and began working on the space made available at 1540 West Canal.

INSPECTIONS AREA. The Inspection Section handled over 12,000 construction permits in 2005. In addition to construction permits, the Inspection 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 a Special Event.

STRUCTURAL DESIGN UNIT. The Structural Design Unit designs and prepares contract documents, and performs construction administration for a wide variety of projects involving bridges, retaining walls, parking structures, and other structures. The unit inspects and develops a Capital Improvement Program for all city maintained bridges and city owned parking structures. It also maintains plans and other records for the city's bridges, parking structures, retaining walls, dock walls, and other structures.

BRIDGE DESIGN AND CONSTRUCTION. The rehabilitation of the State Street Bascule Bridge over the Milwaukee River was let to contract in February of 2005 and construction work started in June. The State Street Bridge has been designated a historic structure, is the oldest remaining Milwaukee style trunnion bascule bridge, and was the first bridge in the city to exhibit architectural features to enhance the bridge aesthetics. The rehabilitation, which is scheduled to be completed in early 2007, will rehabilitate the structural, mechanical, electrical, and architectural elements of the bridge.

The Kilbourn Avenue Bascule Bridge was also designated a historic structure and an outside consultant was selected to prepare final plans to rehabilitate the structural, mechanical, electri-

cal components of the bridge and restore the aesthetic features that warrant the historical designation. Final contract documents are expected to be completed by May of 2006 with a contract letting in September. Work on the Kilbourn Bascule Bridge will start after the State Street Bridge is reopened to traffic.

The Marsupial Pedestrian Bridge over the Milwaukee River was officially opened to the public in November of 2005. The new cast-in-place post-tensioned concrete pedestrian bridge is hung via high strength steel cables from under the existing Holton Street Viaduct and connects the Brady Street Business District with the new housing developments along Commerce St. and the redeveloped Kilbourn Park. The bridge incorporates architectural enhancements, projection and recessed rail lighting, and plaza areas at each landing to provide an enjoyable and safe experience for pedestrians and cyclists.

A contract for the rehabilitation of the Hawley Road Viaduct was let in May of 2005 and construction started in July. The project consists of redecking the bridge, painting the superstructure, and repairing the concrete substructure. The two stage construction, which allows for traffic to remain on the bridge during rehabilitation, is expected to be completed in 2006.

A contract for the rehabilitation of the Glendale Avenue Bridge over Lincoln Creek was let in June of 2005 and construction started in September. The project consisted of redecking the bridge, painting the superstructure, and repairing the concrete substructure. The bridge was reopened to traffic in November.

Final plans and specifications were prepared for both the West Mill Road Bridge over the Menomonee River and the West Bradley Road Bridge over the Little Menomonee River and submitted to Wisconsin Department of Transportation (WisDOT) for contract letting in 2006. Replacement of the existing bridges with single span prestressed girder bridges will be completed in 2006.

Preliminary engineering continued for the replacement of the Highland Boulevard Bridge over the Canadian Pacific Railway (CPRR) and the South 29th Street Bridge over the Union Pacific Railroad (UPRR). Construction of these projects is expected to occur in 2007. Preliminary engineering was started for the replacement of the Humboldt Ave. Bridges over Riverboat Road and the Milwaukee River. The Riverboat Bridge will provide increased vertical clearance under the bridge while maintaining an adjacent ramp for access to the Riverboat Road. The two bridge replacements and associated retaining wall work will be let as one project so as to minimize traffic disruption to the area. Preliminary engineering was started for the rehabilitation of the N. Teutonia Bridge over UPRR. The work will consist of replacing the concrete deck, painting the structural steel, and making repairs to the substructure elements.

A Request for Proposal was prepared and an outside consultant was selected for performing an engineering analysis, cost estimates, and recommendations for the rehabilitation of the North Teutonia Avenue Bridge over Silver Spring Drive. The propose scope includes rehabilitating the bridge using cathodic protection, replacing the railing with crash tested rails, and performing a structural and traffic analysis for the incorporation of a single point intersection to reduce the traffic accidents at the site.

Preliminary plans and cost estimates were reviewed for the construction of a bicycle bridge over Chase Avenue and the rehabilitation of the abandoned UPRR bridges over Greenfield Avenue and Kinnickinnic Avenue. The acquired railroad bridges and new bicycle bridge will eventually become part of the Kinnickinnic River Bicycle Trail funded through a Congestion Mitigation and Air Quality grant.

Construction continued for the Canal Street Bridge over the CPRR and the Canal Street Viaduct over the Menomonee River. The bridges are part of the Canal Street extension from 25th Street to Miller Parkway. The bridges and roadway will provide access to the former Milwaukee Railroad yard and shops for development and accommodate a continuous roadway and multi-use trail from 6th Street to Miller Park.

The removal of an abandoned railroad bridge and construction of a new retaining wall was completed in conjunction with the S. 6th street repaving from Ohio Avenue to Hayes Avenue.

Concept Definition Reports were prepared and funding was obtained through the WisDOT Local Bridge Program for preliminary engineering for the rehabilitation of the Wisconsin Avenue Lift Bridge over the Milwaukee River, S. 29th Street Bridge over Kinnickinnic River, S. Howell Avenue Bridge over the UPRR, W. Hampton Avenue Bridge over Lincoln Creek, and the N. 45th Street Bridge over the Menomonee River. Funding was obtained for preliminary engineering for the replacement of the W. North Avenue and W. Lisbon Avenue Bridges over CPRR,

BRIDGE INSPECTION. This unit performed inspection on 107 bridges for which the City is the maintainer of the bridge. The bridge inspection reports were entered into the Highway Structures Inventory System (HSIS) database and copies were submitted to Milwaukee County and WisDOT. The bridge inspections were performed in accordance with the State of Wisconsin Structure Inspection Manual and National Bridge Inspection Standards.

The 107 bridge inspection reports consisted of 25 fracture critical reports, 36 routine inspections, and 46 interim inspection reports. Bridge inspection reports were also prepared for the 21 moveable bridges and 11 pedestrian bridges.

Load rating analysis was also performed on the Bradley Road Bridge over the Little Menomonee River which resulted in a posting of 8 tons for the bridge. Impact from a truck wheel load caused a hole in the bridge deck resulting in the bridge being closed for one month for repairs. The bridge is scheduled for replacement in 2006.

PARKING STRUCTURES. This unit completed the bi-annual inspections of the City owned parking structures. The inspections adopt a report format similar to that used for bridge inspections with major and minor elements of the parking structure given a numerical evaluation rating. Recommendations were given both for short and long term repair needs accompanied by pictures identifying the deteriorated condition. Using the information gathered from the inspections, recommendations were

given both for short and long term repair needs to Parking Administration and this information was used to prepare a Capital Improvement Program for the parking structures.

A contract was let for recoating of a waterproof traffic deck coating to floor levels 1 through 4 of the Milwaukee-Michigan Parking Structure. The contract started in spring of 2005 and was completed in June.

Final plan and specifications were prepared and a contract was let for work on the MacArthur Square Parking Structure. This work consisted of repairs to the stairwells, painting of the eastern half of the lower level, and reapplication of a waterproof traffic deck coating to the easterly half of the 7th Street level. This work was completed in October and has provided a safer and brighter appearance for this parking structure.

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 2005.

Construction was completed for the Riverwalk Downtown Connector that connects the Bank One Riverwalk with the Historic Third Ward Riverwalk. The Phase 3 riverwalk for the River Bridge residential project along N. Water Street was substantially completed. Plans were reviewed for the 2060 N. Humboldt Riverwalk adjacent to the Humboldt Street Bridge on the north side of the Milwaukee River, the Switch House Riverwalk adjacent to the McKinley/Knapp Street bridge on the west side of the Milwaukee River, the River Renaissance Riverwalk at 102 North Water Street, and Erie Street Plaza at the mouth of the Milwaukee and Kinnickinnic Rivers. Plans, specifications, and the budget were reviewed for the Riverwalk System Upgrade Project which included installation of new riverwalk signage and ornamental trellises for the Downtown Riverwalk system.

Structural analysis was performed for various repair and construction projects including bridges, hollow walks, public buildings, firehouses and bridges with overload vehicles. The following is a summary of some of those projects. A structural inspection, report, and recommendations were prepared for repair of spalled spancrete slab for Milwaukee Police Department Police Station #6. Plans and specifications prepared by a consultant for the massive scaffolding plans for the City Hall Renovation were reviewed and recommendations given for Buildings and Fleet Services. A structural inspection, report, and estimate were prepared for repair of the cracked floor of Milwaukee Fire Department Engine House #6. Plans and specifications were prepared and a contract was issued for new steel bridge grating for the Cherry St. Bascule Bridge. Plans were reviewed and recommendations given for the proposed Potawatomi Casino connector bridge with the 16th Street Viaduct.

Analysis of bridges by this unit for permit overload vehicles has increased almost two fold in recent years as the numbers of permit applications and enforcement has increased. 345 bridge analyses were performed in 2005. The overload review and analysis process was streamlined by this unit to allow a timely response to the permit desk to avoid trucking delays.

ELECTRICAL SERVICES UNIT

Electrical Services serves 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 Services area operates and maintains 722 controlled intersections in the City of Milwaukee. The installation of new traffic controlled intersections was completed at the following locations:

- West Wisconsin Ave. at N 92nd St and N. 95th St.
- W. Forest Home Ave at W. Kinnickinnic River Pkwy
- W. Forest Home Ave at W. Lincoln Ave.
- W. Mitchell St. at S. 13th St.
- W. Mitchell St. at W. Muskego Ave.
- W. National Ave at S. 1st, S. 2nd, S. 5th, S. 6th and S. 9th
- W. Becher St. at S. 6th St.
- W. Canal St. at S. 20th St.
- W. Vliet St at N. Hawley Rd.

This unit performed the required traffic signal work to accommodate various construction improvement projects including:

- W. Silver Spring Dr. (N. 27th St to N. 43rd St)
- N. Teutonia Ave (W. Ruby to W. Villard)
- W. Wisconsin Ave Streetscaping improvement – Phase I and II.
- Marquette Interchange project including complete intersections, adding turn arrows, Opticom and temporary signal relocates.
- Temporary overhead wiring was installed at 39 intersections to accommodate various construction projects.

In addition, various maintenance activities are required to maintain existing City facilities in good operating condition:

- An additional solar powered school crossing signal was installed at the Dover Street School on the city's southeast side.
- Traffic interconnect cable was installed in W. Fond du Lac Ave.(N. 19th St to W. Ely St.); N. Dr. Martin Luther King Jr. Dr (W. Burleigh St to W. Keefe Ave0 and in W. Hampton Ave. (N. 76th St to N. 91st St).
- Cabling and hardware was completed for an additional 20 intersections for the Milwaukee Fire Department Opticom (traffic signal interruption) system.
- Work commenced to upgrade 140 signaled intersections from incandescent lights to LED technology for improved energy savings.
- Ongoing response to signal outages and damaged facilities.

STREET LIGHTING SERVICES. Street Lighting operates and maintains over 72,000 street lights and 12,000 alley lights and associated facilities to ensure City neighborhoods and roadways are well-lit. Personnel responded professionally around the clock to citizen requests, Alderperson's service requests, contractor damages and departmental priorities.

A total of 2,562 primary circuit troubles involving three or more lighting units were repaired in 2005 with 2,459 being repaired within 24 hours (99% success rate). Additionally, a total of 3,091 single unit troubles were repaired with 2,459 being repaired within 30 days (80% success rate.) A total of 300 damaged facilities were repaired from various contractors and other city entities.

This unit performed the required street lighting work to accommodate various major construction improvement projects including:

- N. 76th St (W. Appleton Ave. to W. Grantosa Ave).
- North 84th St. (W. Lisbon Ave to W. Hampton Ave)
- W. North Ave. (N. 4th St to N. 7th St) - new cable, poles and harps and lanterns installed in conjunction with the City hosting the NAACP convention.
- W. Wisconsin Ave. Streetscape (N. 2nd St to N. 4th St).
- W. Wisconsin Ave. Streetscape (Milw River to N. Milwaukee St).
- S. 6th St. (W. Maple St to W. Ohio St)
- W. Blue Mound Rd (W. Story Pkwy to N. 60th St).
- Lighting adjacent to new Third Ward Market
- N. Water St (W. Juneau Ave. to W. Pleasant St)
- Marquette Interchange
- W. Canal Street (N. 6th St to N. 25th St)

SUPPORT SERVICES UNIT

The Support Services Unit is responsible for managing all DPW Inventory operations at three sites, providing shop maintenance support functions to the Streets & Bridges including operation and maintenance of a new asphalt material storage facility. In 2005, the Store/Inventory area of the Water Works was combined into this unit with the move to the new Field Headquarters facilities. In addition, the existing City asphalt producing plant was not replaced with the relocation of this work group to the DPW Field Headquarters. A new asphalt loading and storage facility was designed and incorporated into the new site design to meet the hot asphalt mix needs of City work crews. Vendors supply the material for loading into the City's storage facility and dispensing to crews as needed during the workday. This unit also manages the physical inventory of parts, materials, tools and supplies for various City agencies including Water Works, Electrical Services, Traffic Sign shop, Facility Maintenance, Sewer Maintenance and Underground Services.

INFRASTRUCTURE (ENVIRONMENTAL SECTION)

The Environmental Section is financed through the Sewer Maintenance fund and is responsible for the engineering work required for the programming, funding, design and installation of sanitary, storm and combined sewer facilities. The Section is also responsible for preparing plans and specifications for building sewers and water services and maintaining the sewer records. The Section also handles the administration and implementation of the City's two Wisconsin Pollutant Discharge Elimination System permits. This includes reviewing storm water management plans, testing storm system outlets for illicit connections and reporting sanitary to storm sewer crossover activity. In addition, the Section performs activities as part of the infiltration and inflow reduction program on flow monitoring, smoke testing, TV inspections, building inspections and manhole inspections and rehabilitation.

In addition, the Section, through its Underground Operations Unit, is responsible for the inspection, maintenance, and repair of the City's sewer mains, manholes, catch basins and storm inlets. The construction and maintenance of the underground conduit system is also performed by Underground Operations.

Following are highlights of the work performed in 2004 by the Environmental Section.

SEWER DESIGN AREA

The Section designed and let to contract 1.41 miles of new sanitary sewers, 1.03 miles of new storm sewers, 10.63 miles of replacement sewers and 2.76 miles of sewer lining for a total cost of $25.56 million. These projects included:

WEST CANAL STREET PROJECT. The extension of West Canal Street from 25th Street to Miller Park proceeded in 2005 with a $17 million contract that included $3.23 million for new sanitary and storm sewers and relay of existing combined sewers.

The scope of the work on this project included construction of 4394 feet of new sanitary sewer, 2155 feet of new storm sewer and 1257 feet of combined sewer relay to accommodate sewer needs for the existing and potential industrial and commercial developments. All the additional storm water runoff generated by the extension of West Canal Street and the proposed Menomonee Valley Improvement Project will be discharged into the proposed storm water park facilities under the 35th Street viaduct before being discharged into the Menomonee River.

WEST JUNEAU AVENUE PROJECT. A $2.12 million contract was awarded for the lining and relay of the existing 120-inch diameter brick combined sewer located in West Juneau Avenue (extended) under the Harley Davidson Company office complex. The existing combined sewers were over 110 years old and in poor structural and hydraulic condition. Displacements to the existing sewers were observed at various locations because of poor ground conditions. The existing brick combined sewer pipe was rehabilitated by slip lining a 110-inch diameter fiber glass mortar liner pipe inside the existing sewer. Approximately 165 lineal feet of 10' wide x 7' high precast reinforced box combined sewer was also installed to clear the West Highland Avenue bridge restoration project.

This is one of the largest diameter-lining projects performed in the City of Milwaukee. Only one work shaft along the project's length was used to minimize surface disturbances and disruptions to area residents and the Harley Davidson office complex and reduce the cost of the project compared to other methods of installation. The entire work on this project was completed in August of 2005.

WEST HISTORIC MITCHELL STREET PROJECT. A contract was awarded in West Historic Mitchell Street from South 11th Street to South 19th Street, in South 22nd Street from West Orchard Street to West Maple Street and in various adjacent streets within the area. These projects were performed to replace structurally and hydraulically inadequate combined sewers. The total cost of this project is $2,108,000. Approximately 7,400 feet of combined sewers ranging in size from 15-inch to 54-inch were relayed.

NORTH BARTLETT AVENUE AND EAST LINNWOOD AVENUE PROJECT. A contract was awarded in North Bartlett Avenue from East Locust Street to East Linnwood Avenue and in East Linnwood Avenue from North Newhall Avenue to North Maryland Avenue. These projects were performed to replace and rehabilitate structurally and hydraulically inadequate combined sewers. The total cost of this project is $1,057,000. Approximately 2,192 feet of sewer ranging in size from 15-inch to 66-inch were relayed and 846 feet of 48-inch diameter sewer was lined using a cured-in-place liner. The City will take advantage of this construction at the intersection of East Linnwood Avenue and North Bartlett Avenue and will install a new traffic calming device similar to other devices in the area during pavement restoration.

NORTH HAWLEY ROAD SEWER SEPARATION PROJECT. As a part of various flow reduction initiatives, this sewer relay project was constructed in North Hawley Road from West State Street to West Martin Drive. The total cost of this project is $ 350,000, and resulted in approximately 1000 feet of 30-inch diameter storm sewers being relayed. The main objective of this project was to separate the storm water flows from the combined sewer service area in order to remove storm water flow going to the Milwaukee Metropolitan Sewerage District's (MMSD) treatment plant facilities.

The storm water removed from the combined sewer system will be conveyed to the Menomonee River. This reduces the quantity of storm water that flows to and is treated by the MMSD treatment facilities. This reduction in flow increases the available capacity for treatment of sanitary sewer flow during periods of heavy rainfalls, and thereby reduces sewer overflows and basement backups.

Water quality of the river was maintained by providing treatment for the first flush from the storm sewer. "First flush" is the runoff that occurs at the beginning of a rainstorm. The first flush carries with it concentrations of pollutants from impervious surfaces that have accumulated during the period of dry weather between storms, which could be one day or several months. Components of first flush that are particularly easy to visualize are car and truck engine greases and oils that accumulate on roadways.

MARQUETTE INTERCHANGE SEWER RELAY PROJECT. As a result of lowering portions of the Marquette Interchange freeways in the northbound and southbound directions between West Wisconsin Avenue and West North Avenue, relay of existing combined sewers located in West Juneau Avenue between North 9th Street to North 12th Street and West Vine Street between North 10th Street to North 12th Street were necessary. Approximately 3000 feet of 72-inch diameter combined sewers were built in tunnel sections at an approximate cost of $ 7,000,000. The City was responsible for 10% of the construction cost ($700,000) with the Wisconsin Department of Transportation (WisDOT) paying the remaining 90%.

STORM WATER MANAGEMENT AREA

STORM WATER MANAGEMENT PLAN REVIEW. On January 1, 2002, the City adopted a revised storm water management ordinance. Regulations imposed by both the Wisconsin Department of Natural Resources (WDNR) and the Milwaukee Metropolitan Sewerage District (MMSD) are reflected in this ordinance. The ordinance requires that a storm water management plan be submitted to and approved by the City Engineer for construction or reconstruction activities on parcels of land greater than one acre or where there will be a net increase of 0.5 acres of impervious surface. This change has resulted in an approximately 50% increase in the number of storm water management plans being submitted and approved.

The City has received a total of 950 SWMPs since the implementation of the program in 1993. The total number of SWMPs received since the ordinance was revised in 2002 till the end of year 2005 is 470 SWMPs. In 2005, the Section reviewed 127 storm water management plans, with 112 approved that same year.

ILLEGAL/ILLICIT DISCHARGE TESTING. Field-testing of storm sewer outfalls for illegal/illicit discharges continued throughout the City. The dry weather testing consists of a visual and chemical test for pollution at each outfall. The Section performed a total of 863 dry weather tests during 2005. Of these tests, 268 were at the outfall and 595 were at points upstream from the outfall.

The dry weather testing identified nine locations as being potential sources of pollution. Property inspections, sewer smoke testing and lateral dye testing were performed at these locations resulting in the identification and disconnection of one cross-connection. In addition, one location was referred to the WDNR for enforcement action and three locations received corrective action orders from the Department of Neighborhood Services.

STORM WATER INFORMATION & EDUCATION. In 2004, the City was awarded a grant from the WDNR for cost sharing of projects that inform and educate the public about storm water pollution and provide practical solutions for prevention. The projects are being implemented during 2005 and 2006 and will address requirements of the City's storm water discharge permit from the WDNR.

Through the grant funds, the Section developed a website dedicated to storm water management in the City of Milwaukee. The website provides information on storm water pollution prevention, storm water management plans, and construction site erosion control. It can be accessed through links on the City's main website or directly at www.milwaukee.gov/stormwater.

On November 17, 2005, the Section hosted a full day event dedicated to storm water management in the City of Milwaukee. The event, titled "The Milwaukee Cleaner River Conference", was attended by approximately 155 contractors, architects, consulting engineers, environmental organizations, and City employees. Twelve speakers covered topics that included: local and state storm water management regulations for development, innovative best management practice application, and an overview of the City's storm water management program.

I /I REDUCTION PILOT PROJECTS. During 2005 and 2006, the Section is implementing three I /I reduction pilot projects as presented by Mayor Tom Barrett in his 2005 City Budget. The pilot projects aim to reduce the amount and rate of clear water entry into sanitary and combined sewer systems with the goals of preventing the hydraulic overloading of sewers and sewage overflows during severe storm events. The projects include: (1) the disconnection of roof downspouts from combined sewers, (2) the installation of flow controllers in street catch basins, and (3) the disconnection of foundation drains from sanitary sewers.

Disconnecting roof downspouts removes clear water from the combined sewer system and allows the water to be used for lawn and garden irrigation. A targeted area for downspout disconnection was selected on the City's west side. A public outreach and involvement campaign was implemented by a professional marketing firm to solicit the voluntary participation of target area property owners. Roof downspouts were disconnected by property owners, a City-hired contractor, and City forces. Pre-project and post-project sewer flow monitoring will be analyzed to determine the effectiveness of disconnecting downspouts.

Installing flow controllers in street catch basins slows the rate at which runoff enters the combined sewers system to minimize peak sewer flows during and shortly after severe rainstorms. Two targeted areas for the flow controller installation were selected on the City's west side. Seventy-nine (79) flow controllers were installed by City forces within the two target areas. Public outreach regarding this project was provided through a professional marketing firm. Pre-project and post-project sewer flow monitoring will be analyzed to determine the effectiveness of the flow controllers.

Disconnecting foundation drains removes clear water from sanitary sewers and directs it to storm sewers or lawn areas. The Northlawn public housing complex was selected as the target area for the foundation drain disconnection project. During 2006, the project will be designed by Section staff and constructed by City-hired contractors. Pre-project and post-project sewer flow monitoring will be analyzed to determine the effectiveness of disconnecting foundation drains.

INFILTRATION AND INFLOW REDUCTION PROGRAM AREA

SANITARY SEWER FLOW MONITORING. A total of 31 sanitary sewer systems were monitored in 2005 for various reasons. Flow monitoring data is analyzed to determine the quantity of I/I in a system, flow restrictions, MIS surcharges, and other problems that may lead to backwater complaints and/or overflows. Fifteen of the systems were monitored as a result of the stipulation agreement reached between the State of Wisconsin and the communities within the Milwaukee Metropolitan Sewerage District (MMSD) service area.

SANITARY SEWER EVALUATION SURVEYS. In 2005, a contractor was hired to perform dye testing of 128,586 lineal feet of storm sewer at various locations throughout the City. The storm sewers had previously been identified by smoke testing as potentially leaking into sanitary sewers. The primary tasks of the dye testing were to determine locations and rates of transference of dyed water from the storm sewers to the sanitary sewers. The results of the contract will indicate which storm sewers and sanitary sewers can be repaired to reduce I/I entering the sanitary sewer system. The cost of the dye-testing contract was $424,976.

MANHOLE REHABILITATION PROGRAM. In order to conform to the MMSD's 2010 Facilities Plan goal of reducing infiltration and inflow in sanitary sewer systems, the Section began a sanitary manhole inspection and rehabilitation program in 1998. A contract was let in 2005 for the repair of 684 sanitary sewer manholes at a cost of $533,462. 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.

STORM WATER INLET REHABILITATION. A contractor performed dye-testing of stormwater inlets and storm sewers in 2003. From this testing, several stormwater inlets were identified as leaking into sanitary sewers, sanitary laterals and sanitary manholes. In 2005, we awarded a contract, in the amount of $212,829, to replace 32 stormwater inlets and to line 649 linear feet of stormwater drains. This work reduces the amount of I/I entering sanitary systems.

SUPERVISORY CONTROL AND DATA ACQUISITION (SCADA) SYSTEM. A Supervisory Control and Data Acquisition (SCADA) system that provides remote monitoring and control of the City's five lift stations, 83 sanitary bypass pumps and 15 rain gauges is now managed and updated by City staff. The SCADA system allows staff to remotely control the lift stations and bypass pumps if necessary. In addition, it provides real time information on the operational status of each lift station and bypass pump. Rainfall information is also collected in real time and is provided to the Milwaukee Metropolitan Sewerage District for their use.

AUTOMATED MAPPING AND DRAFTING AREA

In 2005, this section drafted a total of 226 sewer engineering plans. This represented a slight increase over the total of 212 plans drafted in 2004 and an increase of 17 plans over the total of 209 plans drafted in 2003: a total increase of 8%. This was achieved through the effort expended in effectively coordinating Environmental Engineering drafting and engineering functions towards consistent and continuous staff productivity gains.

BUILDING SEWERS AREA

In 2005, work continued on the project of digitizing building sewer laterals to the Geographic Information Systems (GIS) graphical maps. This digitized lateral information is added to the existing digitized maps of sewer mains. The outcome of this multi-year project will be the retirement of the present hand-drawn sewer plat pages and the elimination of the duplication of effort expended in maintaining them. In addition, the inclusion of this sewer lateral data on the digitized maps will make them more useful to our staff for sewer system analysis. An additional benefit of this project will be the ability to share this lateral information with other City departments on the GIS system. Concurrent with this work were continued efforts to improve the ease of use and functionality of the GIS tool set in digitizing sewer maps, improved verification of the accuracy of digitized files, as well as an improved and simplified capability to plot page maps.

In 2005, we have initiated to "transform" the digital sewer maps in conjunction with the digitization of sewer laterals. In this transformation process the boundaries of sewer quarter section maps are graphically adjusted to correctly match up the adjoining maps in pursuit of the ultimate goal of unifying one fully contiguous City sewer map. Initially, Environmental Engineering had utilized an ITMD grant fund to hire a specialized contractor to do this transformation. Prior to the end of fund money, our Section staff was trained by the specialized person to continue his work, resulting in a substantial savings.

This area processed 283 permits in 2005. One thousand thirty-eight (1,038) Deferred Sewer Charge statements were processed in 2005.

Other responsibilities of the Unit include:

- Provide the Sewer Design Area with street and utility information for new and replacement sewer projects
- Draw CAD sewer construction plans for capital program work
- Assist citizens and plumbing contractors with sewer and sewer lateral questions

- Determine and collect sewer assessment income for the City from new land developments
- Update and provide sewer system plans for design studies and general reference
- Review completed sewer contract construction reports and "as-builts" and then update original plans, sewer databases, sewer plat pages and digitized graphic maps
- Prepare sewer construction sketches for use at public hearings
- Provide easement plans for sewer construction projects
- Process plumbing and building permits

UNDERGROUND OPERATIONS UNIT

UNDERGROUND OPERATIONS. Underground Operations is responsible for cleaning, inspecting and repairing the City of Milwaukee's sanitary, combined and storm sewers, manholes, catch basins and storm inlets. This includes responding to and investigating complaints of backwater and street ponding throughout the City Of Milwaukee. In addition, Underground Operations inspects and repairs sanitary, combined, storm sewer and communication manholes, catch basins and storm inlets on streets prior to the paving work being completed.

During 2005, 92.9 miles of sewers were examined, 383.6 miles of sewers were cleaned and 22,360 catch basins and storm inlets were cleaned. In addition, we responded to 8,002 service calls.

In 2005, Underground Operations installed 30,000 feet of underground conduit in South 6th Street from West Maple Street to West Ohio Ave. Other locations include: North Hawley Road from West Wells Street to West Vliet Street 17,684 feet of underground conduit installed; North 10th Street from West Juneau Avenue to West State Street 4,800 Feet; East Michigan Avenue from North Lincoln Memorial Drive to North Harbor Drive 2,466 feet.

STORM INLETS. In order to reduce street debris run-off from entering the rivers and creeks in the City and affecting water quality, sump storm inlets are being constructed in place of the bowl type inlets. The sump catches a large portion of street debris material that is vacuumed out by large specialty equipment on a yearly basis before it gets in the sewer system and ultimately creeks, channels, rivers and Lake Michigan. This effort is being done to meet the requirements of our Storm Water Discharge Permit issued by the Wisconsin Department of Natural Resources.

DEBRIS DEWATERING. As a part of the cleaning of sanitary and combined sewers, catch basins, and storm inlets, Underground Operations is also responsible for the disposal of the debris removed. The wet material is currently taken to Waste Management, Inc. or United Water, Inc. for disposal.

PARTIAL COMPLETION OF CANAL STREET PROJECT SIGNALS RENEWAL OF THE MENOMONEE VALLEY

Mayor Tom Barrett, Department of Public Works Commissioner Jeff Mantes, Executive Director of the Menomonee Valley Partners Laura Bray, City Engineer Jeff Polenske, Southeast Region Manager Dewayne Johnson, Department of Transportation and Melissa Cook, Department of Natural Resources and Brian Swenson, Milwaukee Transportation Partners (MTP) celebrated the completion of the portion of the Canal Street Project from 6th to 25th Streets in October 2005. The Canal Street Project represents an unprecedented example of intergovernmental and private business cooperation between the City of Milwaukee, the State of Wisconsin, the Department of Transportation, the Department of Natural Resources, Milwaukee Metropolitan Sewerage District, Menomonee Valley Partners, C. P. Rail, as well as numerous other partners. These groups all came together to accomplish multiple objectives in conjunction with the public works project.

Mayor Tom Barrett said, "The Canal Street project provides critical infrastructure to serve existing industries and facilitate redevelopment of the Central Menomonee Valley to increase family supporting jobs adjacent to the City's most densely populated, economically distressed, and minority neighborhoods".

Some of the recent developments in the Valley include the Harley-Davidson Motor Company Museum and offices at 6th and Canal Street and the expansion of the Potawatomi Bingo Casino. Menomonee Valley Partners has recently acquired the 13 acre parcel formerly owned by Emmpak Foods. It has 900 feet of frontage on Canal Street. They are actively marketing the site to businesses.

The primary objectives include providing an effective traffic mitigation route during the reconstruction of the Marquette Interchange and facilitating redevelopment of the Menomonee Valley. Project elements included segments of the DNR managed Hank Aaron State Trail (HAST); relocation of an existing railroad spur within Canal Street; the reconstruction of the street from 6th to 25th Street; and a new modern roundabout, and a bio-retention facility and storm water lift station at the intersection of 25th and Canal Street.

The press event was attended by more than 100 people including representatives from Potawatomi Bingo Casino, Department of Natural Resources, Department of Public Works, MTP and sub consultants, members of the Menomonee Valley Partners, and WE Energies among others.

The Canal Street Project will eventually stretch to Miller Park. The extension project is ongoing and will be open to traffic by April 1, 2006. Extensive traffic control equipment to facilitate traffic flow during Miller Park events will be implemented in a separate contract this Spring/early Summer.

Executive Director of the Menomonee Valley Partners Laura Bray at podium, DPW Commissioner Jeff Mantes and Mayor Tom Barrett. Ms. Bray stated that the reconstruction of Canal Street was a key component to the reinvestment of the Menomonee Valley business corridor.

MILWAUKEE WATER WORKS

Zeidler Municipal Building
841 North Broadway, Room 409
[414] 286-2830
www.mpw.net

Milwaukee
Water Works

Safe, Abundant Drinking Water.

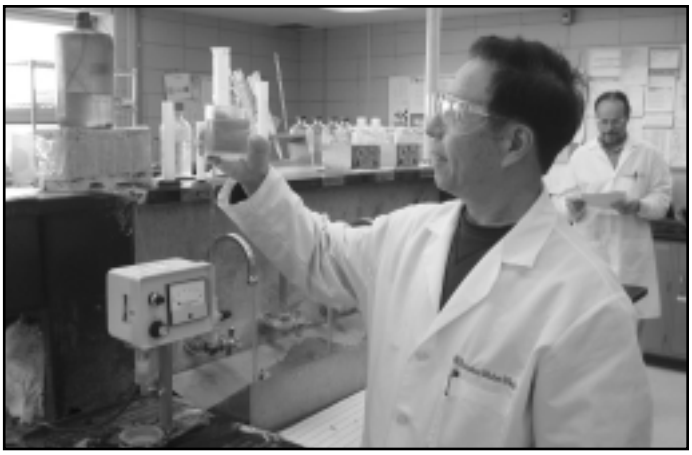
Carrie Lewis, *Superintendent, left*
Laura Daniels, *Administration and Projects Manager*

The Milwaukee Water Works (MWW) provides safe, abundant drinking water to the City of Milwaukee and 14 communities.

The Water Works' mission is to provide drinking water that is exceptional in quality and is healthier than any standards set by regulators. The Milwaukee Water Works exceeded that goal throughout 2005.

The MWW is a self-financing enterprise owned by the City of Milwaukee and regulated by the Public Service Commission of Wisconsin, the U.S. Environmental Protection Agency, and the Wisconsin Department of Natural Resources.

Lake Michigan water is treated at the Linnwood and Howard Avenue plants. The water passes through multiple treatment process barriers that remove illness-causing microorganisms. The primary form of disinfection is ozonation, in which highly reactive ozone is bubbled through the water to destroy illness-causing microorganisms, control taste and odor, and reduce chlorinated disinfection byproducts. Following inactivation of microorganisms, the processes of coagulation, settling, and filtration remove additional particles. A final disinfection procedure ensures safe, high quality drinking water throughout the distribution system.



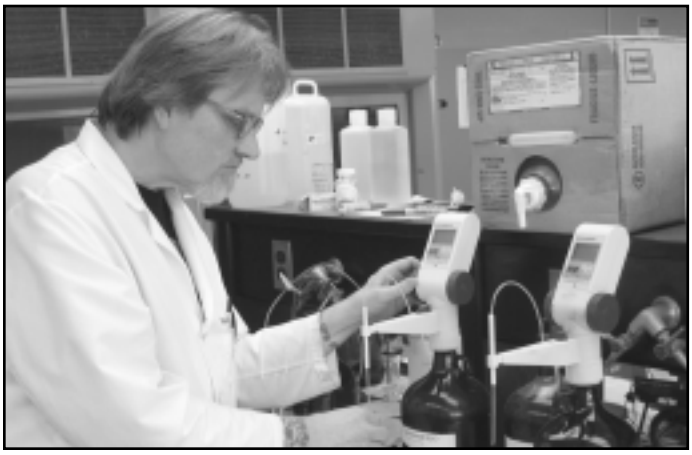
HIGHLIGHTS OF 2005

EXCEPTIONAL WATER QUALITY. Milwaukee water is exceptional in quality and is healthier than any standards set by water quality regulators. Milwaukee Water Works water quality surpassed all federal and state standards for water quality in 2005. The Environmental Protection Agency requires public water utilities to test for 90 regulated contaminants on a regular basis. Performing beyond all requirements, the Milwaukee Water Works tests for over 450 known contaminants to assure the highest quality water possible.

Coca-Cola Enterprises recently chose to expand its bottling line to produce Dasani for distribution to seven Midwest states, citing the high quality of Milwaukee water that forms the basis for the product.

ABUNDANT WATER. In 2005, the Water Works delivered over 39 billion gallons of exceptional quality drinking water. Average daily pumpage was 122 million gallons per day (MGD) while maximum treatment capacity was 380 MGD. There is an abundant supply of treated water for manufacturing and water-intensive industry.

AN ASSET TO TAXPAYERS AND THE CITY. The Milwaukee Water Works serves as a source of revenue for the City of Milwaukee. While the Water Works collected $71.4 million to finance its operations in 2005, the utility paid to the city $7.7 million in the form of a payment in lieu of taxes (PILOT). This payment was used to directly offset the city tax levy, reducing the 2005 tax rate by $0.30 per thousand dollars of assessed valuation. The Water Works pays other city departments for the municipal



services it uses and for the payment of employee benefits. In 2005, this payment, in addition to federal taxes and other payments, totaled $14.5 million.

WATER USE IN DECLINE. There has been a steady decline in the volume of water sold by the Milwaukee Water Works during the past four decades. This affects the ability of the MWW to collect sufficient revenues to cover operating costs that do not decline, while keeping rates down. Factors leading to the decline in water sales include the loss of customers in water-intensive industry, for example, brewing and automotive manufacturing; water- and energy efficient appliances and industrial processes, and water conservation measures. More recently, from 2000 through 2005, the volume of water sold to industrial customers dropped by 18.4%; the volume of water sold to all MWW customers dropped 6% in those five years.

In 2005, Milwaukee' second largest commercial customer, LeSaffre Red Star Yeast, announced its move from Milwaukee to Cedar Rapids, Iowa. The impact on Water Works revenue is estimated to be a decrease of $1.1 million per year.

A marketing initiative begun in 2003 aims to generate additional sales of water by encouraging water-intensive industry to locate in the Milwaukee service area and for existing enterprises to expand here.

In August 2005, the Water Works began receiving additional revenue by providing service to a portion of the City of New Berlin. The Milwaukee Common Council and Mayor John O. Norquist approved a water contract in 2003, and physical connections were completed during the next two years. The agreement is estimated to generate $600,000 in annual revenue to the Milwaukee Water Works while providing relief from water supply shortage and contamination issues to some areas of New Berlin.

MILWAUKEE WATER IS AN EXCELLENT VALUE.
Milwaukee water is an excellent value. The average cost per person per day for water in 2005 was 8.5 cents. Tap water delivers clean water to protect public health and enhance the quality of life in Milwaukee, provides for fire suppression, and supports the regional economy.

WATER QUALITY SECTION

Water Quality Section staff trained Water Treatment Plant Operators to facilitate management of the filter bed inspection and maintenance program by the Plants Section. This will increase productivity and the number of filter bed inspections completed each year. Microbiology staff improved various aspects of the sampling and monitoring program.

Water Quality Section staff, as a part of the "Distribution Water Quality Team," researched and proposed improvements and initiatives to enhance the water quality in the distribution system, based on a report by the National Research Council.

2005 was the first full year using a Computerized Maintenance and Management System (CMMS) to schedule and document routine maintenance and quality control checks on over 175 pieces of online water quality monitoring instrumentation at the water treatment plants. The data collected in the program is critical to optimizing the water treatment process and assuring the highest quality water. Microbiology staff updated methods and improved detection capability for the distribution testing program.

Staff worked with the MWW Marketing Specialist to improve the content and layout of the annual Water Quality Report with the first-ever Spanish language edition, expanded coverage on the MWW website, and access to more data and information. One outcome was a continued drop in the number of calls and inquiries to the Water Quality Hotline number, now at its lowest level since 1993, and averaging less than a dozen calls a month.

BUSINESS SECTION

ACCOUNTING SERVICES. The Accounting Services group provides budgeting and accounting services for the Water Works. These include developing the budget, monitoring and analyzing expenditures, processing contract and other vendor payments, and payroll.

The group is also responsible for financial analysis and reporting of the enterprise's operations. This is accomplished in compliance with two separate reporting systems. The first is reporting in compliance with Generally Accepted Accounting Principles (GAAP), which is the basis for the enterprise's audited financial statements. The second reporting deals with complying with the requirements of the Public Service Commission of Wisconsin (PSC), the utility's oversight agency, and is used to provide proper reporting and interaction with the PSC. The combined reporting functions serve both internal and external users of the financial information of the Water Works.

METER SERVICES. Employees in the Meter Reading Unit read residential water meters on a quarterly basis. Using wireless radio transmitters, Automated Meter Reading (AMR) technology remotely reads meters from a van passing by each residence and then transfers the data into the billing system. In 2005 this unit performed 612,898 meter readings, reading 98% of the meters installed.

"A milestone event protecting the Great Lakes," Wisconsin Gov. Jim Doyle (l) termed the December Leadership Summit of the Council of Great Lakes Governors in Milwaukee as the group signed the Annex 2001 Implementing Agreements. Pictured with Doyle is Dalton McGuinty, premier of Ontario, Canada. Doyle said the agreement would "ensure sustainable use of water resources" among the Great Lakes states and Canadian provinces.

Meter reading staff performed 12,760 manual reads involving investigations, larger residential and commercial accounts, and meters located in hard-to-read areas. Clerical staff mailed 1,239 high usage letters notifying customers of substantially higher water usage to prompt them to check for water leaks.

Commercial Meter Readers manually read the meters of the 1,000 largest customers on a monthly basis; there were 21,842 readings in 2005. Many of these large meters are located in underground vaults, and monitors and confined space entry permits are required to safely read the meters. Commercial Meter Readers compare current usage to past usage to identify changes in seasonal or monthly patterns and report discrepancies for timely corrective action.

Water Meter Investigators provide services to customers who report high bills and questionable account information. In 2005, they made 6,720 visits to customer locations to verify meter, address, and water use information. They also inspect interior plumbing fixtures to locate leaks for residential and small commercial customers.

Meter Repair Shop personnel ensure that water meters accurately represent water use, provide the customer fair value, and provide the Water Works appropriate revenue for water delivered. The staff tests and repairs large and small water meters at the shop and install, exchange, and test meters in the field.

Large (three-inch and greater) meters are typically used in industrial applications and are not yet included in the AMR program. MWW tests these meters according to PSC requirements. Testing of large water meters involves isolating the meter and confirming its accuracy by running a known volume of water through the meter. This is accomplished by one of five field testing crews using a portable certified test meter. Large turbine and electronic/magnetic meters are used to determine the water usage of large users, such as wholesale communities. Because of the high volume of water used, these meters are monitored 24 hours a day.

During 2005, the Meter Shop installed over 164 hose connections and handled almost 11 miles of hose. These connections enable service-provider customers to remain open for business while repairs are performed on nearby water mains. Meter Shop personnel are on call 24 hours a day to support these activities.

Each year the Water Works is required to test a statistically determined random number of residential meters. This quality control method ensures the equipment provides the most accurate reading possible. Meter Shop staff also installs meters at new water services.

CUSTOMER SERVICE. Customer Service employees respond to telephone inquiries and customers who visit the service counter in the Zeidler Municipal Building. Customer Service Representatives (CSRs) resolve billing inquiries and schedule meter appointments. An Interactive Voice Response (IVR) system provides customers telephone access to their account information on a 24-hour basis.

The new Milwaukee Water Works logo and tagline, "Safe, Abundant Drinking Water" are proudly displayed on MWW vehicles. The two reinforce the reliability and quality of Milwaukee water.

Customer Service Representatives, shown here with Supt. Carrie Lewis and Water Business Manager Earl Smith, handle over 62,000 telephone inquiries and 50,000 customer service visits in a year.

The IVR processed 126,475 calls during 2005. Many customers prefer to speak directly with a Customer Service Representative, and those employees served 61,587 customer telephone contacts. CSRs hosting the service counter answered 4,166 customer inquiries, and processed 61,369 cashiering transactions and 50,350 payments made at the service counter.

A new Customer Information and Billing System was installed in June. The new enterprise database and browser interface streamlines business processes, improves reporting and billing capabilities, and provides convenient access to account information. Work is underway to provide customer self-service account access via the Internet.

BILLINGS AND COLLECTIONS. This group generates and collects the quarterly Milwaukee Municipal Services Bill. The bill includes charges for drinking water, Milwaukee Metropolitan Sewerage District (MMSD) sewage treatment, and the Local Sewerage Charge, the Storm Water Management Charge, the Solid Waste Charge, and the Snow and Ice Charge. It is cost-effective to include all of the charges on one bill. MWW manages the billing and forwards the collected charges to the Milwaukee city treasurer for distribution to city departments and the MMSD. In 2005, billing statements totaling $132 million were mailed on schedule to the utility's customers.

WATER MARKETING. The Water Marketing Specialist teams with the Department of City Development (DCD) and other Milwaukee economic development efforts to recruit water-intensive businesses to Milwaukee, and to retain existing business and industry that use large quantities of treated water. Activities focus on raising awareness of the benefits of Milwaukee's water quality, quantity, and value. The specialist serves as liaison with existing large water customers, and uses elements of the marketing plan to improve utility communications and public education.

Milwaukee Public Works Commissioner Jeffrey Mantes and New Berlin Mayor Jack Chiovatero turn the valve to bring Milwaukee water to a portion of New Berlin that lies within the Great Lakes Basin. The agreement to sell water to New Berlin is estimated to generate $600,000 in revenue per year to Milwaukee while New Berlin gets some relief from water supply and radium contamination problems.

Representatives of suburban municipalities that purchase Milwaukee water meet once a year with Milwaukee Water Works managers for a briefing on operations and to learn about new regulations and treatment techniques.

In 2005, a joint recruiting effort with Department of City Development (DCD) led to a Cintas Corporation decision to locate a new industrial laundry facility on city property on the northwest side. The firm plans to create up to 125 new jobs and would be a major customer of the Water Works.

Marketing efforts also led to retention of Coca Cola Enterprises (CCE) in Milwaukee. Staff assisted DCD and Forward Wisconsin with presentations at the International Economic Development Council annual meeting in Chicago and BIO2006 in Chicago. Staff also provided outreach to Milwaukee business, serving on Mayor Tom Barrett's Business Retention & Expansion Team.

Marketing and public relations strategies included development of educational and communications tools including a new logo and tagline, "Safe, Abundant Drinking Water." This distinguishes the MWW from the Milwaukee Metropolitan Sewerage District ("The clean water people"). "Safe, Abundant Drinking Water" also reinforces the reliability and quality of Milwaukee water.

Several publications became available in English and Spanish in 2005, including brochures and door hangers and the annual report. On-hold messages for the new IVR system included informational items about Milwaukee water. The MWW website, www.water.mpw.net, now includes plumbing and water service rules, regulations and specification books, once an expensive pile of paper to duplicate for customers. From June to August, a public awareness campaign worked to discourage the dangerous and illegal opening of fire hydrants by the public.

TECHNICAL SERVICES SECTION. These employees maintain the Water Works' information processing network and equipment. During 2005 Technical Services completed the physical restructuring of the Water Works' primary data center, including a new network backup. A second network backup will be installed offsite in 2006 as part of the MWW disaster recovery plan.

Staff provided technical support for the Customer Information System (CIS) replacement project. In accord with a move to "best

HYDRANTS ARE FOR FIGHTING FIRES, NOT FOR FUN

In response to a rising number of illegally opened fire hydrants in late spring as the weather began to warm, the Milwaukee Water Works teamed with the Milwaukee Fire Department and Milwaukee Public Schools (MPS) for a public awareness campaign to stop the illegal openings.

Mayor Tom Barrett and Superintendent Carrie Lewis kick off the campaign

The Fire Department provided fire hose and sprinkling devices for "Cool Spots" at MPS-supervised school playgrounds and the Water Works supplied water and turn-on service at nearby hydrants.

The information campaign, in English and Spanish, was carried in posters, flashcards, news coverage, and public service announcements, stressed these points:

IT'S DANGEROUS

- Breaking open a hydrant makes it unusable to put out a fire
- Lowers water pressure and hampers firefighting
- Strong spray hazardous to children and motorists may not see them in the spray
- Spray obstructs the view of motorists and can cause accidents

IT'S A CRIME

- $1,000 fine or 30 days in jail for tampering with a hydrant

COSTLY TO ALL WATER USERS

- Hydrant open one hour = water customers pay $227
- Hydrant open four hours = water customers pay $883
- Damaged hydrant = $850
- Broken hydrant = $3500
- Loss of a precious resource, water
- Buildings are flooded = property damage

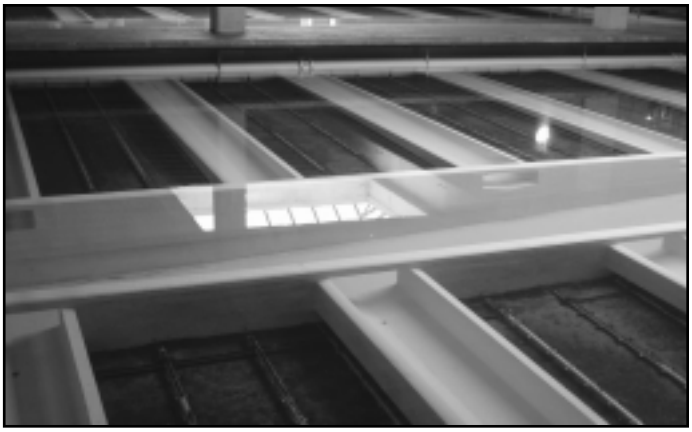
practices" wherever feasible, domain controllers and applications servers were reconfigured, the aging network file and print server were being replaced, and firewalls were purchased and deployed to improve security.

WATER TREATMENT PLANTS

In 2005, the Linnwood Water Treatment Plant pumped and treated 28.6 billion gallons of water while the Howard Avenue Plant pumped 15.9 billion gallons of treated water, a slight increase of 0.4% over 2004.

Chemical and energy costs increased in 2005 due to growing global demands for oil and raw materials. Gulf Coast hurricanes damaged a number of chemical processing plants, reducing the availability of water treatment chemicals. In 2005, MWW water treatment chemical costs increased by 17%.

As part of the continuing filter maintenance program, staff performed complete inspections and maintenance on 10 filters. The work included filter media measurements, replacement of the anthracite coal filter media, replacement of surface wash nozzles and flushing of surface wash pipes, replacement of pipe hangers, and servicing instruments.



Filter beds remove particles from the water after ozone disinfection and coagulation and settling. The water is filtered in each bed through 36 inches of media: 24 inches of crushed anthracite coal and 12 inches of sand. These photos showa bed undergoing cleaning and replacement of the filter media and a filter bedthat was cleaned and is back in service filtering water. The beds measure 51' x 39' x 6'.

During 2005, all filters were operated using the extended run criteria that had been piloted in 2004. This resulted in a more efficient operation of the filter bed, reduced the amount of filter backwashing and washwater used while still maintaining the high quality of filtered water leaving the plant. There were 246 fewer filter backwashes performed in 2005 than in 2004. That saved roughly 125 start/stop operations of the 40 million gallon per day (MGD) washwater pumps and saving 98 million gallons of treated water that would have been used for backwashing.

2005 major capital projects coordinated with Water Engineering staff include upgrading of the 2,400-volt Linnwood plant internal switchgear, removal of trees growing over the clearwells, and planned replacement of the Linnwood Pump Room windows and addition of heating, ventilation, and air conditioning to the Pump Room for 2006.

The MWW Security Manager oversaw a number of security upgrades at Riverside Pumping Station. The Linnwood Control Room now monitors and controls a remote door alarm system and cameras on the pumping station exterior and entry gate, and can remotely open the gate, which was modified to allow security card access. Card readers and new door alarms were added to exterior doors.

During 2005, Plant Automation staff implemented the new computerized Plants maintenance manager system for all preventive maintenance, demand maintenance, and project planning. All Electrical, Instrumentation, and Maintenance staff enter their time onto work orders. Daily reports are available for payroll entry, productivity, scheduled and unscheduled work order, employee assigned work orders, and work order comments reports.

Major work completed at the Howard Avenue Plant in 2005 included repairs to the 84-inch Howard Avenue intake main, a chlorine storage tank, and a liquid oxygen storage tank. Two of the ozone generators were cleaned and serviced and the northeast clearwell baffles were inspected and repaired. At the Texas Avenue station, a raw water pump was rebuilt, and several projects at the booster stations were completed.

Preventive maintenance is an important component of the Milwaukee Water Works' assurance that infrastructure is in top functioning condition. During maintenance of the ozone generators, the open door on the generator reveals the shell in which dialectric tubes are inserted. Electricity flowing through the tubes creates the sparks that transform oxygen into ozone. There are approximately 800 tubes per ozone generator, and the Water Works has a total of seven generators.

DISTRIBUTION

Water Distribution repairs and maintains the water distribution piping system throughout Milwaukee and the retail customer suburbs of Greenfield, St. Francis, and Hales Corners to ensure continuous delivery of sufficient high quality water.

Preventive maintenance systems have evolved into the core of distribution operations. Scheduled activities include repair and maintenance of facilities within every upcoming paving project area, annual flushing of dead end water mains, leak surveys to identify non-surfacing water leaks, and a hydrant inspection program. Distribution researches and uses new technologies for materials, repair parts, and equipment to ensure the distribution system provides a safe conduit to deliver high quality water.

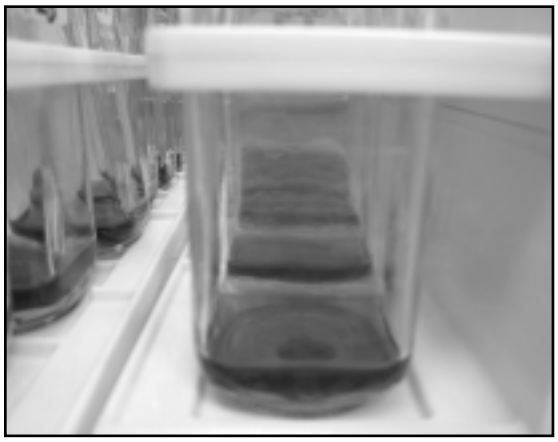
Distribution activities frequently focus on emergency repairs. Distribution conducted 10,425 investigations for various reasons such as reports of leaks in the street and concerns from customers. The Water Distribution Supervisor on duty or on call assesses each emergency situation and determines the necessary action. Repair Crew employees responded to 993 call-outs for emergency, after-hours repair needs to maintain water service with the least amount of interruption and to maintain the integrity of the water distribution system. In 2005, Distribution repaired 671 main breaks in addition to repairs to service laterals, hydrants, valves, and curbstops.

Distribution coordinates new water main installation projects with contractors to plan the water shut-off requirements, operate valves for the shut-off, coordinate water outages with affected customers, provide pipe cutting services with specialty saws for large diameter water mains, and to return the water main to service.

Distribution works closely with the paving programs of the City of Milwaukee and suburban communities to coordinate preventive maintenance activities. The goal is to ensure that buried water infrastructure is in good operating condition prior to the street above being paved. Prior to paving, the water distribution system is reviewed in detail for possible improvements such as installation of additional shut-off valves and elimination of unused piping that, if left in service, could potentially cause future leaks. All valves are exercised and repaired or replaced as needed. Service lateral access boxes are located and inspected to make sure the curbstop is accessible and operable for any future shut-off needs. Leak surveys detect any underground leaks. This preventive maintenance program has successfully reduced the incidence of disruption to new pavement for emergency repairs.

The Milwaukee Water Works maintains 20,000 hydrants in Milwaukee, Greenfield, St. Francis, and Hales Corners. Field staff inspect hydrants using handheld computers to scan the bar code affixed to the hydrant and enter inspection data into that specific hydrant record.

HANDS ACROSS THE HALLWAY: PARTNERSHIPS PAY OFF FOR PUBLIC HEALTH



One of the leading national examples of partnerships among health departments and water utilities and other public health stakeholders marked its tenth year of collaboration in 2005. Milwaukee's Inter-Agency Clean Water Advisory Council (IACWAC) was endorsed by Milwaukee Common Council legislation in 1994 and charged with coordination of water quality issues in the city.

The IACWAC was one of three case studies in the Environmental Protection Agency's publication, "Security Information Collaboratives: A Guide for Water Utilities." (see http://www.epa.gov) The multi-agency team approach was found to be highly relevant to managing security concerns involving water and public health, such as possible contamination of a public water system.

The council had its beginnings when a Milwaukee Water Works (MWW)/Health Department Technical Committee was formed as an interdisciplinary work group of professionals to exchange information, foster communications, provide technical support, discuss water quality issues, and evaluate impacts to the public served by the MWW.

Most importantly, the council serves as an idea incubator and discussion forum that has produced an early warning disease surveillance network and procedures to notify the public and respond in the event of a contamination or disease outbreak. The team developed new methods of analyzing risk for illness-causing microorganisms and viruses. Discussions by this group ultimately led to the formation of the Southeastern Wisconsin Beach Task Force, which coordinates research and education efforts of state and local agencies and community organizations working to solve the problem of beach closings in southeast Wisconsin.

The committee also provides recommendations to the IACWAC in the areas of water treatment process and system operation, and source water impact and influences. In addition to MWW and the Health Department, the group includes representatives from the Milwaukee Department of Public Works (DPW) Administration and Environmental Sections, Milwaukee Metropolitan Sewerage District, and the Wisconsin Department of Natural Resources.

The council has expanded the knowledge base of members and fostered a spirit of cooperation between the agencies involved, all to the benefit of public health.

While flushing each hydrant, the water is sampled using a portable turbidimeter to ensure water quality standards are met or exceeded throughout the distribution system. Any hydrant defects noted from the inspection are reported for repairs. If a hydrant is found to be inoperable, MWW notifies the local fire department about the out-of-service status and again when the hydrant repair is complete. For further identification of hydrants, plastic rings were installed to provide fast identification of dead end main hydrants, hydrant out-of-service, restricted use hydrants, and private hydrants, which are not installed or maintained by the Milwaukee Water Works.

The MudDog Hydroexcavator ® uses high-pressure water and a powerful vacuum system to quickly loosen and remove soil from excavation sites. The MudDog injects water into the ground to soften the dirt, then vacuums the dirt into a holding tank. Water Works crews use the MudDog for excavating around pipes and fire hydrants. The equipment provides a quicker way to dig near other underground utilities without damaging them.

WATER ENGINEERING

The Water Engineering Section serves as an in-house resource for the utility. The section is responsive to applied research needs of the utility and coordinates the Capital Improvements Program (CIP). The 2005 CIP budget totaled $20.62 million with $14.8 million to replace water mains and $5.82 million for water treatment process and facility improvements. Capital improvement projects are specifically planned to increase efficiency and maintain the reliability of the entire MWW system.

In 2005, Water Engineering was responsible for project management duties associated with various plant improvements as well as operations and maintenance projects. A project to replace the

Linnwood Plant filter effluent valve operators with new electro-hydraulic operators was completed in January. The Meter Shop roof replacement was completed in May. Plans and specifications were developed for the 2005 construction of a membrane roofing and draining system for the Howard Avenue Plant east clearwell. Other projects included roof replacement and heating and ventilating upgrades at Northpoint Pumping Station, providing additional chemical storage and a chemical meter pump at the Linnwood Plant, and landscaping and tree removal above Linnwood clearwells.

MWW Engineering staff prepared plans and specifications for 0.5 miles of new water main extensions and 12.5 miles of replacement water mains. One hundred sixty-four plans were prepared for these installations within the City of Milwaukee. Plans were designed and reviewed for 20 alterations of water mains for various external projects. Plans were reviewed and approved for 10 suburban projects.

One major water main extension project was the installation of approximately one mile of 12" water main in the realigned West Canal Street from South 30th Street to South 44th Street. This water main will provide service to the redeveloped Menomonee Valley area. Installation of this water main presented a number of challenges. Two sources of supply were required to provide sufficient capacity and reliability of service. On the east end of the project, near South 33rd Street, the existing water facilities were separated from the Menomonee Valley by the Canadian Pacific Railroad property. A railroad license was obtained from Canadian Pacific Railroad, a casing pipe was installed beneath the property, and the water main was then installed inside the casing pipe. On the west side of the project, the water main was installed through a Miller Park parking lot and then below the Menomonee River before connecting at South 44th Street. An easement to install the water main through the parking lot was obtained from the Southeast Wisconsin Professional Baseball Park District, the Milwaukee Brewers Baseball Club, and the State of Wisconsin, and State Building Commission. A Wisconsin Department of Natural Resources permit was required to install the water main within the Menomonee River limits. The water main installation in the river area was done during the winter months to take advantage of the low flow conditions, to minimize the environmental impacts, and to avoid events at Miller Park.

2005 saw continuation of strategic review, planning and construction of the new Marquette Interchange Freeway and its impact on Milwaukee Water Works facilities. Construction in 2005 centered on the "North Leg" phase of work, encompassing Interstate 43 between West Wells Street and West North Avenue. Water construction included a new 30" feeder main freeway crossing at West Juneau Avenue, a 24" feeder main crossing at North 9th Street, and three separate 16" water main crossings at West Highland Avenue, West McKinley Avenue and West Walnut Avenue. The Juneau, McKinley and Walnut crossings required the additional construction constraint of boring casing pipes under the live freeway. In addition, water main relays related to the North Leg freeway work were completed in adjacent local roads. The major item remaining for 2006 construction is a 54" feeder main alteration passing under the proposed northbound West North Avenue exit ramp.

Staff also reviewed water plans and bid as part of the "Core" phase of the interchange project. The Core is the final freeway contract to complete the Marquette Interchange, and includes sections of Interstates 43 and 94 between West Wells Street to the north, North 13th Street to the west, the Milwaukee River to the east, and extending south of the existing High Rise Bridge. Four water construction plans were bid as part of the State Contract, including a 16" freeway crossing at West Wisconsin Avenue and several local road water main relays. In the late fall of 2005 the North 10th Street local road water main relay was completed as well as abandonment of the existing 16" water main crossing at West Wisconsin Avenue.

2006 construction will see additional local road water alterations as well as construction of the new West Wisconsin Avenue crossing. The new Wisconsin Avenue crossing will be significant in the

Milwaukee Water Works employees share their trade secrets with students from Pulaski High School on Career Day and from Garfield Science & Academy School for Careers on Wheels Day.

fact that the water main will be hung from the deck of the proposed bridge and insulated.

Permit applications for installation and alteration of the facilities of private utilities in public ways are reviewed for their impact on the water system, as are permit applications for buildings. The staff reviewed over 1,000 permits in 2005. Also, 169 fire flow tests were conducted.

Inspection of distribution materials ensures that only materials meeting Milwaukee Water Works' high standards are installed in the distribution system. In many cases, these items are hydrostatically tested at design pressures. Water Engineering staff responded to 217 requests for inspection of various purchases such as hydrants, valves, fittings, etc. These requests translated to 17,110 pieces of materials and 15 miles of water main.

GENERAL INFORMATION ABOUT THE MILWAUKEE WATER WORKS

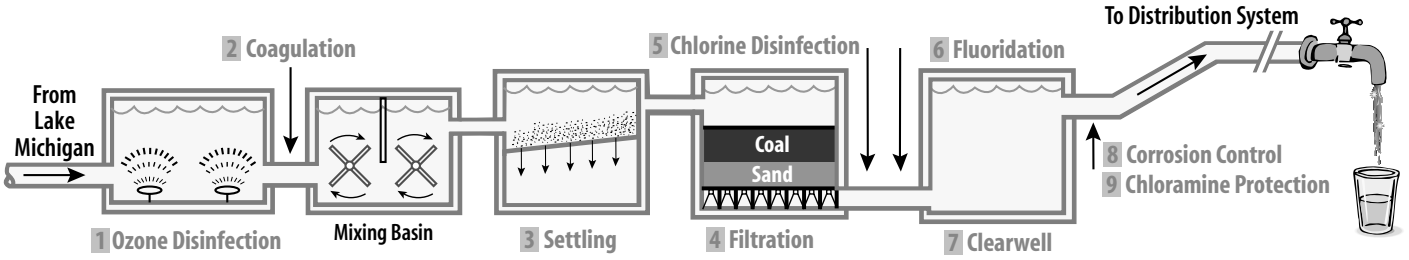
Howard Avenue Plant capacity: 105 million gallons per day (MGD)
Linnwood Plant capacity: 275 MGD
Total pumpage 2005 (gallons): 44.6 billion
Average daily usage per person: 55 gallons
Meters in service: 161,428
Fire hydrants: 19,754
Water mains (miles): 1,961
Population served: 830,719
Area served: 172 square miles
Cost of drinking water:: 4 gallons for 1¢ or 100 cubic feet (748 gallons) for $1.18

Payment to city for taxes and services used: $14.5 million

Retail customers: (water, billing service, maintenance) Franklin, Greenfield, Hales Corners, St. Francis, West Milwaukee (not maintenance)

Wholesale customers: (water only): Brown Deer, Butler, Greendale, Menomonee Falls, We Energies Water Services for part of Mequon, Milwaukee

Milwaukee Water Works Drinking Water Treatment Process



1. **Ozone Disinfection —** Ozone gas is bubbled through the incoming lake water. Ozone destroys disease-causing microorganisms including *Giardia* and *Cryptosporidium,* controls taste and odor, and reduces chlorinated disinfection byproducts.
2. **Coagulation —** Very fine particles in the water adhere together to form larger particles as the coagulant alum is mixed into the water. Large particles are more effectively removed during the settling and filtering processes.
3. **Settling —** Settling is the process in which solid particles settle out and are removed from the water.
4. **Filtration —** The water is slowly filtered through 24" of anthracite coal and 12" of crushed sand to remove very small particles.
5. **Chlorine Disinfection —** After filters, chlorine is added as a secondary disinfectant. This provides extra protection from potentially harmful microorganisms.
6. **Fluoridation —** Fluoride, when administered at low levels, is proven to help prevent tooth decay.
7. **Clearwell —** Treated water is stored in deep underground tanks and pumped as needed through the distribution system.
8. **Corrosion Control —** A phosphorous compound is added to help control corrosion of pipes. This helps prevent lead and copper from leaching from plumbing into the water.
9. **Chloramine Protection —** Ammonia changes the chlorine to chloramine, a disinfectant that maintains bacteriological protection in the distribution system.

MILWAUKEE WATER WORKS, MILWAUKEE FIRE & POLICE DEPARTMENTS KICK OFF CAMPAIGN TO DETER ILLEGAL FIRE HYDRANT OPENINGS

"Play with Water and You Could get Burned"

The City of Milwaukee's Water Works has teamed up with the Milwaukee Fire Department and the Milwaukee Police Department to create a public awareness campaign to deter the illegal opening of fire hydrants. On Monday, July 25th Milwaukee Water Works Superintendent Carrie Lewis and Assistant Fire Chief Mark Sain unveiled campaign materials to assist with those efforts at one of the eight Milwaukee Public Schools Recreation Division's Cool Spots, Clarke Street, 2816 West Clarke. The campaign materials include posters and flash cards that warn "Play with water and you could get burned". At the time of the press conference 328 fire hydrants had been illegally opened, 34 of them occurring on Sunday, July 24th. Carrie Lewis started by asking citizens firstly, to leave hydrants for the Water Works and Fire Department and secondly, to "step up and report tampering with hydrants". She said that so far the campaign has resulted in one arrest — a teenager who was arrested on July 16th for trying to break open a fire hydrant.

Carrie Lewis, Milwaukee Water Works Superintendent, began the press conference by asking residents to step up and report anyone tampering with fire hydrants. She suggested that children visit a county pool, a neighborhood Cool Spot or that residents turn on their sprinklers for neighborhood children.

Assistant Fire Chief Mark Sain spoke of the danger caused by damaged hydrants once they have been tampered with. He stated, "we (the Milwaukee Fire Department) might arrive at the scene of a fire where there's a broken hydrant, and we don't have time to spare to search down the street for a hydrant that is in service." He also mentioned that hundreds of thousands of gallons of water flood out of the water system creating a danger for children playing in the street and wasting a precious commodity, treated drinking water.

Captain Harpole of the 3rd District was also on hand to lend support to the campaign stating that Milwaukee Police will respond to calls made regarding the illegal openings, in order of priority. Cedric Banks, Milwaukee Public Schools Recreation Division encouraged children in Milwaukee to go to the Cool Spots where they can play safely. The Cool Spots, which are listed on the cards, are Auer Avenue, 2221 West Auer Avenue; Columbia, 1354 West Columbia Street; Hopkins Street, 1503 West Hopkins Street; Starms Discovery, 2035 North 25th Street; Ben Franklin, 2308 West Nash Street; Clarke, 2816 West Clarke; Granville, 9520 West Allyn Street; and Wheatley, 2242 North 20th Street. The Cool Spots are set up between noon and 1:00 p.m. on days when the temperature exceeds 85 degrees and operate until 6:00 p.m.

The flash cards tell residents that opening a fire hydrant can result in a $1,000 fine or 30 days in jail. What the cards do not state is how costly a hydrant is to repair. One hydrant opened for four hours loses $883 worth of water, damage to a hydrant is $850, and a broken hydrant can cost $3,500 to repair. Open hydrants can also cause property damage if nearby buildings are flooded.

The posters and flash cards are being distributed to all Milwaukee Public Libraries, and to community groups, churches, Boys and Girls clubs, gas stations and other locations in the areas where most of the illegal fire hydrant openings are occurring. Milwaukee Police Department Community Liaison officers will distribute the cards and so will Milwaukee Fire Fighters who are involved in community events. Aldermen have also been asked for their input to make sure the community is well informed. Residents who see anyone tampering with a fire hydrant are encouraged to call (414) 286-3710.

Assistant Fire Chief Mark Sain spoke of the importance of having a functioning fire hydrant available when a call is made. He said, "Time is precious when responding to a house and the Department doesn't have time to find a fire hydrant that is working if the one they need is damaged."

2005 Statistics

GENERAL INFORMATION ABOUT MILWAUKEE

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

GENERAL INFORMATION ABOUT MILWAUKEE'S INFRASTRUCTURE

Alleys, total . . . . . 414.6 miles
Freeways . . . . . 40.1 miles
Paved City Streets. . . . . 1,418 miles
Unpaved City Streets . . . . . 15 miles
Total city streets . . . . . 1,433 miles
Miles of lighted streets . . . . . 1,290.44 miles
City maintained bridges. 172
Movable bridges 21
Total bridge openings 12,347
Total sewer mileage in operation
(sanitary, storm and combined). 2,437
Main line sewers in the City . . . . . 120 miles
Streets with interim lighting . . . . . 81.96 miles
Unlit streets . . . . . 46.6 miles
Street lighting units. 67,427
Alley lighting units. 8,803
Traffic control signals. . . . . 722 intersections
Traffic control signs. 104,033
Underground conduit . . . . . 548.5 miles
Bus stops, signage maintained 4,272

MILWAUKEE WATER WORKS

Howard Avenue plant capacity . . . 105 million gallons/day (MGD)
Linnwood plant capacity . . . . . 275 million gallons/day (MGD)
Total annual pumpage (gallons). . . . . 44.3 billion
Consumption per capita per day (gallons) 54
Meters in service 161,161
Water hydrants. 19,758
Water mains in service (miles) 1,960
Revenue . . . . . $74.5 million
Milwaukee Water Works' purification process is comprised of ozone disinfection, alum coagulation, dual media filtration, fluoridation, corrosion control, and chloramine post-disinfection.
Retail customers (water, billing, service, maintenance): Franklin, Greenfield, Hales Corners, St, Francis, West Milwaukee
Wholesale customers (water only): Brown Deer, Butler, Greendale, Menomonee Falls, Milwaukee County Grounds, New Berlin, Shorewood, Wauwatosa, West Allis, WE Energies Water Services

SANITATION

Residential waste collected . . . . . 185,718 tons
Recyclables collected . . . . . 25,483 tons
Leaves & yard waste collected & composted. . . . . 27,198 tons
Snowfall (January – December) . . . . . 61.4 inches
General snow plowings 5
Ice control operations 34

FORESTRY DIVISION

Trees on city streets 200,000
Shade trees planted 2,708
Trees pruned 43,471
Trees removed (all causes) 2,736
Stumps removed 2,781
Boulevard medians & greenspaces maintained . . . . . 476 acres
Flowers produced, annuals 323,028
Flowers planted, annuals 140,046
Flowers planted, perennials. 9,960
Flowers planted, bulbs 30,600
Shrubs planted 1,599
Evergreens planted 151
Landscaped boulevard medians. . . . . 121.8 miles
Greenspaces maintained 59
Totlots maintained 57
City properties maintained 20
Service requests 13,707

INFRASTRUCTURE SERVICES — SEWER DESIGN AND MAINTENANCE

Sewer Design & Maintnenance (miles)

Sewers examined 92.9
Sewers cleaned 383.6
New Sewers 2.32
Replacement sewers 10.75
Sewer lining 2.71
Service class answered 8,002

FLEET SERVICES

Repair Orders. 31,518
Preventive Maintenance Inspections Performed. 6,332
Tires Mounted 3,517
Field Service Calls, Tires 3,971
Field Service Calls, Other 8,809
Stockroom Activity. 456
Vehicles Serviced 7,184
Passenger Vehicles 980
Packers, Rear Load 138
Packers, Front Load and Roll-off 18
Packers, Recycling 50
Tractors 64
Street Sweepers 27
Sewer cleaners, flushers, etc.. 19
Construction equipment. 510
Trucks, all other 760
Compressors 84
Vehicle Total 2,650
Non-Automotive equipment 1,451
Total Serviced. 4,101
Training . . . . . .
Fleet Accidents . . . . . .
Fleet Training . . . . . .

STREET AND BRIDGE MAINTENANCE

Bridges inspected 107
Bridges, number of openings 13,419
Pavement seal coating. . . . . 300,208 sq. yds.
Asphalt surface by contract . . . . . 3,857 tons
Production of asphalt mixes. . . . . 15,022 tons

Average Total DPW Employees, 2004 2,400

Zeidler Municipal Building, 841 North Broadway, Room 501 • [414] 286-3300 • TDD [414] 286-2025