City of Milwaukee

Department of Public Works
Infrastructure Services Division

Jeffrey J. Mantes
Commissioner of Public Works

James P. Purko
Director of Operations

Jeffrey S. Polenske
City Engineer

October 3, 2005

Mr. Ronald D. Leonhardt
City Clerk
Office of the City Clerk
Room 205, City Hall

Dear Mr. Leonhardt:

I am forwarding a "Report on 2004 Activities" for the Infrastructure Services Division.

Should you have any questions, I will be happy to discuss them with you.

Very truly yours,

Jeffrey Polenske CAW

Jeffrey S. Polenske, P.E.
City Engineer

CAW:sdp

Enclosure

c: Barry Zalben (3 copies)

841 N. Broadway, Room 701, Milwaukee, Wisconsin 53202
Phone (414) 286-2400, Fax (414) 286-5994, TDD (414) 286-2025

Infrastructure Services Division

Department of Public Works

REPORT ON 2004 ACTIVITIES

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 330 positions over the past 10 years to a level of 926. In 2004, 1,133 Alderman Service Requests were received.

ADMINISTRATION AND TRANSPORTATION SECTION

In 2004, the Administration Section and the Transportation Section were combined into one section resulting in the reduction of a section manager.

ADMINISTRATION UNIT

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

The Unit coordinates accounting functions along with the Department of Public Works Administration Services Division and the Comptroller's Office. The accounting services provided by the Unit include establishing projects, recording payments, monitoring costs, and closing project budgets and expenditures for the Transportation Unit and Environmental Unit in coordination with the Construction Unit. In addition, the Unit is involved in accumulating, categorizing, recording and reporting operation and maintenance expenditures for the Division. The Unit also acts as the accounting resource for tracking and monitoring projects; supports the accumulation of accounting data used in the development and measurement of project estimating and performance; and assists in the development and programming of financial reports for use by managers in the Division.

In 2004, the Unit administered Capital Improvement and Grant and Aid Programs in excess of $54.8 million, Operations and Maintenance budgets of over $46.5 million, with payrolls of $19.2 million. The 2004 expenditures for all contract payments totaled over $32.4 million. In addition to processing payments and monitoring construction contracts, the Administration Unit provides support to other areas of the ISD on financial matters. The Unit 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 2004, Highway Aids in the amount of $23.1 million were received by the City of Milwaukee. The net expenditures related to DPW-Infrastructure activities, using a 6-year average (based on 2002) of 58.7% applied to this total, resulted in approximately $13.5 million of aid received. In addition, $522,640 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, reflecting a percentage of actual costs. 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 Unit 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 Administration Unit also provides support for the day to day operations of the computer systems within the Division and acts as liaison with other computer support areas within the City. This support includes hardware and software maintenance of the 77 GIS/CADD units, 195 general-purpose units and 10 special purpose units within the Division. During the past year, the Section replaced 23 of the GIS/CADD units and 39 general-purpose units for Division users. In addition, hardware was reconditioned, reconfigured, updated and reinstalled for many Division users. This section was responsible for responding to several serious virus attacks upon the Division's systems in 2004. This section generated various ad-hoc reports from data contained in the Division's data bases, maintained the database system that is used by the Transportation and Construction Units to administer paving and walk contracts, and helped users deal with process changes caused by changes in other City departments.

TRANSPORTATION UNIT

The Transportation Unit 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 Unit 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 Unit is also responsible for administering the city's local street and alley capital paving programs.

Project Programming Area

Administration of the City of Milwaukee's $7 million capital paving budget by the Project Programming Unit resulted in approval of 29 street paving and 20 alley projects in 2004, and the award of $5.8 million in contracts for local streets and alleys, noting that there was significant carry-over monies from 2003.

In 2004, the Project Programming Unit prepared 294 estimates and verified 51 city certified paving projects for improvement in the City of Milwaukee. The formal estimates prepared include 86 street paving projects (10 of which were sponsored by the State of Wisconsin) and 57 alley-paving projects. The verified certificates include 30 street paving projects, of which 8 were sponsored by the State of Wisconsin and 13 alley paving projects.

Project Programming staff appeared before the Common Council's Public Improvements Committee for public hearings on 94 paving, new sewer and new water projects. In addition, resolutions were prepared to authorize construction for approximately 213 non-assessable public improvement projects. Upon completion of the work, the Unit reviews assessments, prepares and issues the associated special assessment bills to property owners affected by the work. In 2004, the unit issued 4,769 bills resulting in $4,638,000 in revenue to the City.

Major Projects Area

The Major Projects Unit coordinated the completion of six Federal and/or State Major Arterial Street and bridge projects at a total cost of $6,261,700, of which the City's portion was $866,600. The Major Federal and/or State paving and bridge projects completed in 2004 include the following:

- The reconstruction of North 35th Street over Lincoln Creek Bridge
- The resurfacing of North 12th Street West Wells Street to West Highland Avenue(Project originally delayed due to utility work for the Marquette Interchange)
- The reconstruction of the North Farewell Avenue Bridge over Milwaukee County Bike Trail
- The reconstruction of West Blue Mound Road from North 66th Street to Story Parkway
- The reconstruction of West Center Street from North 92nd Street to North 76th Street.
- The resurfacing of South 27th Street including bridge(UPRR Forest Home) and West Forest Home from South 31st Street to South 27th Street

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 Unit

Eight new traffic signals were installed by the Division in 2004 to address new roadway construction and new land uses. Five of the signals were installed along West McKinley Avenue and East Knapp Street due to the removal of the Park East Freeway. The reconstruction of the intersection of West Fond du Lac Avenue and West Mill Road by Milwaukee County resulted in the replacement of a four-way stop with a traffic signal, with both Milwaukee County and the City of Milwaukee jointly responsible for the traffic signal. The first new traffic signal for the Marquette Interchange project was installed at West Tory Hill and North 11th Street, with more to come in 2005 and 2006.

A traffic signal was installed at West Oklahoma Avenue and North 30th Street for a new driveway into the St. Luke Hospital's site. The driveway services both a parking garage for staff members and a loading dock.

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. Seven electro-mechanical controllers were replaced in 2004; 711 of the City's 723 signalized intersections are now controlled with solid state controllers.

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 installed at 27 locations under this program in 2004.

For the first time in the city, pedestrian countdown indications were installed. At the signalized intersection of West Lapham Street and South Layton Boulevard, the existing "walk/don't walk" indications for crossing Layton Boulevard were modified by installing another indication that counts down the seconds remaining of the flashing "don't walk". The purpose is to give pedestrians information they might find useful to safely cross the street.

Major work for the Marquette Interchange Reconstruction project started in 2004. Along with installing the new traffic signal at West Tory Hill and North 11th Street mentioned above, the Traffic Design Unit has worked to insure that the additional traffic diverted from the freeway system onto city streets 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, and in some instances, modifying hardware to facilitate new traffic patterns. Under this project, emergency vehicle preemption was installed on West Saint Paul Avenue from North 35th Street to N. 5th Street to give fire vehicles an alternative over other possibly crowded or closed routes. In all, there were 96 work orders written in 2004 for traffic signal work due to the Marquette Interchange reconstruction project.

In May 2004, both West Wells Street and West State Street from North 35th Street to North 11th Street were converted from one-way to two-way traffic. This project required the contribution of all of the subsections of the Traffic Design Unit, namely traffic signals, traffic operations and signs. Pavement markings, traffic signals and traffic signs along the entire stretch of both streets were modified. The conversion was done on a Saturday to minimize interruption to traffic.

Approximately 390 miles of lane lines, center lines and edge lines were painted in 2004 to maintain adequate visibility of pavement markings and to provide positive guidance to motorists. Crosswalks were painted at 1,196 locations and 195 special arrow and "only" markings were painted. Coincident with this work, 269 pavement marking records were updated.

In 2004, pavement markings to designate separate bicycle lanes were installed on the following roadways: West Center Street from North 76th Street to North 92nd Street, South Forest Home Avenue from South 27th Street to South 31st Street, North Water Street from North Holton Street to East Kilbourn Avenue, and North 40th Street from West Vliet Street to East Pleasant Street.

During 2004, the unit coordinated the signing, maps and traffic control for approximately 1000 special events which included bike races, festivals, filming, marches, parades/processions, parking events, runs, walks, block parties and many other activities affecting the use of City streets. The unit also coordinates the traffic control for all utility and construction work in City streets, making sure that special events and construction work do not overlap.

Street Lighting

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 18 paving projects. Lighting work done in conjunction with these projects included the installation of overhead circuitry prior to construction to maintain adequate lighting level 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 2004, a total of 1,170 streetlights in the City were converted to high-pressure sodium lighting. With this work, approximately 92 percent of the 67,294 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 2004, grant funds, special assessment 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: West North Avenue, from North 27th Street to North Sherman Blvd., West Lincoln Avenue South 7th Street to South 20th Street and West National Avenue from South 1st Street to South 12th Street.

Construction has continued the installation of Milwaukee Lanterns and Harps in 2004 in conjunction with the streetscaping of the Park East Corridor from North 6th Street to North Milwaukee Street. Work will continue in 2005 on the remaining segments of the roadways with in the corridor.

Engineering for the local roads street lighting for the second and third phases of the Marquette Interchange Reconstruction project was completed in 2004. Installation of new Street Lighting facilities has started in 2004. Engineering and construction will continue in 2005 on these and upcoming phases.

In 2004 work has continued on the replacement of the City's Master Street Lighting Control System. The current system, which was developed using World War II era technology, is being used to the street lights on and off is failing due to age. Development of the proposed replacement has progressed during 2004 that an operational prototype will be in service by spring of 2005. Replacement of the existing system is anticipated to begin in late summer of 2005.

Street Lighting personnel maintain and operate outlet circuitry, for 15 Business districts and other organizations, for Christmas decorations and other yearly civic celebrations. Outlet Circuitry was added to the harps on West North Avenue from North Sherman Blvd to North 60th Street.

CENTRAL DRAFTING AND RECORDS UNIT

The Central Drafting and Records Unit 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 preparation and/or 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 2004, plans and petitions for the vacation of public ways were processed. The Unit also processed subdivision plats and certified survey maps, produced paving plans for separate paving projects, structure projects and state paving projects, and acted upon requests from Diggers Hotline to locate the City's underground electrical and water main facilities.

City Underground Conduit

During 2004, City forces installed an additional 2.0 miles of conduit, abandoned 0.2 miles and 18 additional manholes. An additional 0.4 miles of conduit and 6 manholes were installed for the City by others.

City forces installed new conduit in North 84th Street from West Lisbon Avenue to West Hampton Avenue. This conduit will service existing City facilities in addition to alleviating conduit congestion that exists in the area.

City forces installed new conduit in North Water Street from East Pleasant Street to East Brady Street. This conduit alleviates the congestion in the area. Conduit installation is planned for North Water Street from East Juneau Avenue to East Pleasant Street. This will provide a vital link from the downtown area to the northeast side of the City.

City forces installed conduit in East Kilbourn Avenue from North Astor Street to North Prospect Avenue and in North Prospect Avenue from West Kilbourn Avenue to East Wells Street. This conduit replaced the facilities that were in conflict with the Kilbourn Tower Project. This project was requested and funded by the developer.

Conduit installations in the Park East Freeway Project have been completed. This installation was in East/West McKinley Boulevard from North Milwaukee Street to North 8th Street, which also included a package under the Milwaukee River. This conduit provides another vital link between the downtown areas of the City to the west. Conduit was also installed from the bridge house at McKinley to the bridge house at Juneau, thus providing for remote control access to both bridges. This conduit was both designed and installed by others as part of the Park East Freeway paving project.

As of December 31, 2003, there are 548.5 miles of underground conduit lines and 7,411 manholes in active service.

The Underground Conduit Area has spent the last two years working with a telecommunications company interested in leasing space in the City conduit system. This project was completed in 2003 and we are currently now leasing 24 miles of conduit to this company.

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 2004.

In 2004, assistance was provided to the WISDOT with regard to traffic mitigation and administration during the Clybourn Advanced Contract (CLAC) and the start of the North Leg phases of the reconstruction of the Marquette Interchange. This unit attended numerous meetings concerning Marquette Interchange construction phasing, utility relocation and coordination, traffic mitigation and elected official and public outreach in 2004. 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); the implementation and testing of an Integrated Corridor Operations Program (ICOP); and on the Local Roads & Streets Council (LR&SC), an initiative to better coordinate and create a more efficient relationship between local jurisdictions and the state Department of Transportation.

This Area provided technical assistance to the Southeastern Wisconsin Regional Planning Commission with regard to the Transportation Improvement Program, the Regional Freeway Reconstruction Study, an amendment to the Regional Bicycle and Pedestrian System Plan, and the Kenosha-Racine-Milwaukee Corridor Transit Alternatives Analysis (a.k.a. WISERIDE).

Activities also included providing plan review and utility coordination to the Wisconsin Department of Transportation (WISDOT) on freeway maintenance projects, on the improvement of the ramp metering, variable message signing, and vehicle detection systems phases of MONITOR (The Freeway Traffic Management Plan).

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), as well as the Transportation Demand Management Program. These programs generally provide up to 80% Federal and/or State funding for eligible projects.

During 2004, the unit issued a Request for Proposal (RFP) for the design of a CMAQ funded Summerfest Shuttle Bus Parking Management System. A three-party design contract was awarded to Edwards and Kelsey, Inc. in 2004 for this project. An initial project kickoff meeting and preliminary discussions with operators of downtown parking structures were held in 2004. 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 related projects again in 2004. This Area continued to provide membership and staff assistance to the City's Bicycle and Pedestrian Task Force. The Task Force was active in 2004 fulfilling its mission to recommend to City policy makers ways to make the City of Milwaukee more bicycle and pedestrian friendly.

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 2004, City forces installed new bike racks in several local business districts. To date, over 850 free bike racks have been distributed since 2000. The unit will continue to promote the program in 2005.

In 2004, the Area worked with the Bicycle Federation of Wisconsin (BFW) to undertake two bicycle related planning studies. The first is the Evaluation, Selection, Designation and Spot Improvements of Bike Routes. This project, funded by a CMAQ grant, involves the evaluation of the City's current bicycle route system and makes recommendations as to additions to the system and proposed improvements, particularly providing bike lanes. This project was completed in 2004, and it resulted in the creation of Milwaukee's Bike Lane Design Guide. The BFW was also 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. This project will continue through 2005. The BFW was also retained in 2004 to design and produce a new City/County bicycle route map using STP-Discretionary funds. New maps will be available in mid-2005.

Engineering began 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 in 2005 and 2006.

Two segments of the Beer Line "B" Bicycle Trail were completed in 2004. The first segment between East Pleasant Street and North Humboldt Avenue is funded by a CMAQ grant, and the second segment between North Humboldt Avenue and the East North Avenue Viaduct is funded by a Transportation Enhancements grant.

Construction on the Marsupial Bridge began in 2004. The Marsupial Bridge is a bike/pedestrian bridge suspended beneath the North Holton Street Viaduct, which will connect the Beer Line "B" area to the Brady Street commercial district. Construction of the CMAQ funded bridge will be complete in 2005.

In 2004, this Area worked to get bicycle lanes marked on North Water Street between East Kilbourn Avenue and East Brady Street, on West Forest Home Avenue between North 27th Street and North 31st Street, on West Center Street between North 76th Street and North 91st Street, on West Blue Mound Road between North Hawley Road and North Story Parkway, and on North 40th Street between West Lisbon Avenue and West Vliet Street. The unit will continue to pursue the installation of bike lanes on City streets wherever they can be accommodated.

During 2004, this Area 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 unit. Furthermore, this unit 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. Much of the work on the HAST began in 2004 in conjunction with the Canal St Paving through Menomonee Valley.

In 2004, this Area worked closely with the design consultant, Milwaukee Transportation Partners, to finalize plans and acquire right of way for the West Canal Street Reconstruction/Extension project in the Menomonee Valley. This project includes 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, construction of a new roadway from North 25th Street to Miller Park through the west end of the Menomonee Valley and construction of portions of the HAST. A new modern roundabout, bio-retention facility and storm water lift station are planned near the intersection of West Canal Street and North 25th Street. The project also includes extensive traffic control equipment to facilitate traffic flow during Miller Park events. This unit also began negotiations with the Milwaukee Brewers and the Southeastern Wisconsin Professional Baseball Park District to acquire certain Miller Park roadways to provide a Canal Street connection to Miller Park Way and serve as critical public infrastructure to support redevelopment of the Milwaukee Road Shops TID. 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. Construction activities on this project began in 2004, with completion scheduled for the spring of 2006.

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.

This Area continues 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 transit improvements linking multiple tourist and business venues. The Alternatives Analysis is expected to be completed during the summer of 2005 with preliminary engineering commencing shortly thereafter.

This Area provided coordination services for the Downtown Pedestrian Corridors project. A contract was awarded in 2004 for street amenities along East Wisconsin Avenue from the Milwaukee River to North Milwaukee Street. A second contract will be awarded in 2005 for East Wisconsin Avenue and North Prospect Avenue from North Milwaukee Street to East Mason Street. Work on both CMAQ funded projects are expected to be completed in 2005.

During 2004, this Area continued its 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, the Milwaukee County Grounds development and the Pabst City redevelopment project. This unit also worked on several residential developments in and around the central business district in 2004. This unit 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.

This Area worked closely with the state, the design consultant (Milwaukee Transportation Partners), and DCD in the Park East Freeway removal project. This project also included the construction of new surface roadways and a new river bridge within the Park East corridor. The new Knapp Street Bridge and the paving of North Water Street were completed in 2004. This unit worked to retain National Survey and Engineering to prepare subdivision plats, which will allow for the full development of the Park East corridor. This unit will continue to work with DCD and developers in implementing the Park East Redevelopment Plan in 2005.

This Area continues to assist the DCD with the expansion of the Riverwalk system, including planning for roadway and streetscape improvements to complement the adjacent riverwalk. Work began in 2004 on constructing of a southerly extension of the Riverwalk system into and through the Historic 3rd Ward, as well as a northerly extension along the Beer Line "B" redevelopment area to the former North Avenue Dam. A new pedestrian bridge across the former North Avenue Dam connecting the Beerline "B" area to Caesars Park on the east side of the River was completed in 2004.

This 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. This includes utility permits, building permits, and DPW excavation permits. In 2004 this unit processed 518 utility permits, 161 DPW permits, 101 boring permits, and 485 building permits. The unit also reviews applications for special privileges and air/subterranean space leases, and writes resolutions for Common Council action.

During 2004, this Area continued its 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. This unit also continued to provide public service assistance to our citizens by investigating a variety of traffic, roadway, and railroad grade crossing condition complaints.

In 2004, this Area continued to provide technical assistance to the Board of Zoning Appeals (BOZA). This unit provides 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 2004, approximately 775 new requests were submitted to the Board office and reviewed by the ZAG. This unit also provides staff at each BOZA meeting to present the DPW report on cases in front of the Board. This unit also provides 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 2004.

This Area also participates in three subcommittees of the Local Roads and Streets Council - the Education and Communication subcommittee, the Infrastructure Management subcommittee and the Regulatory, Environmental, and Legislative subcommittee. This unit also represents the City's interests in promoting and deploying intelligent transportation technology regionally as a representative on the Gary-Chicago-Milwaukee ITS Corridor Deployment Committee and statewide as a member of the Wisconsin ITS Alliance.

During 2005 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. New initiatives will commence on dynamic parking control and information, bicycle facilities, pedestrian mobility, and market strategies geared at continued enhancement of the central and surrounding business districts. Major developments anticipated to occur in 2005 include the redevelopment of the Park East corridor and the Pabst City mixed use development. This unit will also work closely with the WISDOT on continued study involving Freeway Traffic Management and in evaluating a pilot program to integrate signal systems of complementary arterial and freeway corridors.

MAJOR PROJECTS AREA

The Major Projects Area coordinated the completion of six Federal and/or State Major Arterial Street and bridge projects at a total cost of $6,261,700, of which the City's portion was $866,600. The Major Federal and/or State paving and bridge projects completed in 2004 include the following:

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- The reconstruction of the North Farewell Avenue Bridge over Milwaukee County Bike Trail

- The reconstruction of West Blue Mound Road from North 66th Street to Story Parkway

- The reconstruction of West Center Street from North 92nd Street to North 76th Street.

- The resurfacing of South 27th Street including bridge(UPRR Forest Home) and West Forest Home from South 31st Street to South 27th Street

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 Area 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 Area 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 Area 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.

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 2.00 miles of new sanitary sewers, 2.08 miles of new storm sewers, 8.82 miles of replacement sewers and 1.99 miles of sewer lining for a total cost of $28.99 million. These projects included:

West Canal Street Project:

This work consists of reconstructing approximately 1.3 miles of roadway on the existing alignment of West Canal Street between 6th Street to 25th Street. Phase II will eventually link West Canal Street to the US-41 interchange at the Miller Park parking lot. A $14.5 million contract was awarded on October 22, 2004 for the West Canal Street and Hank Aaron State Trail projects that includes $4.98 million for new sanitary sewer and storm sewer relay work and $2.3 million for low flow diversion storm sewers that will convey the first flush of stormwater to the sanitary sewer system.

The scope of the work in this project includes construction of 7176 lineal feet of new sanitary sewer, 1067 lineal feet of storm sewer relay and 7157 lineal feet of new low flow diversion storm sewer to accommodate sewer needs for the existing and future development. Existing developments presently connected to the Milwaukee Metropolitan Sewerage District (MMSD) Milwaukee Intercepting Sewer (MIS) will be disconnected and reconnected to the proposed City of Milwaukee sanitary sewers. All additional stormwater runoff generated by the proposed Menomonee Valley Improvement project will be discharged into the proposed bio retention facilities at South 25th Street and ultimately discharged into the Menomonee River.

The entire project is expected to be completed by August of 2005.

South Superior Street project:

A $2.73 million contract was awarded for the lining and relay of the existing combined sewers of various sizes in South Superior Street at various locations between East Conway Street and East Illinois Street and adjacent to South Superior Street in East Bennett Avenue, East Meredith Avenue, East Trowbridge Street and in South Delaware Avenue from East Pryor Avenue to East Iron Street. The sewers were relayed with a concrete cradle section to provide the structural integrity and adequate strength to the proposed sewers. The construction of this sewer work was completed on December 22, 2004.

East Auer Avenue Lining project:

In the fall of 2004, a $636,000 contract was awarded for the installation of 778 lineal feet of 84-inch diameter cured-in-place lining in the existing combined sewer in East Auer Avenue from North Humboldt Boulevard to North Dousman Street.

Only one work shaft along the project's length was proposed to minimize surface disturbances and disruptions to area residents and to reduce the cost of the project compared to the typical method of installation. The entire work on this project was completed on August 5, 2004.

North 30th Street projects:

A $1.88 million sewer rehabilitation contract was awarded in April of 2004. This project is located in North 30th Street from West Meinecke Avenue to West Center Street. This project consisted of installing approximately 2000 lineal feet of 110-inch diameter fiber mortar glass lined pipe inside an existing 120-inch diameter combined sewer (sliplining), originally built of bricks in the year 1900. Another advantage of sliplining is that the pipes are installed through one work shaft with no additional open-cut excavations, thereby causing the least disruption to the local traffic and area residents. This project was completed in the fall of 2004. This sliplining project was one of the largest diameter sliplining projects ever completed in the country and it was featured in the October 2004 issue of Trenchless Technology magazine.

Another project in North 30th Street was awarded in June of 2004. This $1.53 million sewer relay contract is located in North 30th Street from West Center Street to West Hadley Street. This project consisted of tunnel/jacking work and also open-cut excavation. Approximately 575 lineal feet of 102-inch diameter reinforced concrete pipes were installed by using open-cut method of sewer relay. Approximately 75 lineal feet of 102-inch diameter reinforced concrete pipes were installed by using tunnel/jacking method of sewer installation under the very busy intersection of West Center Street. This project was completed in the winter of 2004.

West Greenfield Avenue and South Muskego Avenue project:

A contract was awarded in West Greenfield Avenue from South 2nd Street to South 17th Street, in South Muskego Avenue from West Forest Home Avenue to West Greenfield Avenue and in various adjacent streets within the area. These projects were performed to replace structurally and hydraulically inadequate combined sewers. The combined total of these three projects is $5,916,000. Approximately 9,600 feet of sewer ranging in size from 15-inch to 72-inch are being relayed and 710 feet of existing 12-inch and 15-inch combined sewers are being lined.

Park East Freeway Redevelopment project:

A $474,000 contract was awarded in February of 2004 for the construction of various sizes of combined and sanitary sewers in the area below the former Park East Freeway from the Milwaukee River to North Milwaukee Street. New sewers were built in anticipation of future streets and to serve future development in the area. Existing sewers were also relocated due to changes in street alignments near North Water Street. Approximately 1,700 feet of sewer, ranging in size from 12-inch to 48-inch were constructed.

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.

In 2004, the Section reviewed 136 storm water management plans, with 112 being approved.

Illegal/Illicit Discharge Testing

Field-testing of storm water 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 1737 dry weather tests during 2004. Of these tests, 857 were at the outfall and 880 were at points upstream from the outfall.

The dry weather testing identified eighteen 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 of seven cross-connections. Five of the cross-connections have been disconnected with further enforcement action being taken at the other two locations.

Stormwater Treatment Devices

In 2003, the City was awarded a grant from the WDNR for a cost-sharing retrofit of existing storm sewer systems with four stormwater treatment devices. The project reduces sediment pollutants discharged to Lincoln Creek from West Good Hope Road and West Clinton Avenue street drainage and complements the remedial actions being implemented by the MMSD along Lincoln Creek. During 2004, four Stormceptor® treatment devices were installed under a construction contract. These devices were designed to remove at least 40% of the annual total suspended solids (TSS) load from the tributary drainage areas. The devices went on-line in December 2004. The City and the WDNR will share the construction cost of $189,060.

Infiltration and Inflow Reduction Program Area

Sanitary Sewer Flow Monitoring

A total of 21 sanitary sewer systems were monitored in 2004 for various reasons. The MMSD and the City flow monitored along two sections of Metropolitan Interceptor Sewer (MIS) which included 19 City sanitary sewer systems. The purpose of this monitoring was to coordinate our efforts to determine sources of inflow and infiltration (I/I) entering the sanitary sewers. Two systems were monitored due to backwater complaints and sewer surcharging. 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.

Sanitary Sewer Evaluation Surveys

In 2004, a contractor was hired to perform dye testing of 78,762 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 $312,110.

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 2004 for the repair of 430 sanitary sewer manholes at a cost of $621,553. 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 2004, we awarded a contract, in the amount of $306,895, to replace 55 stormwater inlets and to line 1, 292 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 2004, this section drafted a total of 212 sewer engineering plans. This represented a slight increase over the total of 209 plans drafted in 2003 and particularly an increase of 41 plans over the total of 171 plans drafted in 2002, an increase of 24%. 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 2004, work continued on the project of digitizing building sewer laterals to the Geographic Information System (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.

This area processed 490 permits in 2004, an increase of 9.5% over the 464 permits processed in 2003. One thousand one hundred and twenty-six (1,126) Deferred Sewer Charge Statements were processed in 2004.

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's sewers, manholes, catch basins and storm inlets. This includes responding to and investigating complaints of backwater and street ponding. In addition, Underground Operations inspects and repairs sewer and communication manholes, catch basins and storm inlets on streets prior to the paving work being completed.

During 2004, 103.4 miles of sewers were examined, 480.8 miles of sewers were cleaned, and 16,604 catch basins and storm inlets were cleaned. In addition, we responded to 7,435 service calls.

In 2004, Underground Operations installed underground conduit in West Bluemound Road from North Story Parkway to North 66th St. Other locations were North 10th Street from West State Street to West Juneau Avenue and West Clybourn Street from North 10th Street to North 16th Street.

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 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 responsible for the disposal of the debris removed. The wet material is currently taken to Waste Management, Inc. or United Water, Inc. for disposal.

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, signage and pavement markings.
- Operation and maintenance of the City's moveable and fixed bridges and viaducts.
- Operation of the Municipal Asphalt Plant and the Traffic Sign Shop.
- Inspection of permitted utility construction 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, and construction management. In 2004, local paving work consisted of 38 contracts that totaled 9.18 miles of roads and 4.03 miles of alleys. The total local paving contract cost was $5.79 million. In addition, Street Maintenance resurface paving work consisted of two contracts that totaled 2.67 miles of roads and Private Development paving work that totaled 1.75 miles of roads.

Sewer construction totaled 32.86 million for 34 contracts covering 13.93 miles. Water main construction consisted of 20 contracts that totaled 10.96 miles of water main relay at a cost $6.88 million. Inspection was also provided for 1.94 miles of suburban water main installation.

State Paving

The Construction Section also performs administrative duties on WISDOT projects within the City of Milwaukee. These functions include construction management, inspection, contractor payment estimates, materials monitoring and reporting, wage/labor verification. For select projects survey and design duties were also performed. The following four WISDOT paving projects were constructed this year at a contract cost of $4.43 million covering 3.32 miles:

- West Blue Mound Rd – North 66th Street to North Story Parkway
- West Center Street – North 92nd Street to North 76th Street
- North 12th Street – West Wells Street to West Highland Avenue
- South 27th Street and West Forest Home Avenue

- South 27th Street (east roadway) – Union Pacific Railroad bridge to West Lincoln Avenue, (Including Bridge)
- West Forest Home Avenue – South 31st Street to south 27th Street

Three bridge projects were also constructed this year at a cost of $1.63 million. They include the following:

- South 27th Street over Union Pacific Railroad
- North 35th Street over the Lincoln Creek
- North Farwell Avenue over the Milwaukee County Bike Trail

Project highlights include:

NORTH 12TH STREET - West Wells Street to West Highland Avenue

This asphalt resurfacing project was completed in stages to allow two-way traffic with access to Aurora Sinai hospital, a grade school, a middle school and Marquette University throughout its construction. After concrete bus stop pads, portions of concrete sidewalk, curb and driveway approaches were placed, four key operations for the asphalt resurfacing occurred. Existing 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. Total contract cost was $0.24 million.

SOUTH 27TH STREET - Union Pacific Railroad Bridge to West Lincoln Avenue

WEST FOREST HOME - South 31st Street to South 27th Street

UNION PACIFIC RAILROAD BRIDGE

This multi-faceted project included replacement of a concrete bridge deck and the asphalt resurfacing of two busy south side State Highways at a contract cost of $1.4 million. To accommodate commuters, Aurora St. Luke's Hospital, and several nearby commercial areas, two-way traffic was maintained through a series of traffic control phases throughout construction. Pavement operations included cracking and seating of existing concrete pavement into a stabilized base for the installation of two layers of asphalt pavement. Concrete pavement bus stop pads and permanent pavement markings were installed with the addition of West Forest Home Avenue bicycle lanes. The existing bridge was rehabilitated by sand blasting, repainting, railing replacement, and a complete concrete re-decking.

WEST BLUE MOUND ROAD - North Story Parkway to North 66th Street

Concrete pavement reconstruction was completed on this 1.1-mile long project for a contract cost $1.73 million. In order to maintain two-way traffic throughout construction, the concrete pavement was placed in two stages; one-half at a time. Construction operations were coordinated to accommodate businesses such as the several entertainment establishments along the project, the Milwaukee Brewers, and residential parking needs to successfully keep inconveniences to a minimum. Bicycle lanes were also added to this roadway.

WEST CENTER STREET - North 92nd Street to North 76th Street

Concrete pavement reconstruction was completed on this one-mile long project for a contract cost $1.64 million. Reconstruction consisted of replacement of all concrete pavement, curb and gutter, driveway approaches, and portions of sidewalk. Concrete pavement replacement work was done in two stages, one-half the roadway at a time, in order to maintain temporary one-way traffic and parking throughout the construction. At project completion, two-way traffic was restored and permanent pavement markings were placed with the addition of bicycle lanes.

NORTH FARWELL AVENUE - Bridge over the Milwaukee County Bike Trail

The existing bridge was rehabilitated by sand blasting, repainting, concrete re-decking, concrete sidewalk and railing replacement at a contract cost of $0.52 million dollars. Construction was completed in two phases to maintain one-way traffic for a vehicle and a bicycle lane on North Farwell Avenue. Bicycle traffic on the County Bike Trail under the bridge was maintained by diverting riders through a protective canopy. Pavement bridge approaches were resurfaced by milling the existing surface and placement of a 3-inch asphalt overlay.

STREETS AND BRIDGES UNIT

Street Maintenance Area

The Street Maintenance area administers three types of maintenance contracts; pavement seal coating, crackfilling and asphalt pavement resurfacing. This year marked the sixth season of implementing the "Slurry Seal" method of seal coating asphalt pavements. This program has proven to be successful by receiving favorable public and Aldermanic reaction while minimizing complaints. City streets received 217,516 square yards of "Slurry Seal" in 2004. Under the crackfilling contract, a contractor crackfilled 332,226 square yards of pavement throughout the city utilizing a rubberized joint seal.

Asphalt resurfacing occurred on South 13th Street, South Whitnall Avenue, North 40th Street, North Water Street, North 124th Street and North Sherman Boulevard where 7,930 tons of asphalt were placed. In an effort to eliminate reflecting cracking of the asphalt, a new technique was implemented on resurfacing of South 13th Street from West Bolivar Avenue to West Layton Avenue. A Strata asphalt layer was placed below the top layer of asphalt. Additionally "superpave" asphalt was utilized on this project. The "superpave" asphalt is a specialized mix that eliminates rutting and shoving typically seen at intersections and in high traffic areas.

Street Maintenance field crews placed an additional 10,236 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 has completed additional improvements to the tracking of incoming customer requests. All service requests phoned into the City of Milwaukee are answered by the DPW 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 tracking of complaints, Aldermanic Service Requests and City Attorney claims. Street patching lists are now electronically generated with this data.

Street Maintenance received a new Pavement Planner in 2004, replacing a unit that was approximately 12 years old. This new piece of equipment gives crews greater flexibility in the types and size of repairs that can be completed. Crews now have the ability to complete larger asphalt repairs in a shorter amount of time. Pushups and shoving of asphalt at bus stops can now be repaired easily with this machine.

Bridge Maintenance Area

This Area 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 2004, the majority of scheduled bridge maintenance work was focused on movable facilities over the navigable waterways and those fixed facilities near or south of the Traser Yard at 6th and Canal. These projects included the rehabilitation of several pedestrian bridges over the Kinnickinnic River and the complete replacement of the deck of the pedestrian bridge between South 58th and 60th Streets at W. Montana Street. In addition, expansion joints were replaced on South 35th Street and repaired on the Holton Street Viaduct. Deck repairs were made to the Teutonia Railroad Viaduct and Cameron Bridge over Lincoln Creek. In addition to routine and emergency work on fixed and movable structures, Ironworker staff continued to perform seasonal and winter work for other City Departments, including Fire, Police, Water, Parking, and Buildings.

The Bridge & Iron Painting crew was on various bridges working rollers, railings, and structural steel. The crew also performs graffiti abatement on a daily basis. This work is coordinated with the Department of Neighborhood Services and the Police Department. Due to the extensive encroachment of graffiti into neighborhoods around several railroad bridges, the parapets, abutments and wing walls were completely repainted to restore a uniform appearance. A lower cost graffiti shield for signage is being used. Extensive graffiti sweeps are conducted prior to local festivals. Several projects were undertaken for the Water Works including interior painting and rehabilitation of coagulation basin hatches at the Linnwood Treatment Plant and painting a pump room and stairway at the Howard Avenue Treatment Plant.

Bridge Operations Area

In 2004, Bridge Operators conducted 12,347 bridge openings for commercial and recreational boating traffic. Currently eight of the twenty-one movable bridges can be remotely operated from a central hub bridge: South 1st Street, Plankinton Avenue, Emmber Lane, North 6th Street, South 6th Street, Clybourn Street, Highland Avenue Pedestrian, and Knapp Street bridges. City Electricians rewired the Broadway Bascule Bridge to update the design to current practices and eliminate an increasing trend of unreliability. The major components of the remote project for Michigan and St. Paul Bridges were put in place and this link will be operational upon completion of fiber optic connections.

Inspections Area

The Inspection Area handled over 9,300 construction permits in 2004. In addition to construction permits, the Inspectors review 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 Engineering Area

The Structural Design area designs and prepares contract documents, and performs construction administration for a wide variety of projects involving bridges, retaining walls, parking structures, and other structures. This area 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.

Final plans and specifications were reviewed for the rehabilitation of the State Street Bascule Bridge over the Milwaukee River. The State Street Bridge has been designated a historic structure as is the oldest remaining Milwaukee style trunnion and was the first bridge in the city to exhibit architectural features to enhance the bridge aesthetics. This project, which is scheduled for construction in 2005, will rehabilitate the structural, mechanical, electrical, and architectural elements of the bridge.

The Kilbourn Avenue Bascule Bridge was also designated a historic structure and preliminary plans were developed to rehabilitate the bridge and restore the aesthetic features that warrant the historical designation. A Request for Proposal was prepared and an outside consultant was selected to perform an inspection of the structural, mechanical, electrical and architectural components of the bridge and prepare a final report of repair recommendations and a construction cost estimate. Final contract documents are expected to be completed by the end of 2005.

Construction was completed in late 2004 of the North Ave. Dam Pedestrian Bridge over the Milwaukee River. The new pedestrian bridge connects new housing developments along River Boat Road with Caesar's Park and proposed walking paths along each side of the mud flats along the Milwaukee River.

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

Final plans and specifications were prepared for the rehabilitation and decking of the Hawley Road Viaduct and were submitted to WisDOT for construction starting in 2005. Final plans and specifications were also prepared and submitted for the rehabilitation of the Glendale Avenue Bridge over Lincoln Creek.

Construction work started for the rehabilitation of the 35th Street Bridge over Lincoln Creek. The bridge was opened to traffic in fall of 2004 with final repairs made to the limestone veneer expected to be completed in spring of 2005.

The new Knapp St. Lift Bridge over the Milwaukee River was opened to traffic in fall of 2004. The new architectural enhanced bridge is located one block north of Juneau Avenue in place of the elevated Park East Freeway bridges over the Milwaukee River. The bridge connects a newly widened West McKinley Avenue to East Knapp Street.

Construction was started and completed for the rehabilitation of the both the South 27th Street Bridge over Union Pacific Railroad and the North Farwell Avenue Bridge over the Milwaukee County Bike Trail.

Preliminary engineering was started for the replacement of the West Bradley Road Bridge over the Little Menomonee River, the Highland Boulevard Bridge over the Canadian Pacific Railroad, the West Mill Road Bridge over the Menomonee River, and the South 29th Street Bridge over the Union Pacific Railroad. Construction of these projects is expected to occur in 2006.

A Request for Proposal was prepared and an outside consultant was selected for preparing plans for the construction of a bicycle bridge over Chase Avenue and to prepare rehabilitation plans and cost estimates for the abandoned Union Pacific railroad 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.

Final plans and specifications were reviewed for the construction of one bridge and one viaduct to complete 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 from 6th Street to Miller Park.

Final plans and specifications were prepared for the removal of an abandoned railroad bridge and construction of a new retaining wall in conjunction with the S. 6th St. repaving from W. Ohio to W. Hayes Ave. Construction is scheduled to start in May 2005.

Concept Definition Reports were prepared and funding was obtained through the WisDOT Connecting Highway Program for the North Prospect Avenue Bridge over Oak Leaf Bike Trail and the West Forest Home Avenue Bridge over the Kinnickinnic River.

Bridge Inspection

This area performed bi-annual inspections on 179 bridges for which the City has maintenance responsibility. 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.

To accommodate changes in inspection procedures, the Wisconsin Department of Transportation (WisDOT) provided each bridge inspector with off-site training and a new Structural Inspection Manual, new bridge inspection pocket manual, and new inspection and reporting procedures, which are in compliance with National Bridge Inspection Standards. All bridge inspectors attended training on the new internet based HSIS which requires bridge inspectors to enter inspection reports and other data into the master bridge file and view and generate reports related to bridge inspections or local bridge conditions.

A bridge inspection was performed on the north and south access road bridges over the Menomonee River that is part of the Miller Park Stadium District ring road. The bridges may be acquired by the City as part of the Canal Street extension project westerly into Miller Park.

Parking Structures

Final plans and specifications were prepared and a contract was let for concrete repairs to the floor and helix ramp and installation of a waterproof traffic deck coating to previously uncoated floors of the 2nd and Plankinton Parking Structure. This unit also provided contact administration and coordination for this project. The repair work was completed in late summer.

Final plan and specifications were prepared and 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 work will start in spring of 2005 and this unit will provide contract administration and coordination for this project.

Plans and specifications were started for work on the MacArthur Square Parking Structure. This work will consist 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 will be let to contract in spring of 2005.

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.

Miscellaneous Structures

Construction work was completed for the Phase 2 Kilbourn Park extension to North Commerce Street. The Phase 2 work consisted of a soldier pile, precast concrete lagging retaining wall with bridge type railing along Glover Street, a cast-in-place concrete retaining wall adjacent to the bike path, and a concrete amphitheater seating area. A pedestrian stair at the end of Booth Street was included which will create a direct pedestrian access to North Commerce Street.

As part of the continued development related to the Beerline B Improvement District, construction was completed for two concrete cast-in-place retaining walls. The first retaining wall is located along the north side of Commerce Street and will allow extension of the Beerline Bike Trail. The second retaining wall is located along East Reservoir Avenue and will allow extension of that street for access to a new housing development.

Plans and specifications were prepared for the procurement of open grid steel grating to replace the grating on the Cherry Street Bascule Bridge. Plans and specifications were also prepared for the replacement of the sidewalk plates for the Clybourn Street Vertical Lift Bridge. Both of the above rehabilitation projects will be performed by City forces.

This area continued to provide engineering review and contract administration for the Department of City Development in connection with the Milwaukee Riverwalk initiative. This 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. Final plans and specifications were prepared and a City contract was let for the Riverwalk Downtown Connector that will connect the Bank One Riverwalk with the Historic Third Ward Riverwalk. The Phase 2 River Homes Riverwalk in the Beerline B Redevelopment project area was completed. The Phase 2 Riverwalk for the River Bridge residential project along N. Water Street was substantially completed. The second phase of the Historic Third Ward Riverwalk on the east bank of the Milwaukee River from St. Paul Avenue to Water St. that filled in the gaps from the Phase 1 Riverwalk was substantially completed. Riverwalk construction work was also completed for the Waterfront Lofts residential development on the west bank of the Milwaukee River and the Sigma Riverwalk along the south bank of the Menomonee River. Dockwall work started on the Harbor Front Riverwalk along the east side of the Milwaukee River near the Harbor entrance.

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 was performed for the Fire Department Training Tower edge beam and recommendations for repair were given. Plans and specifications prepared by a consultant for the repair work to the City Hall Fire Escape were reviewed. This unit prepared the original repair recommendations for the fire escape contained in an earlier report. An underground structural steel support framing for a failed sewer pipe was designed at a sinkhole location at 35th Street and Juneau Avenue. A structural investigation was performed on the Texas Avenue Water Works Pumping Station after a massive water main break occurred. A structural investigation was performed, with a written report, on the salt storage structure of Sanitation Central Area 1 Headquarters after the dome roof collapsed. A weather station, which monitors road and weather conditions to assist in salting operations, was installed on the 6th Street Viaduct. A structural inspection, report, and estimate were prepared for repair of the cracked floor of MFD Engine House #2.

Analysis of bridges for permit overload vehicles has increased almost two fold in recent years as the numbers of permit applications and enforcement has increased. A total of 193 bridge analyses were performed in 2004.

ELECTRICAL SERVICES UNIT

Electrical Services serves the City of Milwaukee by overseeing the operation, maintenance and installation of facilities and equipment related to street lighting, traffic control and street signage.

Traffic & Sign Services

The Traffic Services area operates and maintains 722 controlled intersections in the City of Milwaukee and completed the following work:

- Replaced 7,558 signal lamp outages.
- Repaired/restored 587 controller troubles (94% within one day).
- Repaired/restored 428 circuit troubles (66% within one day).
- Repaired/replaced 343 controller/signal knockdowns.
- Recorded 1,323 traffic counts for Engineering and traffic analysis.

The installation of new traffic controlled intersections was completed at the following locations:

- N. 4th St and W. McKinley Ave.
- Dr. Martin Luther King Jr. Drive and W. McKinley Ave.
- N. Water St. and E. Knapp St.
- N. Broadway and E. Knapp St.
- S. 30th St. and W. Oklahoma Ave.

- N. 11th St. and W. Tory Hill

The Traffic Signal Shop installed the first "Count-Down" pedestrian crossing heads at S. Layton Blvd. and W. Lapham Street. Additionally, the first phase of the Marquette Interchange project was completed on schedule. Cabling was completed for an additional 37 intersections for the Fire Department's Opticom system. Traffic signal work was completed on W. Capital Dr (N. Green Bay to W. Roosevelt), as well as many other paving projects locations.

The Traffic Sign Shop provided the following services:

- Replaced 896 missing signs
- Deliberate Vandalism - 40 Sign Replaced
- Non-Deliberate Damage – 1,268 Signs Replaced
- Replaced 251 signs due to age
- 1,551 signs replaced for paving
- Installed Arrows and Special Markings at 195 locations
- Painted 1,196 crosswalk locations
- Painted 2,061,371 feet of long line roadway stripping
- Install 1,013 special event signs

Street Lighting

Street Lighting continued to provide the City of Milwaukee well-lit neighborhoods and roadways. Personnel responded professionally around the clock to citizen requests, Alderperson's service requests, contractor damages and departmental priorities. Major projects that were completed included:

- W. Clybourn St (N. 9th St. to N. 17th St) Marquette Interchange reconstruction included light poles, cabling, lantern and harp fixtures and associated conduit work.
- N. Water St (E. Juneau St to E. Cherry St) and W. Knapp St M. Water St to River Bridge, included cabling, conduit, light poles and pole bases.
- W. North Ave (N. Sherman Blvd. to N. 27th St) included streetscape and the installation of light poles, cabling, conduits, lantern and harp fixtures.
- S. 27th St. (Kinnickinnic Pkwy to W. Forest Home Ave) included cabling and conduit work, and bridge reconstruction.
- W. North Ave (N. Sherman Blvd. to N. 60th St) included outlet circuitry and associated equipment.
- W. National Ave (N. 1st St to N. 13th St) included streetscape, light poles, cabling and conduit work and lantern and harps fixtures.

- W. Lincoln Ave (N. 7th St to N. 20th St) included streetscape, light poles, cabling and conduit work and lantern and harp fixtures.
- W. Hampton Ave and N. Port Washington Rd paving and bridge reconstruction.
- W. Michigan St (N. 6th St to River Bridge included cabling and conduit installation and light poles.
- W. Arthur Ave. (S. 5th St to S. 16th St) paving included cabling and conduit installation and light poles
- S. 8th St (W. Greenfield Ave to W. Washington St) paving included light poles, cabling and conduit work and lanterns and harps fixtures.
- Approximately 3,000 light fixtures were upgraded from Mercury Vapor to High Pressure Sodium.

Street lighting personnel maintains a system of approximately 72,000 streetlights and 12,000 alley lights and completed the following:

- Repaired 1414 inoperable alley lights (83% within 72 hrs).
- Replaced 118 deteriorated poles.
- Repaired 2296 circuit troubles (99.4% within 24 hrs).
- Repaired 549 single unit troubles (50% within 30 days).
- 2,729 streetlight units were relamped as part of the group replacement program.
- 3,019 streetlight units were relamped as scattered outages.
- Utility locators completed 34,426-hotline requests.

SUPPORT SERVICES UNIT

The Support Services Unit is responsible, in part, for the Stores areas in the Field Operations Section. Managing City inventory levels to ensure they are maintained at acceptable values is a continued focus of this group. In addition, this area manages the City's Asphalt Plant and provides field crew with the proper type and amount of asphalt materials on an as needed basis.

GENERAL STATISTICS - 2004

Streets, area of (improved and unimproved)
Net change in 2004: plus 8.903 acres
Total area at end of 2004 ..... 11,766,355 acres

or
18.385 square miles

Alleys, area of (improved and unimproved)
Net change in 2004: plus 0.729 acres
Total area at end of 2004 ..... 929.174 acres

or
1.451 square miles

Pedestrian ways and malls, area of (improved and unimproved)
Net change in 2004:none
Total area at end of 2004 ..... 29.614 acres

or
0.046 square miles

State and County rights-of-way, area of (improved)
Net change in 2004: minus 0.034 acres
Total area at end of 2004 ..... 1,797.406 acres

or
2.808 square miles

Area of City:
At end of 2004 ..... 95.859 square miles
At end of 1993 ..... 95.828 square miles
At end of 1969 ..... 95.773 square miles
At end of 1945 ..... 44.188 square miles
At end of 1919 ..... 25.851 square miles
At incorporation, January 31, 1846 ..... 7.408 square miles

CONSTRUCTION PLANS AND SPECIAL DRAWINGS - 2004

Paving Plans produced
75 Separate Paving Projects 212
The Paving Plans included:
Background Drawings 80
Cross-Sections Transferred 59

New Designs Transferred. 73
Final Official Map one-quarter section plots made 53
Election Commission Aldermanic District Ward Maps and
Single and Double Line Street Map Revisions 68
Number of Structural Design Projects
for which plans were prepared 6
Number of State of Wisconsin paving projects for which plans were prepared 5
One-quarter section map final plots prepared 154
Color maps prepared for Summerfest and other annual special events 39
Miscellaneous drawings and maps prepared for various City Departments 37
One-quarter section maps transformed, reviewed and corrected 92
One-quarter section maps prepared for GISMCAMLIS Cadastral map project 37

ONE-QUARTER SECTION MAPS, STREET MAPS, SUBDIVISION PLATS, AND CERTIFIED SURVEY MAPS, THE OFFICIAL MAP, ALDERMANIC DISTRICT MAPS, OTHER PLANS - 2003

One-quarter section maps on file, in the graphics system and on file on microfilm aperture cards
maintained on a continuous basis 524
One-quarter section maps reproduced to a scale of
1" = 200' and bound in atlases 524
One-quarter section maps revised..... 101
Number of revisions to the one-quarter section maps 154
Number of one-quarter section maps remicrofilmed 182
Street maps of the City updated (only area
within City of Milwaukee revised from 2001 map-change data):
A single-line map, size: 36"x60", scale: 1" = 1,800'
A double-line map, size: 42"x90", scale: 1" = 1,500'
Certified Survey Maps processed 105
Subdivision Plats processed 3
The Official Map one-quarter section maps;
scale: 1" = 200', on file (53 of these maps were
revised with a total of 87 revisions) 445

LAND ACQUISITION, STREET DEDICATION, PUBLIC WAYS VACATION AND MISCELLANEOUS ACTIVITIES - 2004

Dedications of City Property for public right-of-way 0
Acquisition of rights-of-way by accepting deed reservations or by quit-claim 4
Reject Reservations 0
Release access restriction 0
City property to be sold 0
Vacation of Public Ways
Street Vacations 12

Alley Vacations 8
Prepare easement and private road descriptions 0
Annexations to the City of Milwaukee 0
Transfer right-of-way jurisdiction (County to City) 0
Various title reports for vacation projects and/or sewer and water easements 12
Street name change ordinances prepared 2
Designate private streets 1
Latitude and longitude locations compiled for the public 0
Oversize and overweight load routes checked for the Department of Public Works, Contract and Permits Office and private trucking companies* 682
House moving permit applications processed for the Department of Public Works 1

DIGGERS HOT LINE - 2003

Hot line requests 32,349
Utility information requests 345
Out-of-City requests 7,157
Total Hot Line Requests 38,538

TRAFFIC AND STREET LIGHTING ACTIVITIES - 2004

Street Lighting Circuit Maps on file 534
Street Lighting one-quarter of one-quarter section maps on file 1,228
Revisions to Street Lighting circuit and one-quarter section maps 453
Special Lighting Maps on file 187
Revisions to and creating special lighting maps 33
Problem signal records processed 45
Traffic count studies-manual 18
Revisions to pavement marking records* 0
Revisions to Street Lighting Data Base 4,182
One-quarter section curbline maps prepared for Street Lighting digitizing project 154
¼ Sections Digitized During 2004 49

ADDRESS ASSIGNMENTS AND SALES - 2004

Address assignments 25
Sales Summary:
Maps, Plats and Plan Sales $10,002.44

SUPPLY SERVICES - 2004

Dollar amount of supplies requisitioned by Central Drafting and Records $9,079.53

REPRODUCTION SERVICES - 2004

Approximate quantity of electrostatic printing done in house* ..... 115,282 sq. ft.

Approximate quantity of paper used for plotters:

Large format HD's bond paper	79,200 sq. ft.
Vellum	900 sq. ft.

Approximate quantity of electrostatic printing done under contract

by a private printer	242,324 sq. ft.
Total Reproduction Services	437,706 sq. ft.

* Xerox 3050 machine and reader/printer for aperture cards.