

CITY ENGINEER



2005 annual report

ANNUAL STREET PROGRAM COVERS 5 MILES

This year's overlay, patching, and concrete repair projects covered over 5 miles, approximately 2.1 % of the City's 236 miles of streets.

ON THE COVER

The paving crew from Milestone Contractors lays the first pull on Cleveland Street as part of the annual overlay project. Tack coat is applied to the existing surface of Cleveland Street to ensure a bond between the existing and new asphalt surface to prevent raveling. The tack can be seen to the left of the paving machine. Asphalt compacts approximately 1/4" per 1" laid. Therefore the mat is laid at slightly more than 1-1/4" so the depth after compaction is 1". Finished asphalt at 1" depth weighs approximately 110 pounds per square yard.

OVERLAY REPAIRS

CASE Construction was awarded a contract for street repairs that included 1988 syds of patching. Addressing these problems before overlaying the streets will extend the pavement life and mitigate the need to cut into newly paved streets. The total cost of patching was \$47,712.

OVERLAY PROGRAM

Milestone Contractors was awarded the City's annual overlay project with a low bid of \$286,334. As part of the overlay project, Milestone raised manholes, water valves, detector housings, and installed thermoplastic pavement markings. Milestone placed 5047 tons of asphalt on 4.9 miles of City streets. To overlay a one mile stretch of City street 24 feet wide by 1 inch in depth costs \$30,588.80.

MISCELLANEOUS REPAIRS

Miscellaneous street repairs were made in Pinehill Estates, Harrison Hills, Mallard Point, Timber Ridge and Tipton Lakes Blvd. CASE Construction was awarded the project with a



CASE Construction prepares a concrete street repair

low bid of \$184,580. CASE removed and replaced 1435 syds of concrete street at a cost of \$59,525, and repaired 4 inlets and 5 syds of concrete walk at a cost of \$2500. Also included in the miscellaneous street repairs bid were underdrains. The underdrains are reported on page two.

ACCESSIBLE RAMPS

In a continuing effort to bring our walkways into compliance with the Americans with Disabilities Act, the city quoted a curb ramp project to bring the 2004 overlay streets into compliance. Meshberger Construction was awarded the project with a low quote of \$6970. MCCI installed 11 ramps and replaced 8 syds of sidewalk.

653 FEET OF PIPE ADDED TO STORM SEWER

The City awarded contracts totaling \$144,224 for miscellaneous drainage repairs and improvements in 2005. Through City contracts, 653 linear feet of pipe were added to Columbus' storm sewer system. In addition to the new pipe, 3 new drywells, and 5 new inlets were installed. The existing storm sewer system is aging and requires maintenance to avoid failures. Several repairs were made this year including 7 inlets, 2 drywells, and 76 feet of curb.

150 West and Deaver Road

CASE Construction was awarded the contract to complete a storm sewer installation and road improvement project at the intersection of roads 150 West and Deaver Road. The project improved a slightly skewed intersection with inadequate turning radii, no shoulder, and a deep ditch within a few feet of the edge of pavement. The project includes 485 feet of new 24" ADS High Density PolyEthylene (HDPE) pipe, and 5 new storm inlets.

DRAINAGE MAINTENANCE

Each year, a number of drainage structures fail throughout the City.



Example of sink hole beginning to form at an inlet

In the older sections of town, structures made of brick or concrete block with mortar joints have been in service for decades without failure. Eventually, time and the elements compromise pipe joints and the soil surrounding them slowly seeps into the structure creating a sink hole. This is usually the first indication of a problem. Some newer structures can be repaired, but most of the older brick and mortar structures need to be replaced. In 2005 the City spent nearly \$19,000 for this type of maintenance.

A type of preventative maintenance being pursued is the installation of underdrains. Underdrains are perforated pipes that are installed under the edge of the roadway.



Timber Ridge receives underdrain and is awaiting an asphalt patch.

They are designed to keep the ground water away from the pavement. Wet sub-grade makes the pavement susceptible to freeze/thaw failure. In 2005, CASE Construction installed 7781 feet of underdrains at a cost of \$104,654 as part of the bid for miscellaneous street repairs.

WALK WORKS 2004

Walk Works, the City's sidewalk replacement program, was established in 1991 to encourage property owners to replace unsafe, deteriorated sidewalks and to build new sidewalks. The program has facilitated the replacement of more than eight miles of sidewalks in the last twelve years. This year the City reimbursed property owners \$10 per linear foot of sidewalk after it was replaced and inspected.

Walk Works 2005 replaced 1000 linear feet of concrete sidewalk across 19 lots. In addition to the *Walk Works* program, other walks and paths were installed with Engineering Department support. Workers from the City Garage made repairs to walk and curb. The Engineering office also helped fund the installation of a people trail link along Middle Road.

INDOT PROJECTS

The Indiana Department of Transportation continues to develop the State sponsored improvement projects in the Columbus Area. In 2005 INDOT reviewed and reprioritized all projects based on their budget and a point rating system. This new project list and schedule is for projects to begin construction in the next ten years.

INDOT is in the process of acquiring rights-of-way for the US 31 project, which is scheduled to begin construction in 2008. The project includes 4 travel lanes with a center turn lane, new concrete curb and gutter, new storm sewer, new sidewalk, interconnected signal equipment, and two new bridges.

State Street is scheduled for improvements between Marr Road and Mapleton Street. The improvements include 4 travel lanes with a center turn lane, sidewalk replacement, realignment of Mapleton/Pence Street, new traffic signals at

Marr, Gladstone, and Mapleton, and new left turn lanes at intersections. These improvements are scheduled for contract in 2008.

Improvements are scheduled for State Road 11. INDOT plans to add a center left turn lane from the State Road 46 intersection to Road 200 South. The improvements are projected to provide an acceptable level of service and reduce the number of rear end accidents.

PROJECTS IN DEVELOPMENT

The City is in the process of purchasing rights-of-way for an improvement project for Rockyford Road designed by AECON, Inc. The improvements will be from Duffer Drive to Marr Road. Improvements include a four lane section with curb and gutter, storm sewer, pedestrian trail, and intersection realignment. Currently 4 parcels remain unacquired. If the right-of-way is acquired in a timely manner, the project will let this summer.

Also under development are improvements to 17th Street from Central Avenue to US 31. Improvements include 4 travel lanes, sidewalk, curb and gutter, storm sewers, and dedicated bicycle lanes. Plans prepared by Strand Associates have received design approval from INDOT. Contracts for right-of-way engineering are at INDOT for approval and it is anticipated that work will begin in January. Construction is projected to begin in 2008.

Road 200 South between State Road 11 and 150 West is scheduled for improvements. Improvements will include a dual left turn lane, curb and gutter, and storm sewer. Plans are currently being prepared by Janssen & Spaans Engineering for field check submittal to INDOT. Construction is projected to begin in 2008.

NPDES PERMIT

In continued efforts to comply with the National Pollutant Discharge Elimination System (NPDES) phase II storm water permit for the City, the Engineering staff, along with staff from various other City departments, is working with consultant DLZ. DLZ has been hired to provide technical assistance to the City to comply with the complex regulations of the rule.

The permitting and certification process is designed to improve storm water quality in communities with populations greater than 10,000.

The City has prepared a Storm Water Quality Management Plan (SWQMP) that has been reviewed by the Indiana Department of Environmental Management (IDEM). The SWQMP outlines a set of Minimum Control Measures (MCMs) that will lead to the City achieving its goal of improved storm water quality. A list of the MCM are shown to the right of this column.

A few of the MCMs are currently implemented through practices that have already been in place. Most of the MCMs will be new tasks to be completed by various City departments. Potentially affected departments within the City include: Engineering, Planning, City Services, City Utilities, and Parks & Recreation.

City Engineering Staff

Steve Ruble	City Engineer
Steve Rucker	Assistant City Engineer
Randy Sims	Senior Engineering Technician
Rebecca Douglas	Technician
Patricia Whitson	Technician
Jason Perry	Technician

NPDES Minimum Control Measures

- PE-1** Public Education Materials
- PE-2** Survey of Storm Water Knowledge
- PE-3** Understanding Storm Water Brochure
- PE-4** Utility Bill Inserts
- PE-5** Storm Drain Stenciling Door Hangers
- PE-6** Newspaper Articles
- PE-7** Pet Waste Education
- PE-8** Restaurant Education
- PI-1** Public Input on Key Issues
- PI-2** Public Notice of Council Meetings
- PI-3** Storm Drain Marking
- PI-4** Promote Volunteer Opportunities
- PI-5** Advertise Citizen Group Activities
- ID-1** Storm Sewer System Map
- ID-2** Illicit Discharge Ordinance
- ID-3** Illicit Discharge Policies and Procedures
- ID-4** Complaint Tracking Mechanism
- ID-5** Dry Weather Screening
- ID-6** Illicit Discharge Education
- ID-7** Annual Training
- CS-1** Erosion Control Ordinance
- CS-2** Plan Review
- CS-3** Track Erosion Complaints
- CS-4** Inspection and Enforcement
- CS-5** Training
- PC-1** Develop BMP Manual
- PC-2** Enforce BMP Manual
- PC-3** Inspect Post Construction BMP's
- PC-4** Train Inspectors and Plan Reviewers
- PC-5** Drywell Inventory
- GH-1** Training on Good House Keeping
- GH-2** Inspect and Clean Storm Structures
- GH-3** Pet Waste Stations
- GH-4** Evaluate Flood Control Projects for Opportunities to Address Water Quality
- GH-5** Street Sweeping
- GH-6** Drywell Cleaning
- GH-7** BMP Cleaning
- GH-8** Litter Pick-up
- GH-9** Yard Waste Composting / Clean-up Columbus Days
- GH-10** Road Deicing Material Storage
- GH-11** Vehicle Washing
- GH-12** Lawn Care / Fertilizer
- GH-13** Pesticide and Herbicide Use
- GH-14** Documentation of Maintenance Activities
- GH-15** Procedures for Disposal of Waste from Conveyances

PERMITTING

The City Engineer's office administers several types of permits to control day to day impacts to infrastructure and traffic. Applications for permits can be picked-up in the Engineering office or they can be accessed on-line at the following web address:

<http://www.columbus.in.gov/engineers-row.html>

There is no charge for making permit applications to the Engineering office.

A Special Use of Right-of-Way permit is required any time the right-of-way is going to be incumbered. Typical applications are for street closures, closure of sidewalks, or parking spaces. Although the City Engineer can approve some requests, any lane closures on City streets must be approved by the Board of Public Works and Safety. One hundred twelve applications were processed in 2005 for everything from parades to cranes to place HVAC units on downtown roofs.

A Permit to Excavate in Public Street, Alley or Right-of-Way is fairly self explanatory. Applicants for this type of permit are generally accessing utilities that reside within the right-of-way of a City street. Some utilities lie under pavement necessitating a street cut to access the utility.



Typical Street cut for water main repair

Although there is no cost to make the permit application, contractors are required to bond their work for a period of three years to protect the City infrastructure that they have impacted. The City Engineer's office processed 357 permits to excavate in a public street, alley or right-of-way in 2005.

Improvement in the Right-of-Way Permits are required for work done in the right-of-way that does not fall under the Permit to Excavate in Public Street, Alley or Right-of-way. Typical applications are for driveway or curb repairs. Improvements are required to meet City standards and the Engineer's office inspects all work. Sixty Improvement in the Right-of-Way Permits were processed by the City Engineers office in 2005.

INTERDEPARTMENTAL ASSISTANCE

The Engineer's office provides technical assistance to other City departments to facilitate administration or complete projects. The Engineer's office provided the following assistance in 2005:

Mayor's office

- Waterfront Development Committee
- Vision 20/20 Committee
- Technology Task Force

Planning Department

- Plan Commission Member
- Subdivision and Plat Review Committee
- Improvement plan review
- Drainage plan review

Community Development

- CDBG Sidewalk Project
- Economic Revitalization area Map

Police

- Accident mapping and diagrams
- Narcotics location maps

Fire

- Drive Repair at Station #4

