

2014 Engineering Annual Report

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Introduction

The City of DeKalb Engineering Division is located under the Public Works Department. It consists of 2.35 Full Time Equivalent employees. The division receives 0.5 FTE from the services of the Administrative Associate, 0.85 FTE from the Assistant Director of Public Works Building-Engineering-Transportation/City Engineer (ADPW BET/CE), and 1 FTE from the Project Implementation Engineer. Fifteen percent of the ADPW/CE position is dedicated towards directing the Metropolitan Planning Organization (MPO) entitled DeKalb Sycamore Transportation Study (DSATS).

Functions

The Engineering Division works with the citizens of DeKalb, private contractors, Federal, State and Local Agencies, Northern Illinois University, Union Pacific Railroad, and utility companies. It is important for that the Engineering Division foster these relationships to accomplish its engineering goals. The primary functions of this department are:

- Infrastructure design, maintenance, construction, and contract management
- Construction Services for private contractors, public construction projects, and residents
- Community Services
- Program Administration

The Engineering Division is responsible for the design, maintenance, construction, and reconstruction of the City's infrastructure. This includes streets, alleys, sidewalks, bridges, traffic signals, street lights, and storm sewers. The annual Capital Improvements Program administered by the Division addresses the needs of the infrastructure. This program is funded through several funding sources including the State Motor Fuel Tax, the Local Gas Tax, Community Development Block Grants (CDBG), Tax Incremental Finance Districts. The design of the construction documents infrastructure projects can be produced within the division or by contracting with a consultant. When documents are produced within the division staff is responsible any or all of the project activities. These activities include surveying to project site, calculating quantities, preparing plans and specifications, the letting of the contract, and the presentation of the bids to the City Council for award. If the project is contracted to a consultant, engineering staff will prepare a Request for Proposal (RFP) for engineering services as needed as well and designing the infrastructure improvements within the division as time permits.

Construction Services are an essential part of every construction project. On public infrastructure projects this includes the daily supervision of construction activities. The importance of proper construction supervision cannot be overstated. Supervision of the construction projects effectively ensure that the project is constructed according to the plans and specifications developed in design. This activity has a large impact on controlling the cost by measuring and documenting quantities.

Construction supervision is also an essential part of quality control by ensuring the use of the specified materials. In addition by documenting the project as-built or record drawings are produced that will be relied upon for future projects. Private development project demands construction engineering services for residential, commercial, and industrial projects. In order to ensure private contractors construct infrastructure in compliance with City Code and standard engineering methods, the engineering department will perform inspections for quality assurance. The engineering division also provides

inspections for residents making improvements to their properties. These inspections are conducted to ensure landscaping, fences, sheds, and landscaping projects are in compliance with City Code. The Engineering Division provides an array of community services to its citizens. While infrastructure projects require a significant amount of attention the staff recognizes the importance of providing outstanding service to the residents of DeKalb. The activities conducted include:

- Providing recommendations to residents to resolve minor drainage concerns
- Conduct traffic and parking studies at request
- Residential and Commercial Site Plan Review
- Levee Inspection and floodplain management
- Provide Construction Management Services for Infrastructure Projects
- Provide engineering support to the Administrative, Planning, Streets, and Water Departments

The Engineering Division utilizes intergovernmental relationships and networks to administer Federal programs. This division also submits grant applications to Federal and State agencies to assist in funding infrastructure projects. When these grant applications are successful, the grant is administered through this Division. Currently the Engineering division manages the Nation Flood Insurance Program (NFIP) through the Community Rating System (CRS). By participating in this program all residents required to have flood insurance receive a discount. The Division is also responsible for complying with the requirements of the National Pollution Discharge Elimination System (NPDES) as well as administering the program under the Illinois Environmental Protection Agency (IEPA). This program aims to reduce the pollution that impairs all bodies of water. The City is required to comply with the program and well as ensure that anyone developing land within the municipal boundaries is also in compliance.

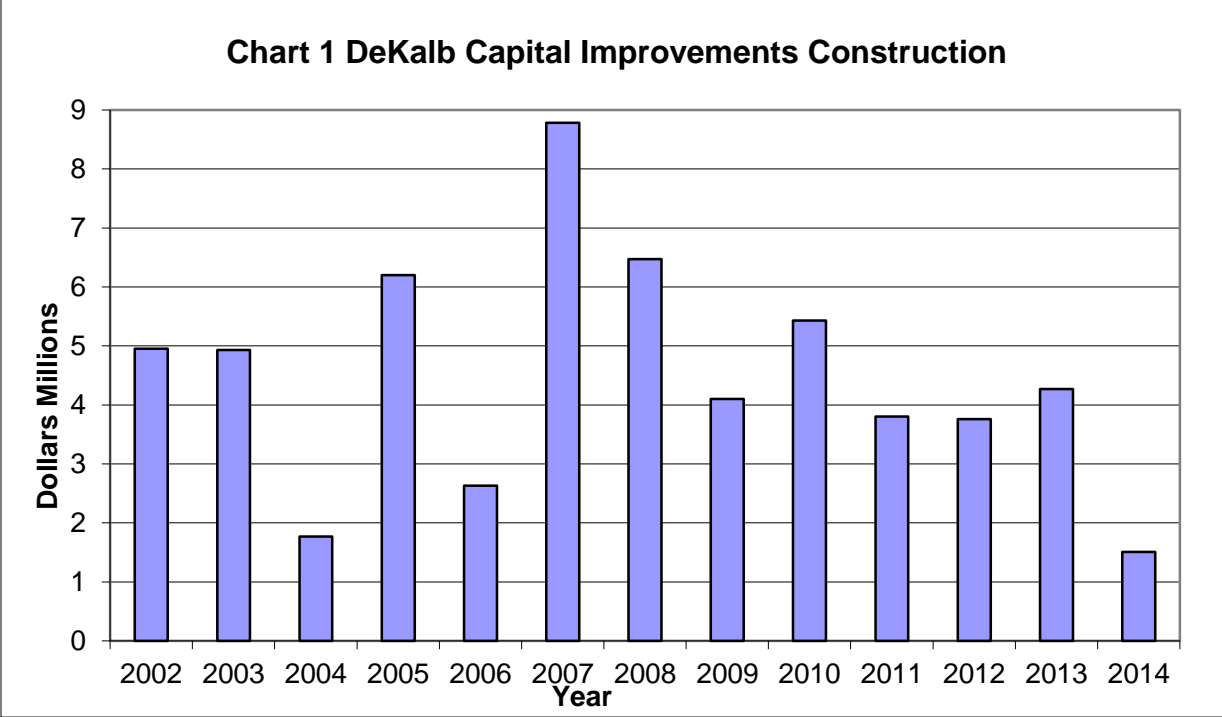
2014 Highlights

Table 1 below illustrates the Capital Improvements Projects Completed by the Engineering Division 2013 and the cost associated with each project. These project include two road construction projects, a road maintenance, traffic signal lighting, street lighting, and a water main project.

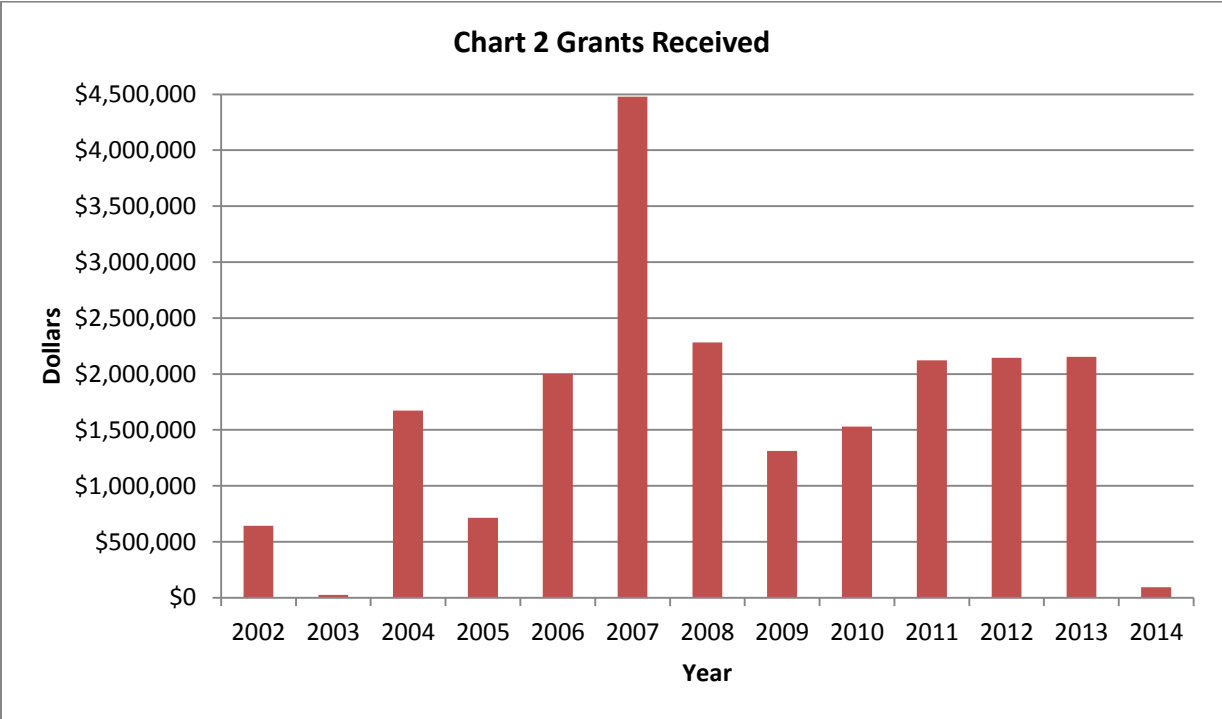
Table 1. 2014 Capital Improvements

Project Name	Project Cost
PARKING LOT 7	\$140,000.00
JOANNE LANE LEVEE	\$89,200.00
2014 NON-MFT STREET MAINTENANCE	\$1,276,000.00
Total	\$1,505,200.00

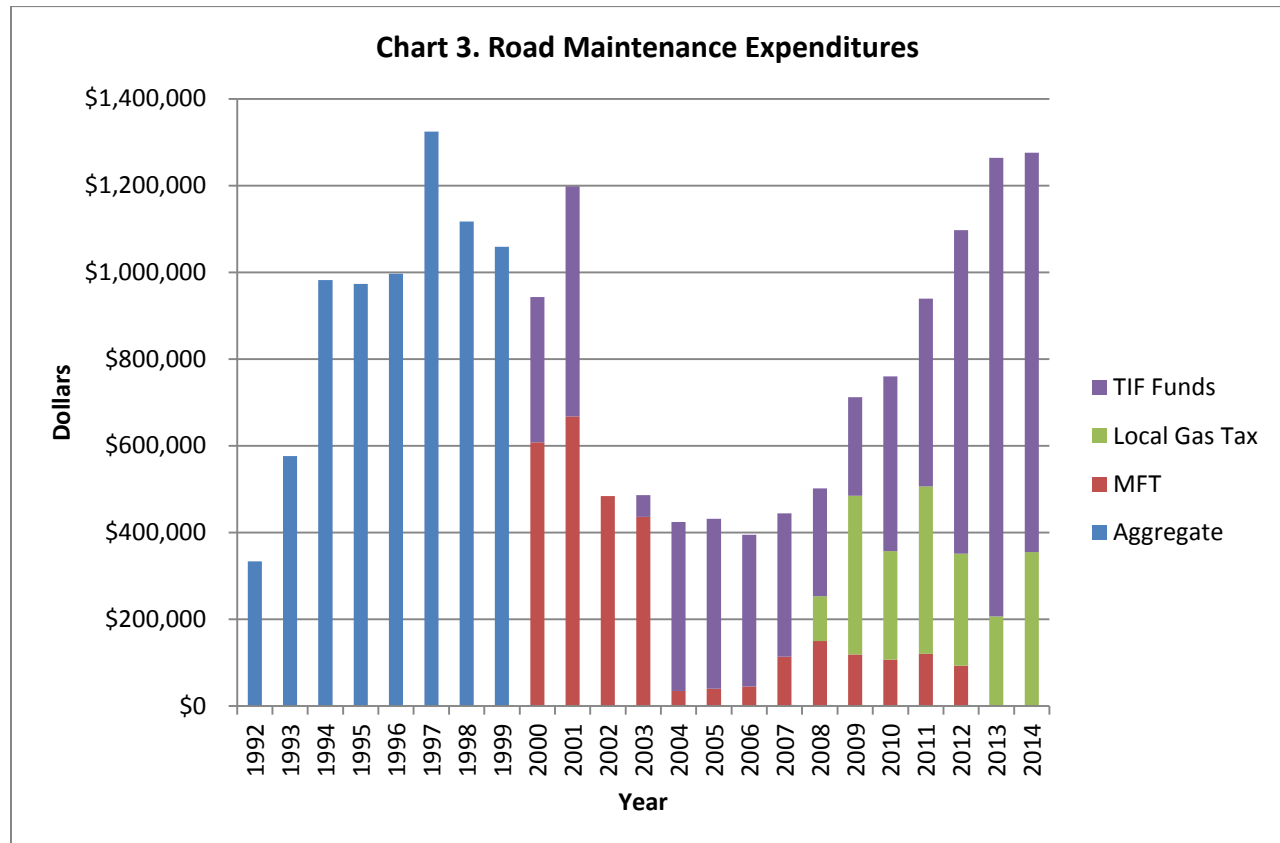
Chart 1 below illustrates the expenditures used to maintain the City’s infrastructure over the last thirteenth years. The total expenditures illustrated in Table 1 above corresponds to the 2014 bar in Chart 1 below The capital improvements projects from 2002 to 2014 are similar to those projects identified in Table 1 above. Both road maintenance and road construction projects and water main projects are considered capital improvement projects and thus both are represented in Chart 1 below.



Capital Improvement projects have been funded from a variety of different sources. These include funding from Gas Tax, State Motor Fuel Tax, TIF District 1, TIF District 2, the Water Fund, and a variety of grants. Chart 2 below illustrates the grants received by the city from 2002 to 2014 for infrastructure projects. The grants issued to the City of DeKalb have been remaining steady at approximately two



millions dollars from 2011 to 2013. In 2014 a significant reduction of grant funds were realized. This reduction may be attributed to a reduction in the number of grant opportunities as well as increased competition for available grants. Staff continues to pursue grants as opportunities are identified. Chart 3 below examines the funding sources each year. Over time the City has become more reliant on TIF funding for road maintenance and less reliant on MFT with the same contribution coming from the Local Gas Tax. In 2014 the city performed street maintenance on the following streets in TIF District 1 North 14th Street, North 9th Street and Seaman Avenue. In TIF District 2 the following streets received maintenance: South 2nd Street, Prospect Street, Leonard Avenue, East Roosevelt Street, Culver Street



2015 Outlook

The Engineering Division will be engaging in the following activities in 2015:

- IMS to complete the surface testing of the street network to update.
- Completing the First Street Water Main Project
- Continue to work with stakeholders, and the consulting engineer to make progress on the design and land acquisition necessary to construct the Kishwaukee Bike Path.
- Continue to pursue grant opportunities though State and Federal Agencies.
- Completing the second phase of the First Street Water Main design and construction
- Completing the design and construction of the 2016 Non- Motor Fuel Tax (MFT) Street Maintenance Project

Division Analysis: Strengths-Weaknesses-Opportunities-Challenges (SWOC)

The Engineering Department has categorized and identified the strengths, weaknesses, opportunities and challenges facing the division. The overall analysis is intended to strategically improve the level of service the Division provides by identifying increasing efficiency, productivity, and responsiveness.

Strengths

The Engineering Division enjoys a strong relationship with the citizens of DeKalb. We maintain this relationship by responding quickly to resident concerns. By addressing their questions and concerns regarding sidewalks, drainage, streets, lighting, parking regulations and traffic signals the Engineering Division will continue to provide the citizens of DeKalb with a high level of service.

Weakness

The Engineering Division has a large repository of documents that contains a vast amount of organizational history. Accessing these archives and retrieving records is a time consuming process because they are dispersed throughout the City. Staff continues to learn about how records are catalogued will gradually become more proficient at locating historical documents.

Opportunities

The Engineering Division has the opportunity to analyze how engineering services are provided. Currently there is a substantial reliance on utilizing consulting engineers. This Division has the opportunity to evaluate if this is the most cost effective manner of service provision. The options include utilizing consulting services on an individual contract basis, utilizing a single consulting engineer for all engineering services for a specified duration, or providing engineering services within the division itself with the addition of an additional staff member.

Establishing professional relationships with other agencies is an opportunity that should be closely examined. Identifying common goals helps allows for the transfer of ideas as well and the leveraging of capital. Building relationships through DSATS, the DeKalb County Stormwater Management Committee, and with Northern Illinois University allows the Engineering Division to leverage its resources for the benefit its stakeholders.

Challenges

One of the challenges facing the City of DeKalb and in particular this division will be funding infrastructure projects. As the Federal and State governments continue to recover from the recession the City will be competing against an increased number of applicants for limited financial resources available through grants. Another concern is that the TIF districts currently fund the vast majority of street maintenance projects. This limits the use of this funding to geographic area established by the TIF district. Thus all streets outside the boundaries are limited to Gas Tax and Motor Fuel Tax in their funding. If the infrastructure is to maintain the current level of service a funding source for roads must be identified.