

## Engineering / Traffic Operations Center (TOC)

*Paul P. Holzen, (Interim) Director*

### ENGINEERING

The Engineering Department plans for the future infrastructure needs of the City of Franklin and consists of three divisions. The divisions include Engineering, Traffic Operations and Stormwater. The department works with other City Departments, elected officials, and the public to ensure that our infrastructure is designed and installed properly and that it meets all Local, State and Federal standards and guidelines. Both City-funded and private infrastructure projects are managed and reviewed by the Engineering Department.

The Traffic Operations Division manages the transportation network within the City of Franklin and is responsible for signal timing. A goal of the Traffic Operations Division is to perform timing optimizations for signal systems. Currently there are three major systems in the City - Cool Springs, SR 96 E (Murfreesboro Rd.), and Downtown (Main St, Fifth Ave, Columbia Ave). An optimization is like a tune-up for a car engine. Everyone that uses those optimized systems saves time and fuel over the previous conditions they may have experienced.

The Stormwater Division helps the City stay in compliance with mandates set by the Federal (EPA) and State (TDEC) Governments to minimize stormwater runoff. Under the Clean Water Act of 1972, the Environmental Protection Agency (EPA) requires municipalities like Franklin to manage stormwater. The City has received a Phase II Municipal Separate Storm Sewer System (MS4) Permit from the Tennessee Department of Environment and Conservation (TDEC) to allow Franklin to discharge stormwater into nearby rivers and streams.

### TRANSPORTATION OPERATIONS CENTER (TOC)

The Transportation Operations Center (TOC) has identified two goals from its ongoing Congestion Management Program that create positive benefits for the public. They are the Traffic Data Collection Program and the Traffic Signal Timing Optimization Program. These two programs allow the TOC to track and monitor both the changes in the transportation network as well as the effectiveness of the application applied to the transportation network. These efforts produce real world improvements in traffic related issues, such as decreasing overall traffic delays, improving safety, and the reduction of vehicular pollution.

#### *Traffic Data Collection Program:*

Traffic Counts or Data Collection have been and continue to be the most basic building blocks of any traffic management system. With the rapid growth and development of the City of Franklin in the recent past, traffic volumes have also grown and developed. This program was designed to perform "turning movement counts" for each peak hour at each of our nearly 95 signalized intersections every three years.

1. SR 96 E, Mack Hatcher and Hillsboro Rd Corridors.
2. Cool Springs Blvd, Carothers Parkway and Mallory Lane Corridors.

3. Downtown Franklin, SR 96 W and Franklin Road Corridors.

The data collected is used to develop traffic signal timing plans that will best move traffic with highest degree of safety and minimal delay. By utilizing traffic modeling software, we develop intersection timing plans that best manage those rush hour flows.

*Traffic Signal Timing Optimization Program:*

Traffic Signal Optimization is the primary activity utilizing the data collected by the Annual Traffic Data Collection Program. A 2005 Institute of Transportation Engineers White Paper on *Benefits of Retiming Traffic Signals* states, “An operating agency with a budget to retime traffic signals every 3 years, especially in developing areas and/or areas with sustained growth, will maintain a high quality of traffic operations.”

The City of Franklin currently has 3 primary signal systems. They are SR 96 E, Downtown and the Cool Springs Galleria area. The chart below indicates some of the benefits achieved through Traffic Signal Optimization. The data presented shows reductions in 3 key areas: Travel Time Delay and reduced Hydrocarbon and Carbon Monoxide emissions.

<b>Improvements</b>	<b>2010 Actual</b>	<b>2011 Actual</b>	<b>2012 Projected</b>	<b>2013 Goal</b>
System	SR 96	SR 96 E*	West Main/5 <sup>th</sup> Ave/Hillsboro/ Columbia	Cool Springs
Delay	10%		15%	15%
Hydrocarbon	Avg./Results		Avg./Results	Avg. /Results
Carbon Monoxide	Avg./Results		Avg./Results	Avg. Results

*\*The City of Franklin using Data and results provided in 2008 for SR 96E to perform an adjustment to the SR 96 E system in 2011. This adjustment took into consideration changing traffic flow on Carothers Pkwy not previously consider in the 2008 study.*

**STORMWATER**

One of the Stormwater Division’s goals is to reduce and eliminate non-stormwater flows (called illicit discharges) from the City of Franklin Municipal Separate Storm Sewer System (MS4) to improve water quality in the Harpeth River Watershed. MS4s discharge directly to rivers and streams without being treated at a treatment plant. This means whatever washes into the city’s storm sewer system ends up in our rivers and streams. By monitoring each outfall point, the City is able to identify and eliminate sources of water pollution. The City will inform public employees, businesses, and the general public of the hazards associated with illegal discharges and improper disposal of waste. The public can report suspected illicit discharges via the City website or the Stormwater Pollution Hotline (615-791-3218). Documented illicit discharges will be eliminated as soon as possible.

Performance Measure: Inventory all stormwater inlets and outfalls in the Franklin City Limits; once inventory is completed, field screen each outfall for pollutants. If pollutants are identified follow-up inspections will be made to find and eliminate the source of pollution.

Measure/Goal	FY10 Actual	FY11 Actual	FY12 Projected	FY13 Goal
Number of Inlets and Outfalls Inventoried	862	1,200	200	500
Number of Outfalls Screened for Pollutants (after inventory completed)	0	0	100	100
Number of Outfalls Positive with Pollutants	0	0	TBD*	TBD
Number of Illicit Discharges Eliminated from Outfalls	0	0	TBD*	TBD

\* Outfall screening is still being completed. Currently, none have been positive with pollutants.

#### RIGHT-OF-WAY

When meeting with property owners to acquire right-of-way and easements we strive to give the property owner all the information about the upcoming project. We also work extremely hard to meet with affected property owners on more than one occasion (even before or after normal working hours). Although it is our goal to get all documents signed without using condemnation, it is not always possible. Some property owners are unwilling to work with the city, others will not respond to certified mail or phone messages. When this situation persists, we have no choice but to enter into condemnation proceedings. This performance measurement is comparing how many properties were to be acquired, how many were successfully acquired without condemnation and how many times the city entered into condemnation. In the future we will also be keeping up with the number of times we made contact or met with property owners. We hope this information will be helpful in the future for budgeting, staffing and scheduling needs.

The Right-of-Way Goal for the Engineering Department is to successfully acquire 80% of the properties through negotiations (without having to go into condemnation proceedings). See the chart below for the most recent property acquisition data:

PROJECT NAME	TOTAL NUMBER OF PROPERTIES	NUMBER OF OFFERS	SIGNED, AGREED OR CLOSED	CONDEMNATIONS
Hillsboro Road Improvements Project	63	26	16	0
MTEMC Offsite Easements Line A	67	67	64	0
Century/Beasley Connector	1	0	0	0
Mack Hatcher NW Quad	45	45	41	4
McEwen Drive at Wilson Pike	5	4	1	0
TOTAL	181	142	122	4
			96.8%	3.2%



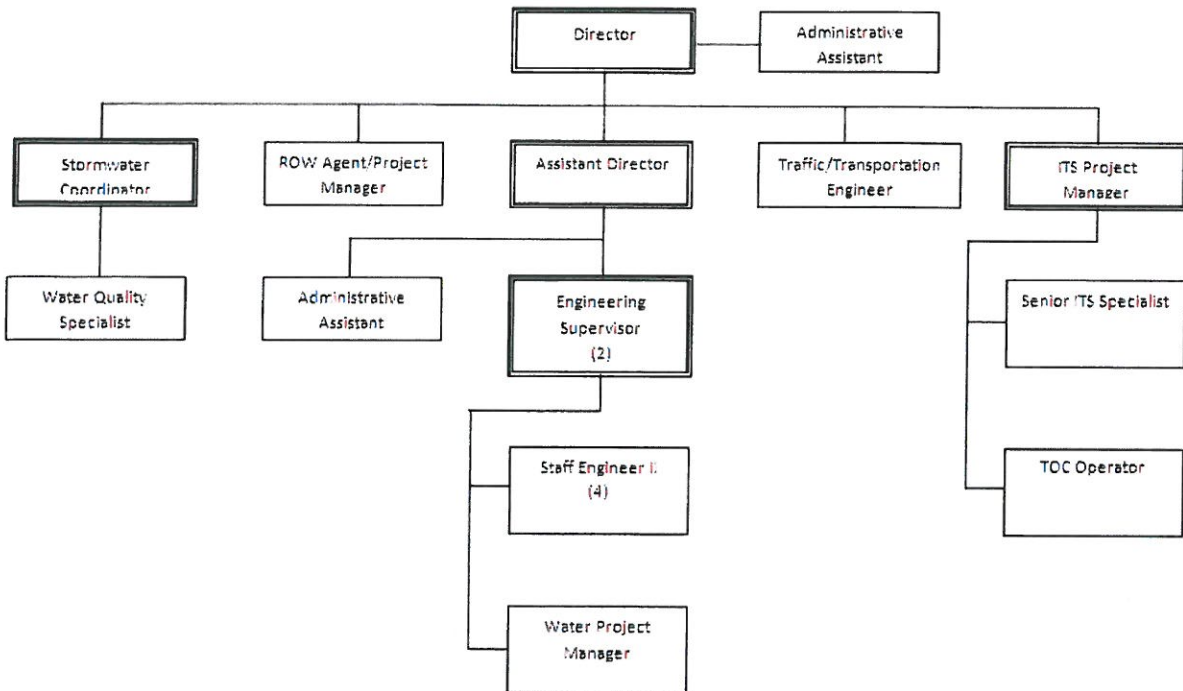
## Sustainable Franklin

The Engineering Department has continued to be proactive to incorporate sustainable measures into infrastructure projects. Over the past year, staff has implemented a new pilot program that grants water quality and detention credit for Permeable Interlocking Concrete Pavers. This was done to promote infiltration of stormwater to reduce the overall amount of runoff leaving a site. Additionally, staff has promoted widespread integration of low impact development designs, including promoting rain gardens into development project designs. Staff will continue to seek opportunities to incorporate alternative modes of transportation, energy efficient lighting and other sustainable measures into the infrastructure projects planned for the City.

Both Engineering and Planning have worked together to establish the City's first renewable energy public-private partnership. This project consisted of building a 200kW solar array at the City's wastewater treatment plant. Construction is anticipated to be complete by May 2012.

The Engineering Department will continue to move towards implementing "paperless" office strategies by moving all review of plans to electronic files instead of multiple paper copies. This will result in less paper being wasted as well requiring significantly less physical storage space for sets of paper plans. Ongoing initiatives include migrating to a new web-based electronic plan review system and establishing a digital archive of approved construction plans.

# Organizational Chart



# Staffing by Position

## Engineering Department

Position	Pay Grade	FY 2012			FY 2013		
		Full-Time	Part-Time	Not Funded	Full-Time	Part-Time	Not Funded
Director of Engineering	25	1	0	0	1	0	0
Assistant Director of Engineering	23	0	0	0	1	0	0
Engineering Supervisor	22	2	0	0	2	0	0
Engineer II	21	2	0	0	3	0	0
Engineer I	20	2	0	0	0	0	0
Right of Way Agent/Project Mgr	18	1	0	0	1	0	0
Administrative Asst.	12	2	0	0	2	0	0
<b>TOTALS</b>		<b>10</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>0</b>	<b>0</b>

## Traffic Operations Center (TOC)

Position	Pay Grade	FY 2012		FY 2013	
		Full-Time	Part-Time	Full-Time	Part-Time
Traffic/Transportation Engineer	23	1	0	1	0
ITS Project Manager	19	1	0	1	0
ITS Specialist Sr.	17	1	0	1	0
TOC Operator	12	0	0	1	0
<b>TOTALS</b>		<b>3</b>	<b>0</b>	<b>4</b>	<b>0</b>

## Budget Notes/Objectives

### *Engineering*

- The Engineering Department is requesting 2 additional positions to include an Assistant Director of Engineering and a TOC Operator for FY 2013.
- Engineering is requesting \$528,000 in Capital for the construction of a sidewalk along Franklin Road. Of this amount \$484,200 is anticipated to be taken from the Sidewalk Fund contributed by Jamison Station.
- TOC is requesting \$140,000 in Consultant services as part of the operations budget. This funding is part of the Traffic Signal Timing Optimization and Testing Program for the Cool Springs Area.
- TOC is requested \$2,125,000 in Capital. Of this amount \$1,432,000 will be reimbursed to the City through grants.
- Stormwater is requesting \$235,000 in consultant services as part of the operations budget. This funding is for our BMP Manual Update, GIS Impervious Surface Update and Stormwater Management Master Plan.
- Stormwater is requesting \$1,840,000 in Capital for storm water improvement projects.

