**Building a Traffic Management Center: A Design Build Implementation**

**City of Sandy Springs, Georgia**

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**Synopsis**

The City of Sandy Springs, Georgia, became Georgia’s 7th largest city upon its incorporation in December 2005. The Governor’s Commission, which helped the city in start-up, elected to use the public private partnership model to set up and operate the new city government, and CH2M HILL was selected to partner with the City of Sandy Springs. The City’s Public Works staff and services are provided through this partnership with CH2M HILL.

The City inherited an antiquated traffic management system upon its incorporation. Sandy Springs is located near Atlanta, and commuter traffic is a major concern for both citizens and the City. During the first few months of city management, traffic services staff completed hundreds of work orders, focusing on basic maintenance issues such as replacing bulbs in traffic signals and repairing pavement loops. During the following months, staff focused on adjusting traffic signal timing to maximize traffic flow as much as possible. Average daily traffic volumes on the City’s major arterial, Roswell Road (State Route 9), range from approximately 30,000 to 37,000 vehicles per day on a 9.5 mile stretch of this state highway. A before and after study conducted by a Georgia Tech professor showed that these adjustments to the traffic signal system along this corridor saved the citizens of Sandy Springs over $11 million in reduced travel time and emissions in 2007. A subsequent study in 2008 indicated that further adjustments saved the citizens an additional $5 million, and a study in the spring of 2009 showed an additional $1.5 million in annual savings following a signal timing project in coordination with the Georgia Department of Transportation. As a next step, the staff conducted studies of the traffic volumes, traffic patterns, and traffic control devices along the corridor. These studies indicated that the City needed to upgrade the traffic control infrastructure with additional traffic management tools and incorporate more sophisticated traffic management strategies and technologies in order to reduce traffic congestion along the City’s major arterial corridor. The staff’s next vision was to develop a state of the practice traffic management center (TMC) in order to tie the traffic signal system together, coordinate the timing of the traffic signals, and to monitor and adjust traffic flow to reduce congestion or to respond to emergency situations.

The City of Sandy Springs funded an initial investment of $1 million in FY 2008 for the build out of the TMC facility and for the first phase of the fiber optic installation. The City funded an additional $500,000 in FY 2009 to continue fiber installation and installation of additional traffic signal equipment. Additionally, staff worked with the Georgia Department of Transportation and requested funding to replace existing traffic signal controllers with modern controllers and network switches so that the controllers can communicate with each other. The City received $867,000 to replace 63 traffic signal controllers and cabinets. With the updated traffic controllers, staff at the TMC can control the timing of the signals to immediately reduce congestion at the scene of an accident, to allow faster travel for emergency vehicles, and adjusting the signal timing as needed throughout the day.

Travel time on the City’s main arterial, Roswell Road, has improved significantly since the implementation of the TMC. The savings to the City will be documented in another travel time study this fall. The citizens also benefit by having access to live streaming video on the city’s web site and are allowed to move the cameras to view different directions from home. This allows them to check the congestion in an area to plan their traffic routing. Additionally, the City has realized savings in improved customer response, as traffic services staff can now respond to many after hours requests through remote access to the TMC. Staff has verified that signals are working properly and have changed timings both from the TMC and from home. Further, alternate traffic signal timings have been developed to move traffic along the corridor in the event of incidents on the sections of Interstate and freeway within the City.

*Georgia Cities Magazine* recognized the project as one of the newest and most innovative traffic management solutions in the area. The project team used the design build concept, allowing facility build out to begin as the details of the final design were being approved. This approach saved time and money, allowing the facility construction to be completed ahead of schedule and under budget. The contractor was selected in January 2008, and the facility became operational in July 2008, five months ahead of schedule and $20,000 under budget. Further, the TMC has many unique features including live streaming video and voice activation. Sandy Springs Mayor, Eva Galambos, notes: “The Traffic Management System that has been put in place for Roswell Road by the Sandy Springs Public Works Department is state of the art.  From a central location, as traffic snarls occur, adjustments are made in the signaling system to keep traffic moving.   Everyone who has visited the Traffic Management Center is truly amazed.  Sandy Springs is being used as a poster child to demonstrate how technology can unsnarl congestion.”

The City is also leading in an Advanced Traffic Management Systems (ATMS) project sponsored by the Georgia Department of Transportation. This is a multi-jurisdictional project which also includes the cities of Roswell, Alpharetta, and Milton. The project is along the state highway common to the four cities, and design is underway for message boards and cross jurisdictional communications. This will provide information to the public regarding congested areas or emergency situations and will communicate this condition to the adjoining. This technology will also tie into the TMC.

Obstacles during this project included delays by the utility companies in adjusting their existing lines to make room for fiber installation, and delays by the Georgia Department of Transportation in executing the contract for the new signal controllers and cabinets.

**Presentation Components**

**1. Innovation/Creativity**

The TMC has improved the organization by providing real time information to the public, reducing travel time along the City’s major arterial route, improving response time for after hours calls, and by providing plans to shift traffic patterns in the event of an emergency on two interstate routes located within the city limits.

The staff used design build technology to manage the design, construction, and implementation of the Traffic Management Center. The TMC uses voice recognition technology, allowing staff to perform technical operations without having to stop to adjust screens, change camera views, etc.

The selection committee selected Protronix, Inc., and Genesis Group to develop and install design build TMC that would handle future needs for the city as it continues to grow. Contact information for Protronix, Inc., and the Genesis group is provided below.

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6120 Harris Technology Blvd.
Charlotte, NC 28269

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Fax: (704) 921-0444

Genesis Group (Tracy Forester)
2507 Callaway Road
Suite 100
Tallahassee, FL 32303

Phone: (850) 224-4400

Fax: (850) 681-3600

**2. Citizen Outcomes**

The citizens needed less congestion on the City’s major arterial corridor. The implementation of the TMC has improved travel time and decreased congestion along the corridor, saving individual citizens time and money. This initiative has also improved government access by providing up to date information regarding intersections on the City’s web site. Citizens can view live conditions to make decisions regarding their travel patterns. Additionally, the reduced delay has also reduced carbon and nitrogen emissions, improving the City’s air quality.

1. **Applicable Results and Real World Practicality**

This team can share the design build concept and implementation, ideas for applying for funding resources, and lessons learned in the development and implementation of a Traffic Management Center. This project is applicable to other governments who face similar challenges in finding innovative ways to respond to the traffic challenges and congestion, especially where larger roadways are not an option. The results of the travel time studies to be conducted this fall can be shared along with the other informal staff travel time studies and the number of calls that are being handled remotely rather than having to send staff to the field.

1. **Case Study Presentation**

The case study presentation will include a live demonstration via the Internet, a live view inside the TMC, a photo gallery illustrating the design build concept, and a PowerPoint presentation documenting the history and progress of the TMC.