A presentation to the
Florida Section Institute of Transportation Engineers
FSITE

Building Lakeland’s Traffic Management Center (TMC):
Mom warned us it wouldn’t be easy!

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Angelo Rao, PE
Manager, Traffic Operations and Parking Services
City of Lakeland, FL
City of Lakeland, FL (Polk County)
The birth of a Traffic Management Center....
Lakeland’s TMC - Infancy.....

• In the summer of 2005, our excellent partners at the Florida Department of Transportation (FDOT) District One, began the process of working with the City of Lakeland’s Traffic Operations Division (TOPS) to develop and implement the City’s first TMC.

• What a ride this work was!!

• In those days, we had a 100% copper “JHK Hybrid Signal System” (one work station) in place for the 174 traffic signals.

• This presentation provides the history, planning, design, and implementation steps that took place in getting the City fully integrated with 100% communication.
The early days...

With Hi-tech Government official Post-it notes!

Look out for the Pac-man!
Sectional Description of Intersections
Lakeland’s TMC - Adolescence.....

• In developing the system, the former Manager of the Traffic Operations and Parking Services Division, Mr. Don Nix (retired) worked with the FDOT D-1 team and consultant.

• The mission critical was to bring Lakeland into the 21st Century with a full traffic signal communication and operations system.
To accomplish this feat, the following sub-systems were introduced/upgraded:

• All existing copper communication cables were removed and replaced with 100% fiber connection;

• All existing National Electrical Manufacturers Association (NEMA) cabinets were replaced with Type 170 cabinets with Advanced Traffic Control (ATC) ASC-II 2070 controllers;

• The TMC consoles and work stations (two) were expanded;

• The video wall system was introduced with three video monitors supporting 42 new cameras; and

• The final programming of the controllers, network servers, network switches, and desktop computers took place.
Rick Grube aka Captain Kirk and movie star!!
Fiber Ring Network:

- 8 hubs;
- Supporting 10 Service Rings;
- 2003 – servicing 177 City/County/State intersections;
- 2017 – servicing 227 City/County/State intersections;
- At a cost of $1.7 Million to install; and
- $20,000 /year avg. maintenance costs.

The fiber also facilitates:
- Camera viewing of I-4 through Polk County;
- Lakeland Police Department viewing; and
- Polk County Sherriff’s viewing.
All this effort took about 18 months to complete at a cost of about $7,000,000 plus fiber installation of $1,700,000

• Thank you FDOT D-1

• WE LOVE YOU!!
In 2012, TOPS staff, learning from the original installation, personally worked with D-1 and their system developer, to further upgrade the entire system. The aim of this phase was to have full communications with all controllers. The three key elements of this upgrade included:

- Installing new Central Software;
- Upgrading to new ASC-III 2070 Central Processing Units (CPU); and
- Upgrading the video wall and associated software.
Lakeland’s TMC - Adult.....

• Upgrading the Central Software and the ASC-III CPU took *five days to complete by TOPS staff along with the City’s contractor*. The video wall and software upgrade (from three to 10 screens and three workstations) took four weeks to complete.

• If all this upgrade wasn’t enough, in the summer of 2017 TOPS staff along with the City’s contractor, upgraded the network servers, with four workstations, 14 screens, and installed the latest Central Software.

• Total upgrade cost including 5-year maintenance agreement about $95,000.
The results today....

• We now have 174 traffic control signals that are 100% inter-connected by redundant-based (ring typology) fiber, with full real-time actual controller displays at the TMC.

• The details........
City of Lakeland vital signs:

- 174 traffic signals;
- 69 cameras;
- 143 Video Detectors;
- 349 miles fiber;
- 100% interconnected traffic signals;
- 129 Opticom Preemption Devices;
- 8 Communication Hub Sites;
- 12 – 55” Video monitors; and
- MOST IMPORTANTLY:
  - A GREAT Ops. TEAM:
    - Rick Grube;
    - Richard Berendsen; and
    - Jason McMillan.
  - A SUPERB Maintenance TEAM:
    - Darryl Goolsby;
    - Colin Knowles;
    - Zack Williams;
    - Mark Sokolowski
    - Michael Whigham, Jr.; and
    - West Anderson
Whew, I guess Mom was right – it looked a lot easier in the box!

_Courtesy Promotes Safety:_

*Please give pedestrians and bicyclists a BRAKE!*

Angelo Rao, PE  
Manager, Traffic Operations & Parking Services  
City of Lakeland, Public Works  
834 East Rose Street. Lakeland, FL 33801  
863-834-3492  
Angelo.rao@lakelandgov.net