City of Minneapolis
Traffic and Parking Services

Traffic Management Center Upgrade Project
June 19, 2012

Traffic Management Center Upgrade Project

- The Traffic Management Center Upgrade project includes the following:
  - Replacement of the existing traffic signal central computer system
  - Upgrade existing communications to the traffic signals
  - Renovation of the Traffic Operations Center (TOC)
  - Replacement of 141 obsolete cabinets and controllers
  - Retime all of the signals in the City
  - Hiring for three new positions

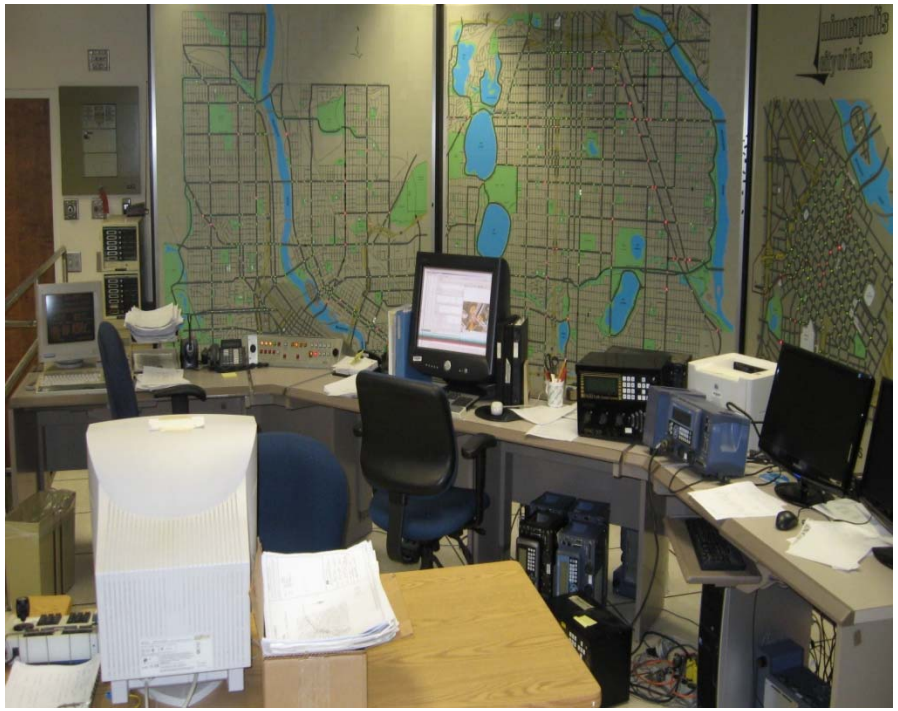
- Federally funded through the Congestion Mitigation Air Quality (CMAQ) Program
  - 80% federal funds, 20% local (County State Aid, Municipal State Aid, NDB)
  - Total funding for all of the projects = $16,239,000 ($12,991,200 is federal and $3,247,800 is matching.

Traffic Signal Central Computer and Communications

- The existing central computer system was originally installed in 1974. Upgrades to the system has been done since then
- The existing system operates on a methodology that is no longer used or required with the new traffic signal controllers
- The existing system is at the end of its useful life
- The existing communication between central and each traffic signal is limited in capacity and requires the use of proprietary equipment
- The new central computer system will be more flexible
- The new communications will be IP based
- The new central computer system hardware was recently installed in the TOC, not yet operational
- The upgraded communications will be installed over the next year and half.
- The new central system should be completely operational by the end of 2013.

Traffic Signal Central Computer and Communications

Current TOC



New TOC

Renovation of the existing Traffic Operations Center

- The TOC is being renovated as part of the central computer system replacement/communications upgrade project
- A new video wall, workstations, servers, and other equipment is being installed
- The TOC renovation should be completed by the end of October 2012.

Replacement of 141 Traffic Signal Cabinets and Controllers

- There are 141 Electro-Mechanical (EF-20) controllers left in the City. They are a 1940s technology (parts are scarce)
- Preventive maintenance required
- No conflicting movement monitoring or priority vehicle capabilities
- Additional equipment would be needed to make the EF-20 work with the new central computer system
- This project should be completed by the end of 2013.

Replacement of 141 Traffic Signal Cabinets and Controllers

EF-20 Electro-Mechanical

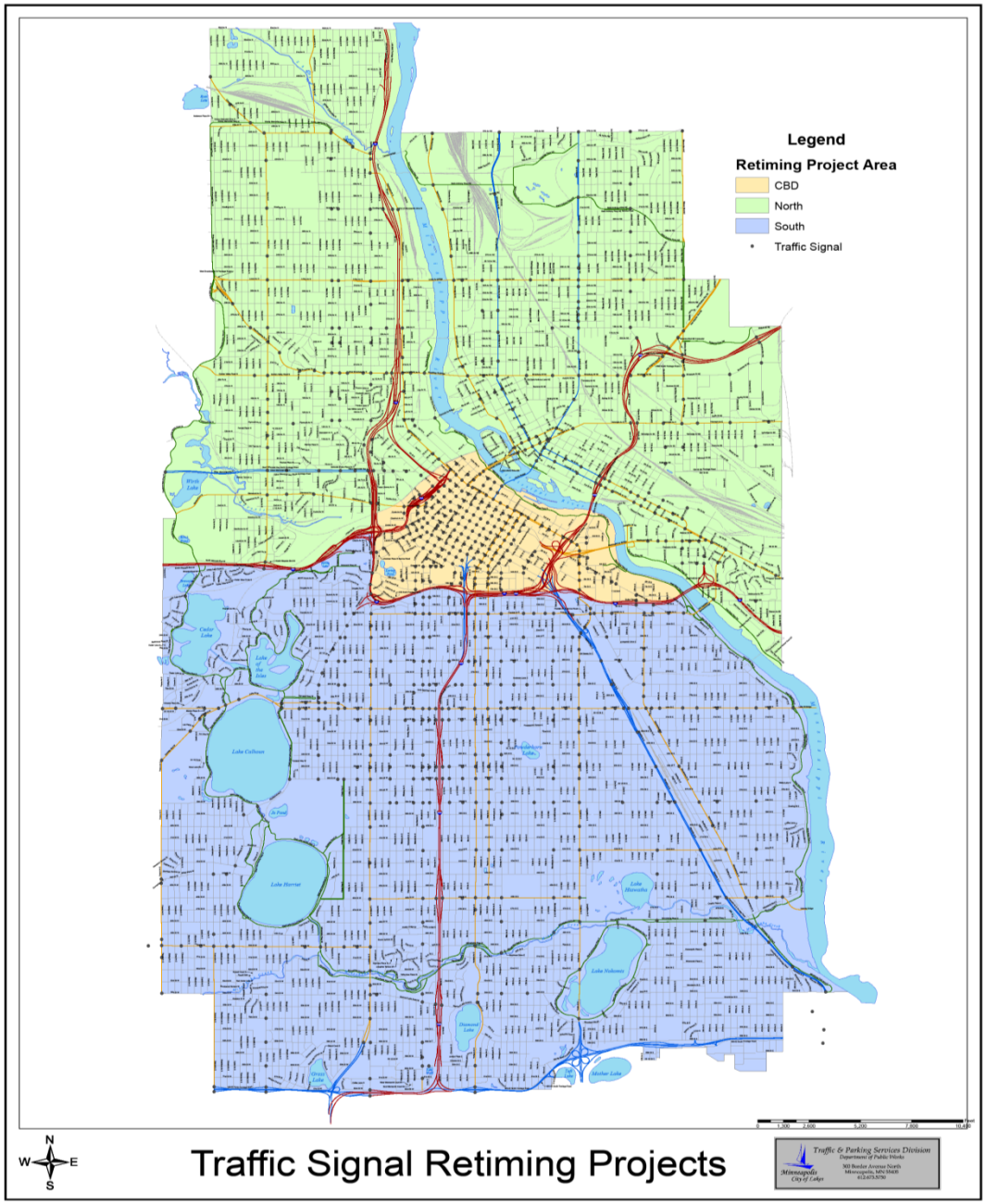
New Cabinet and Controller

Traffic Signal Retiming Projects

- Retime all of the traffic signals in the City over the next 3 years
  - Three project areas - Central Business District, South and North/Northeast/Southeast
- Project Goals included:
  - Minimize delay and congestion for all modes of transportation
  - Reduce fuel consumption and vehicle emissions
  - Identify operational improvements
- Each traffic signal retiming project involve the following tasks:
  - Collect traffic turning movement and roadway volume counts, including bikes and pedestrians.
  - Collect transit data (bus stop locations, avg. ridership, bus volumes, etc)
  - Conduct travel time runs of several corridors (before and after)
  - Field observations and collection of existing geometrics of intersections
  - Build and evaluate a traffic model of existing conditions and compare to field observations
  - Determine new signal timing parameters and create new plans for each peak period
  - Build a traffic model with new timing plans and compare to the model of existing conditions
  - Implement new timing plans, field verify and adjust as needed

Project Timeline

- Central Business District Area
  - Start – March 2011
  - End – July 2013
- South Area
  - Start – June 2011
  - End – October 2013
- North Area
  - Start – October 2012
  - End – June 2014



Three New Staff Positions

- We are receiving federal funding for three new staff positions

- The new staff will help with the set up of the new central computer system, help maintain the new communication network, and be a resource in installing the new traffic signal timing plans

- The federal funding should cover about three years worth of pay for the three new staff members. It is Traffic and Parking Service's goal to retain these three staff members, if budget allows.

Questions?