



TH 169, TH 10, and TH 47 SIGNAL OPTIMIZATION

Anoka, Brooklyn Park, Champlin, and Ramsey, MN

CLIENT:

Minnesota Department of Transportation

REFERENCE:

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SERVICES PROVIDED:

- Data Collection
- Existing Conditions Analysis
- Corridor Simulation Modeling
- Optimized Signal Timing Development
- Timing Implementation
- Field Fine-tuning

CONSTRUCTION

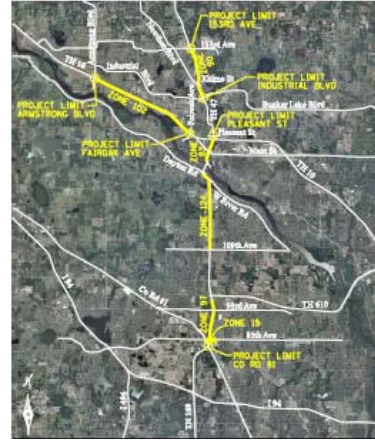
COST:

N/A

Project Description:

The Trunk Highway (TH) 169, TH 10 and TH 47 Signal Optimization project included four distinct and challenging corridor segments within the northwest Twin Cities Metro area. The four corridor segments included:

- TH 169 between County Road (CR) 81 and the TH 610 South Ramp; and 85th Avenue between CR 81 and Xylon Avenue (referred to as the “Devil’s Triangle”).
- TH 169 between 109th Avenue and Pleasant Street. (Ferry Street Mississippi River Bridge crossing)
- TH 10 between Fair oak Avenue and Armstrong Boulevard.
- TH 47 between Industrial Boulevard and 153rd Avenue.



Roles and Responsibilities:

Each of the corridors is characterized by significant volume demand and congestion during peak periods. The project challenge was to identify new and unique operation strategies, develop optimized timing plans and implement (field fine tune) to maximize flow, relieve congestion (or reduce duration) and/or to better manage the intersection queuing. A few of the key strategies included:



- Re-configuring interconnect zones, using inter-zone coordination techniques.
- Implementing cross-coordination
- Employing unique cycle length patterns (including half-cycles and third cycles) within the same system to funnel and maximize the green band efficiency through critical intersections.
- Utilizing split extensions, twice per cycle left turns, and split maximum recalls to accommodate large volume demands and/or to meter traffic flow at key locations.

End Result:

The timing plans were implemented and fine-tuned in June, 2007. A few highlights include:

- A significant reduction in congestion across the Ferry Street River Bridge. (Travel times were cut nearly in half – a savings greater than 7 minutes)
- Improved travel times (both directions) on all corridors; including TH 10, 85th Avenue, the “Devils Triangle”, and TH 47 during both peak periods.
- A benefit/cost ratio estimated at **70:1**



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