



2014 Executive Committee

Mike Anderson, P.E., PTOE

President
Alliant Engineering, Inc.
233 Park Avenue S, Suite 300
Minneapolis, MN 55415
manderson@alliant-inc.com

Katie Schmidt, P.E.

Vice President
Alliant Engineering, Inc.
233 Park Avenue S, Suite 300
Minneapolis, MN 55415
kschmidt@alliant-inc.com

Joe Gustafson, P.E., PTOE

Secretary
Washington County
11660 Myeron Road N
Stillwater, MN 55082
joe.gustafson@co.washington.mn.us

Mike Martinez, P.E.

Treasurer
HDR, Inc.
701 Xenia Avenue S, Suite 600
Minneapolis, MN 55416
michael.martinez@hdrinc.com

Paul Morris, P.E.

Director
SRF Consulting Group
1 Carlson Parkway N, Suite 150
Minneapolis, MN 55447
pmorris@srfconsulting.com

Mike Corbett, P.E.

Director
MnDOT
1500 W County Road B-2
Roseville, MN 55113
michael.j.corbett@state.mn.us

Ben Hao, P.E., PTOE

Director
URS
100 S Fifth Street, Suite 1500
Minneapolis, MN 55402
ben.hao@urs.com

JoNette Kuhnau, P.E., PTOE

Past President
Kimley-Horn and Associates, Inc.
2550 University Ave. W., Suite 238N
St. Paul, MN 55114
jonette.kuhnau@kimley-horn.com

INTERSECTION TRAFFIC CONTROL COMMITTEE

Meeting Minutes April 2nd, 2014

Attendees

Table with 2 columns: Name, Agency. Rows include Morgan Abbott (TKDA), Dean Chamberlain (WSB), Nik Costello (Washington Co), Allen Eisinger (Traffic Control Corp.), John Fahrendorf (WSB), Joe Gustafson (Washington Co), Paul Jung (MnDOT), Jerry Kotzenmacher (MnDOT), Tyler Krage (Alliant Engineering), Jon Krieg (Hennepin County), Guillermo Madrigal (Kimley-Horn), Gus Perron (WSB), Roger Plum (SEH), Scott Poska (SRF), Jan Rybar (Dakota Co), Kevin Schwartz (MnDOT), Molly Stewart (Bolton and Menk), Mark Wagner (SRF).

Meeting Location: MnDOT Water's Edge, Room 176

Meeting Topic: Adaptive Signal Timing

Meeting Presenters: Justin Effinger (WisDOT Southeast Region) and Jason Matson (HNTB)

I. Adaptive Signal Timing in Milwaukee

- See attached slides
Additional notes from presentation:

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- Compatibility with different municipalities' technology was a key concern – InSync system is compatible with the existing systems
- Bluetooth units used for real-time travel time data
- Before and after data collection in Spring 2013
- Signal systems needed to be ready to go before the Zoo Interchange project
- InSync system order depends on the cabinet type
- InSync system needs Ethernet cable and power cable for operation
- No utility relocations were performed due to the installation of the adaptive signal system
- Weather conditions/temperature are concerns for installation (cannot be too cold)
- Installation of repeaters is necessary when cable length is greater than 100 meters or if cameras are not working correctly
- Good two-way progression was needed in this corridor
- The adaptive system was able to shrink the time period experiencing over-saturated conditions
- The cycle times are dynamic but ended up being close to what they were before the system was installed

## II. Question and Answer session

- What effort was put into retiming the signals before looking into adaptive signal timing?
  - Reconstruction project allowed the opportunity for this project
  - Corridor later modeled in Synchro to check operations in the corridor
- How are the maintenance costs handled?
  - Funding through the Zoo Interchange project worked out through the project development process
  - 2 year maintenance and warranty period
  - WisDOT taking over maintenance after warranty period expires (training their workers)
- Was there fine-tuning done through Synchro?
  - Yes, fine-tuning done through Synchro

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- Are the Synchro files used for the analysis available?
  - Yes, upon request
  - Report also available with raw data and analysis
- Was Synchro analysis done internally (at WisDOT)?
  - Yes
- What is the cost per signal for this system?
  - About \$25,000 per signal not including repeaters, controller upgrades, or cable
  - Total cost was about \$230,000 for test segment (6 signals) not including contractor installation costs
- Do you need to install video detection, or could you just install loop detectors?
  - A combination of both was used for this project, but video detection was installed at all 6 intersections with this project.
  - Cameras occasionally caused problems due to being covered with snow
  - “Fusion” system (combo of video + loops) is about \$30,000 per signal
- Were there any corridor cross-coordination problems?
  - There were a few issues due to less adaptability on the crossing corridors
- Are you concerned about operator training? Is maintenance of the system too complicated for the average technician?
  - Back-up timing plans were developed in case of issues
  - Development of a WisDOT training class for technicians and electricians
  - It's rare for technicians to have to change timing in the cabinet; most can be done in the office
- How were the signals coordinated (fiber, hardwire interconnect)?
  - Fiber and radio were used on this segment
  - System also supports hardwire interconnect as well
- Is it possible to put plans in place for skipping phases or other special signal timing?
  - Skipping phases on this project was mostly for when no vehicles were present on the side streets

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- The system can be “locked” into a signal plan or let run free
- How where the before and after travel times collected through the corridor?
  - Before: GPS
  - After: Bluetooth
- Would you roll this out statewide?
  - Benefit/cost ratio goes down in rural areas

**III. Round Robin**

- Scott P.
  - U of M roundabout – peer review or preliminary design requested
  - Upcoming Flashing Yellow Arrow topic: Gary Davis at U of M presenting on latest research; Kevin Schwartz and Nicole Flint of MnDOT presenting latest processes and methodologies of FYA installation and operations; policy for installation of FYA at retrofits; design particulars for FYA (signs, detectors ,etc)
  - Do any other agencies have a different process to share for FYA topic? (None noted)
- John K. – Bloomington developing central system program for signals – any other cities running a central system?
- Kevin S. – “U-Turn yield to right turn” sign being used (other than at MnDOT)? (No other uses noted)
- Nik C. – Left-turn phasing by time of day allowed with adaptive signal timing system?