

Transportation Operations & Safety Forum
Thursday, October 27, 2016, 10:00AM
SPC Conference Center, 4th Floor
Chatham II, Pittsburgh, PA

Attendees

Cesar Baquerizo, Rhythm Engr.
Greg Barlow, CMU
Lucinda Beattie, PDP
Clint Beck, FHWA
Ryan Brown, Signal Service Inc.
Frank Cippel, PennDOT D-11
Domenic D'Andrea, SPC
Cliff Eich, Trans Assoc.
Courtney Ehrlichman, CMU
Rich Feder, Pitt/CMU
Dan Fritz, WRA
Dustin Hinds, Trafficware
Chuck Imbrogno, SPC
Joel MacKay, Butler Co.
Mark Magalotti, Pitt
Lynn Manion, ACTA

Adam Marshall, PennDOT D-10
Duane McKee, Cranberry Twp.
Ann Ogoreuc, Allegheny County
Darryl Phillips, PB
Mavis Rainey, OTMA
Justin Seabaugh, Rhythm Engr.
Doug Smith, SPC
Joshua Spano, SPC
Jonathan Spencer, SPC
Doug Tomlinson, PennDOT
Mario Toscano, Drive Engr.
Dave Tomaswick, PennDOT D-10
Dave Wolfe, Drive Engr.
David Wohlwill, Port Authority
Mike Youno, Trans Assoc.
Malie Yoon, Pitt

Meeting Summary

Domenic D'Andrea welcomed the attendees and initiated a round of introductions.

Funding Opportunity: USDOT's Advanced Transportation and Congestion Management Technologies Deployment Initiative (ATCMTD)

David Harris, ATCMTD Program Manager, FHWA

- David Harris began by discussing the origins of the ATCMTD program and the FAST Act. The ATCMTD program funding is \$60 million for each of the fiscal years from 2016-2020. Mr. Harris explained the use of funds and eligible entities for the program. The Notice of Funding Opportunity (NOFO) for 2016 was distributed. A discussion of the FY 2016 Project Awards ensued. Eight projects were awarded including the SmartPGH proposal by the City of Pgh. Mr. Harris summarized each of the award recipients. He indicated that we should keep in mind that the specific program goals may change year to year. The Notice of Funding Opportunity for 2017 is expected to be released in early 2017.

SR 22 Adaptive Traffic Signal System Project - After Study

Justin Seabaugh, Project Manager, Rhythm Engineering

- Justin Seabaugh gave an overview of the project that included 18 intersections along 8.5 miles of State Route 22 in Murrysville and Monroeville, PA. The goal of this project was to reduce end to end travel time and stops.
- The project used two different data collections methods including GPS Probe Data and InSync Delay Data. Mr. Seabaugh went on to explain the data collection results.

- According to the InSync Delay Data, the corridor is experiencing annual benefits of 66,302 hours of reduced delay, 210,470 gallons of reduced fuel consumption, and an economic benefit of \$2,078,490.
- Emails from the public, township officials, PennDOT officials and comments on articles were mostly positive regarding the project.
- A lengthy discussion ensued regarding side street wait time, pedestrians, training, challenges, maintenance, and warranty. Some expressed concern on the applicability of adaptive systems like these in an urban environment that has significant pedestrian and bicycle activity.

Safety Benefits of Adaptive Traffic Signal Systems

Mark Magalotti, P.E., Co-Director, CSTI, University of Pittsburgh

- Dr. Magalotti gave a brief background on adaptive signal systems. The hypothesis of the study was "Adaptive traffic signals have safety benefits that reduce the number of stops and travel time leading to less aggressive driving thus reducing road crashes and saving human lives".
- As part of this research, a literature review was conducted that included examinations of engineering reports on safety benefits from Rhythm Engineering, the Illinois Department of Transportation, and University of Virginia.
- There were two types of approaches: field study of before and after deployment and Empirical Bayes Method to evaluate before and after crash data. The field study took place on the Baum Boulevard /Centre Avenue corridors in the Shadyside and East Liberty neighborhoods of the City.
- The results of the field study concluded that there was a considerable decrease in the number of stops, a decrease in travel time, and an increase in average speeds.
- The Empirical Bayes Safety evaluation is a rigorous and reliable method to estimate CMF's. Three locations were used to test: East Liberty intersections, Montgomery County intersections, and Upper Marion intersections.
- Dr. Magalotti concluded that Adaptive traffic signals do have safety benefits, A CMF lower than 1, indicates a reduction in crashes, both total and fatal & injury crashes are reduced and both Surtrac and InSync systems reduce crashes. The reduced stops and reduced travel times lead to reduced aggressive driving.
- A discussion of pedestrian safety along Baum/Center took place. Some suggested that there is still work to do with regard to improving the pedestrian experience along Baum/Centre.

New Adaptive Traffic Signal System

Ryan Brown, President, Signal Service, Inc.

Dustin Hinds - SR Business Development Manager, Trafficware

- Mr. Hinds began the presentation by giving a company overview. Trafficware has been deployed all across the United States and in some of the largest cities. The company produces the predominant signal coordination software (Synchro) utilized across the country. The SynchroGreen System was designed with traffic engineers in mind (in terms of implementation ability).
- The basics of the SynchroGreen System includes:
 - Real-time adaptive traffic control system
 - Adjusts signal timing based on current traffic conditions
 - Cycle length, Splits and Off-sets optimized each iteration
 - Adjusts due to unpredictable traffic surges often caused by Schools, Event Centers, Retail & Accidents
 - Utilizes National Standards: NTCIP based interface & NEMA signal phasing

- SynchroGreen is a software based system that does not require additional hardware. The system works with any Ethernet based technology and is compatible with many different controllers.
- A discussion on the SynchroGreen System took place following the presentation.

Regional Cashless Tolling Planning Study

Dom D'Andrea - SPC

- Dom D'Andrea presented the planning study that AECOM recently completed for SPC on the portion of the mainline (I-76) turnpike within the region.
- Cashless Tolling is a growing trend in the United States with more than 35 toll facilities across the country having adopted cashless tolling systems. Cashless tolling involves constructing overhead gantries that would either read an E-Z pass transponder, or photograph a license plate. Completed cashless tolling projects have resulted in benefits such as increased safety, improved mobility, improved customer convenience, reduced emissions, and improved operational efficiencies.
- The purpose of this study is twofold. First the study is to assist the Turnpike Commission, PennDOT and other regional stakeholders in determining what the potential impacts of Cashless Tolling (and subsequent removal of the toll booths) are within the SPC region and to make recommendations for mitigating those potential impacts at existing interchanges: Warrendale, Butler Valley (Route 8), Allegheny Valley (Freeport Road), Pittsburgh (Monroeville/SR22), Irwin (SR 30), New Stanton (I-70), and Donegal (SR 31). The second purpose of this study is to identify locations that currently do not have direct access to mainline I-76, where, it may be desirable at some point in the future to provide a full or partial access cashless tolling interchange. New access locations were evaluated based on a set of qualitative factors that assess feasibility, improved operations, costs, and community impact.
- Mr. D'Andrea summarized the data collection and VISSIM simulation/modeling analysis that was conducted for the existing interchange locations including traffic volumes, EZ-Pass usage, queuing, travel time and LOS.
- The results indicate that travel times improved for Turnpike traffic from 8 to 34 seconds, on average. The impacts of cashless tolling on downstream ramps and roadways are negligible mainly because of the already high market penetration of EZ-Pass. The study does present recommendations that mitigate existing capacity issues that exist today at some of the interchanges.
- Next, Mr. D'Andrea discussed the potential new access locations including SR 910, SR 28, SR 130, and SR 981. Conceptual design layouts and costs were presented.

Other Activities

- Lawrence County SR 18 Corridor Operations Planning Study (COPS) is scheduled for the week of December 12, 2016.
- SPC coordinated with PennDOT on locations for upcoming Road Safety Audits. Planned for Spring, 2017:
 - D-10 Franklin Hill Rd/Bus 422, Kittanning Area
 - D-11 Rodi Road, Penn Hills
 - D-12 SR 119 in Youngwood Borough
- Regional Traffic Signal Program-3rd cycle: Preliminary Engineering and Final Design are underway
- Josh Spano summarized the TIM activities for the remaining part of 2016.