Thursday September 26, 2013
10:30AM – 11:30 AM
Session A: Measuring ITS Performance

1. **Multi-Modal Performance Assessment of Transportation Improvement Projects**

Presenter(s):

Shayan Khoshmagham

University of Arizona

Dr. Larry Head

University of Arizona

Faisal Saleem

Maricopa County Dept. of Transportation

The purpose of this paper is to define a methodology to evaluate the performance of a multi-modal traffic signal system. There have been performance assessment studies for each mode, but this methodology considers an integrated approach to multi-modal performance assessment. An intersection in the Maricopa County Department of Transportation's SMARTDrive test bed is analyzed using the VISSIM micro-simulation model to study the effects of different designs and signal timing strategies on several performance measures for both vehicles and pedestrians. A tool, called a Multi-Modal Performance Dashboard, is developed to visualize the relationship between various performance measures and multiple modes. Dashboards can be used to characterize the performance of an existing system, and also to compare before and after studies when a new design is implemented. Radar diagrams are the basic element of the Multi-Modal Performance Dashboard tool and are constructed for individual performance measures, e.g. travel time, delay, person throughput, and stops for passenger vehicles, transit, pedestrians, and trucks, and for each movement at an intersection. Based on the results of this study, choosing an appropriate control strategy can impact the different modes (including pedestrians) in different ways. The more modes involved in the system, the more challenging it is to determine the proper control strategy. Using this tool, alongside statistical models, makes it easier for decision makers to understand, visualize, and analyze data.

2. **Online Arterial Performance Measurement: Challenges, Methodology and Implementation**

Presenter(s):

Dr. Yao-Jan Wu

University of Arizona

With increasing data collection for Intelligent Transportation System (ITS) for arterial networks, archiving, managing and analyzing complex network traffic data is becoming challenging. Challenges include inconsistent data connections, data quality control, query performance, traffic prediction, and computational limitations. In this presentation, the these challenges are discussed. In order to deal with these challenges, a web-based Real-time Analysis and Decision-making for ARterial Network (RADAR Net) system is also presented. This system adopts a relational database that consists of link, intersection and detector entities. The relational data demonstrates its query performance and scalability. The system contains four layers: offline server, online server (middleware), online server (Java Servlet) and online client. This four-layer design successfully distributes the computational burden of the system. In order to monitor the arterial performance, link speeds are calculated directly from the loop detector data retrieved from the City of Bellevue, WA. The system can dynamically predict and smooth real-time loop spot speeds while maintaining high system performance. The link speeds of the entire network are calculated and updated in real-time. Based on the system architecture, many

application modules, e.g. capacity analysis and dynamic routing, were implemented and proved the system feasible to perform real-time analysis and assist decision making.

3. Development of a Performance Monitoring Data Hub

Presenter(s):

Dr. Xuesong Zhou

Arizona State University

This talk aims to address a number of technical challenges in the complementary use of multiple computer simulation models and real-world traffic sensor data to comprehensively assess transportation deficiencies and ITS improvement strategies at the link, corridor, subarea, and regional network levels. A concept for an open-source data hub was developed to better enable the exchange of model information across multiple resolutions. All modeling and field data are fed and stored using a unified data schema. Tools within the data hub aid users in modifying modeling components (e.g. network, signal timing, or traffic demand) to match an objective, such as calibrating to field data. Visualization tools are built into the data hub's core visualization program, NEXTA, along with powerful links to common web-based tools such as Google Earth and Google Fusion Tables. The data hub reduces barriers to interfacing models across multiple resolutions and software platforms, which ultimately saves time and cost.

A case study in Portland, Oregon is presented to show a rapid comparison between Traffic Message Chanel (TMC) based Inrix speed data and the fine-grained link-based travel time from typical regional and assignment models. A test case based on Tucson, Arizona is used to demonstrate data conversion workflow from a regional travel demand model, exporting to DTA for mesoscopic analysis, updating traffic origin-destination demand using field data, exporting to a signal timing optimization tool, and lastly exporting to a microscopic simulation tool for detailed operations analysis.

Session B: Freeway and Arterial ITS

1. I-10 West Closure Diversion Strategies for Arterial Streets

Presenter(s):

Dave Bruggeman

Lee Engineering

Leo Luo

Maricopa Association of Governments

Development of diversion strategies onto arterial streets during unexpected freeway closure. Abstract (400 words or less): Traffic operations on I-10 are frequently disrupted by traffic incidents of varying severity. The heaviest disruptions are caused by events requiring full freeway closures that cause heavy traffic congestion on and off the freeway for several hours, often leading to secondary crashes and off-freeway congestion. As part of a broader effort to develop an Integrated Corridor Management System (ICMS), this project was intended to be the first step to initiate the development of a response plan to organize diversion traffic impacts and minimize the overall traffic delay in the event of a full closure of the I-10 freeway at any point between 35th Avenue and 83rd Avenue, in either the east or westbound directions. This MAG sponsored project initiated the development of a systematic traffic management plan, in coordination with the Arizona Department of Transportation, Arizona Department of Public Safety, Maricopa County Department of Transportation and the City of Phoenix, that would form the basis for a coordinated response to any full freeway closure that occurs within this corridor on a 24/7 basis. This

program was carried out in two parts, working closely with MAG and the affected agencies. While one team addressed the technical aspects of diverting and managing traffic, the other team identified institutional issues that may need to be addressed, draft necessary IGAs, identify other infrastructure and system upgrade needs, and a staffing strategy to ensure 24/7 readiness to ensure effective deployment for a guided diversion. This presentation sets forth the process and development of the technical aspects of rerouting diverted traffic onto the non-freeway street system, traffic signal operations, and physical elements necessary to support the diversion strategy.

2. Smartrek - An Active Traffic and Demand Management Technology through Real-Time Traffic Prediction and Incentive

Presenter(s):

Dr. Yi-Chang Chiu

University of Arizona

Applying data and technology to improving the safety and efficiency of transportation system has been the overarching goal of Intelligent Transportation Systems (ITS). Over the past decades ITS developments have achieved a great success in traveler information provisioning, fast incident response and improved agency coordination. While ITS technologies and applications continue to advance, over the last 3 years, we have been researching and developing a new active traffic and demand management (ATDM) concept and technology called Smartrek that is aimed at managing demand in order to avoid excessively unbalanced loading of trips to the transportation network. Smartrek reduces everybody's travel times and roadway congestion by 'incentivizing' some drivers to take less congested routes and leave at a less congested time. Smartrek accurately predicts travel time for different future departure times. Through a smart phone app, Smartrek also offers app users incentives in terms of points for each departure and route option. The user reserves an option with the associated trekpoints reserved for him/her. Ten minutes before the scheduled departure, Smartrek sends the user a reminder and if the user departs within the specified time window and take the designated route, the reserved trekpoints will be deposited into the user's account. These points can be redeemed for 'dollars off' coupons from vendors, free parking voucher from cities, or for gas card from corporate sponsors like Chevron. Smartrek coordinates drivers. Existing solutions like Google or other navigation apps such as WAZE delivers only current traffic information and leave drivers to make their own routing decisions. As a result an excessive amount of drivers may decide to take the same congestion free rotes after viewing the map and later this route becomes congested. This is called the "herd effect". Through reservation Smartrek predicts which roadway will become congested and dynamically increase incentives for other less congested departure time and route. As a result Smartrek could better distribute the load over the entire transportation network

3. A Decision Framework for Multi-Modal Traffic Signal Control

Presenter(s):

Mehdi Zamanipour

University of Arizona

This paper presents a unified decision framework for multi-modal traffic signal control that can help the responsible operating agency in representing and quantifying its desire from each equipped section of the arterial to be in favor of specific traffic mode. For example, one

section might be selected to be pedestrian and transit friendly and another section might be selected to be truck friendly. The decision framework establishes a priority policy for each equipped section of traffic signals that determines the relative importance of different modes of travel. This priority policy would impact how the signal timing is adapted to accommodate the multiple active requests for priority. This framework is based on a mathematical optimization model where each modal traveler can request service using multiple priority requests. It simultaneously considers the needs of different modal users using wireless communications, as well as traditional detection methods. The proposed approach is both practical for the decision-maker and efficient, as it leads directly to a Pareto-optimal solution. It is shown that there are critical modes weights that force requests to be assigned to different cycles and as a result, different Pareto frontier point can be reachable. The obtained modes weights and Pareto frontier points help decision makers to set a policy that favors one mode over another. In addition to modal users, system-operating principles such as coordination are included as priority requests within the decision framework. The system has been developed and tested using both microscopic traffic simulation and in a live network of six intersections in Anthem, Arizona using emerging technology developments in Connected Vehicle systems

Session C: Innovative Funding Sources

1. New Data Sources to Support MAP-21 Reporting Requirements

Presenter(s):

David Newman

Digital Traffic Systems

Upgrading and improving continuous count stations to provide data to support ITS, traffic monitoring, planning functions, as well as meet new federal MAP-21 requirements.

Abstract (400 words or less): DOTs face a growing need for data; particularly increasing demand for real-time data for: • System Operations performance measures • System Monitoring • Travel Advisory Services • Incident Detection/ Emergency Response MAP-21 calls for advancing the capabilities of States for safety data collection, integration, and analysis to support program planning and performance management and continues to support data improvement activities. FHWA sees this as both a system performance- and outcome-based program. High quality data at a granular level will be required to meet the federal requirements. The Final Rule will be set by Q2 2015. DOTs will need to: • Define system performance and outcome goals • Develop measures • Identify performance and outcome targets • Develop implementation plans • Report on results Information/data leads to investment decisions leads to achievement of agency goals QUESTION: How can states meet the increasing demand for high quality data to meet both DOT and Federal needs/requirements? ANSWER: By leveraging existing assets to serve multiple purposes within the agency. Most DOTs have an opportunity to develop new traffic information from traditionally non-ITS sources – upgrading the network of Continuous Count Stations deployed by each state to meet federal highway performance reporting requirements to meet the data needs of both planning and operations groups within the agency (at a minimum). Upgrading CCS infrastructure to support both planning and operations use produces numerous benefits for the DOT: • Dual Use of Existing Infrastructure • Significant Cost Savings • Minimal Field Upgrade required • Minor STC

Integration costs relative to existing investment • Leverages existing CCS and STC maintenance capability • Reliable traffic data from the data experts • Ensures high availability of accurate data feeds • Software support mechanism already in place • Data Feed is tailored to each user's needs • Compliments existing ITS sensor network • Scalable to support emerging requirements • Section 1201 State-wide data support • MAP-21 data needs • Fosters interdepartmental cooperation • New site selections can often address both users requirements (e.g. addition of hurricane evacuation sites, filling data "holes" One DOT has accomplished this integration. This presentation will outline the process, players, barriers, solution and demonstrated benefits of this approach.

2. Planning & Financing the Regional ITS Infrastructure – MAG Experience

Presenter(s):

Sarath Joshua

Maricopa Association of Governments

Thursday September 26, 2013
1:30PM – 2:30 PM
Session D: Travel Time & ITS Communications

1. Arterial Travel Time Display Coming of Age

Presenter(s):

Faisal Saleem

Maricopa County Dept. of Transportation

Tomas Guerra

OZ Engineering

In recent years, there has been a renewed interest in collecting arterial traffic information in support of transportation management and traveler information. Arterial traffic information, primarily in the form of travel time, is available from several vendors through paid subscriptions. Jurisdictions around the country are increasingly interested in deploying sensors for collecting the arterial travel time data. Notably, both subscription and agency owned Bluetooth-based sensors have gained tractions in Arizona.

Arterial travel time is commonly presented on the traveler information web site and increasingly on the Dynamic Message Signs (DMS) deployed along the arterial corridors. This presentation shares the experience of a pilot deployment of arterial DMS travel time display along the Bell Road Corridor that runs through multiple jurisdictions in the greater Phoenix area. The highlight of this pilot deployment is the use of third-party travel time data source and the seamless supplement to the functions of existing DMS control software. This presentation will also share the findings and thoughts on the limitations of the application of disseminating arterial travel time information on a DMS.

2. Ramp Meter Evaluation Study

Presenter(s):

Reza Karimvand

Arizona Department of Transportation

Sarah Simpson

United Civil Group

3. ITS Communications in Mesa

Presenter(s):

Arthur Dock

City of Mesa

In 2010, City of Mesa DOT successfully eliminated the expensive leased lines that are commonly used by transportation agencies for operating the ITS devices. Nowadays, Mesa employs a combination of fiber and long and short-range wireless radios to provide effective communications for more than 400 traffic signals and other devices in over 200 miles of

arterial street network. This presentation will describe Mesa DOT's strategies and purposed efforts that led to an effective, flexible, and self-sustained ITS communications infrastructure.

Session E: Traffic Management Centers & Improving Operations

1. Integrated Corridor Management—a $50M question?

Presenter(s):

Leo Luo

Maricopa Association of Governments

Sarath Joshua

Maricopa Association of Governments

ITS planning for complex urban transportation systems require simulation models that could be relied upon to accurately mimic real world traffic behavior. Neither the traditional Travel Demand Model (TDM) nor the microscopic traffic simulation model is considered adequate for evaluating operational strategies that could have system wide impacts. One of the key challenges faced by these modeling tools is how to replicate the decision making process of every individual driver regarding which path to follow from his/her origin to destination. A realistic representation of how individuals make these decisions is critical, because the aggregation of these decisions/paths result in the time and space dependent volumes on the transportation network and the resulting time and space dependent speeds and travel times. Unless a realistic simulation model, that adequately addresses this path finding problem, is used as a tool, all large scale operations planning efforts will not generate a lot of confidence. The Maricopa Association of Governments (MAG) has identified the DynusT mesoscopic simulation model with Dynamic Traffic Assignment (DTA) as the tool of choice for ITS planning. The DTA model significantly improves the reliability, efficiency and scale of operational strategies and their evaluation by introducing reasonable human decision making process and mesoscopic simulation. A recently completed 24-hour regional DynusT model enables MAG to conduct analysis at any major arterials and any time periods within the region. Working with City of Scottsdale, DPS, ADOT, Maricopa County, Salt River Maricopa-Pima Indian Community, MAG applies DynusT to conduct Traffic Incident Management (TIM) analysis along Loop 101 corridor. The results and outcomes will be presented. Other potential applications will also be illustrated.

2. How Technology Mega-Trends are Changing Traffic Control as We Know It

Presenter(s):

Kurtis Mcbride

Miovision Technologies Inc

This talk will explore the emergence of four technology mega trends that are set to impact our daily lives in profound ways. One of the areas where these mega trends are converging is in the world of traffic signal control. The trends that will be explored are the ever increasing power per dollar of computing, the increasing availability of communications, the prevalence of mobile devices and the emergence of NTCIP traffic controllers. Traditional methods of traffic signal control involve some combination of either coordination of vehicle progression between intersections, or actuation based on the presence of a vehicle at an intersection. The convergence of the technology trends that will be discussed will make it possible for future control systems to unify these two modes of control in such a way to afford drivers and users with the best of both worlds. In particular this talk will explore: 1. Computing Trends: Discussion about the emergence of low cost, low power industrial "super computers", as well

as the increasing prevalence and capabilities of the “cloud”. Specifically the implications of real-time network simulation will be discussed. 2. Communication Trends: Low cost machine-to-machine technologies are emerging that will change many aspects of our lives. This trend coupled with a move toward open APIs that allow third party application developers to interoperate with one another will drive major changes in how we think of traffic control. 3. Mobile Device Trends: Virtually everyone now carries a mobile phone. Increasingly we are seeing traveller information applications & crowd sources trip data derived from mobile phones. Specifically, the discussion will explore the implications of integrating the driver directly into the control infrastructure. 4. Implications of the Prevalence of NTCIP Controllers: The ability to programmatically integrate with traffic controllers (i.e. through omit, force off and hold) will allow more third party participation in the traffic control domain, as well as the integration of the above trends into the existing control infrastructure. Finally, this talk will explore the implications of the above trends with respect to the need to increase the capacity of our existing road infrastructure as the world continues to urbanize, while at the same time investment constraints continue to be of concern.

3. TMC's of the future

Presenter(s):

Bruce Dressel

City of Scottsdale

Will TMC's be prepared for the future? What if the future requires greater interaction with Police and Fire Departments? Our CCTV cameras are being used by Police, Inspectors, Water Departments and others in the municipalities that were never planned for, along with the communications infrastructure. What if the automated vehicle comes to fruition? Will our networks support the needs of "Vehicle to Roadside" communications, and will our networks be sustainable? Do Traffic Engineers know how to plan for a communications network? The questions are endless and it’s important to plan for the right network today. The TMC of today are functional for today. Everyone has a working infrastructure that brings video, data and control to the field from a central point. Some have networks that run Multicast video traffic and others have Unicast traffic. A number of TMC's have phone line connections to controllers while others have deployed IP controllers. That fact is that our network will have to be IP in the future. It will be operated by Traffic Engineers, Analyst and Technicians, and maintained by Information Technology people. Is our profession ten years behind?

Session F: HAWK for Pedestrians & Bicyclists

1. Accommodating Bicyclists at HAWK

Presenter(s):

Dr. Richard Nassi

Paul Casertano

Pima Association of Governments

2. Scottsdale Double HAWK Pedestrain Crossing

Presenter(s):

Steve Ramsey

City of Scottsdale

The presentation will showcase the benefits to vehicular and pedestrian traffic of independently actuated Dual HAWK pedestrian crossing.

3. HAWK at Canal Crossings

Presenter(s):

Julian Dresang

City of Tempe

Thursday September 26, 2013
3:00PM – 4:00 PM
Session G: ITS Beyond Arizona

1. Performance-Based ITS Maintenance Contracting: Lessons Learned

Presenter(s):

Kevin Barron

Digital Traffic Systems (DTS)

DTS has developed and implemented a unique ITS maintenance approach in partnership with a large state Department of Transportation (DOT). This approach is truly a partnership between the public and private sectors to maximize the operational utility of public sector ITS field devices while empowering the private sector to innovate in the area of maintenance strategies and cost containment. Under this type of performance-based contract, the DOT receives cost surety and clearly defined performance goals. The contractor tailors the maintenance program to the DOTs specific needs and gets paid for performance, not merely effort. Specific performance criteria can include data quality, device availability, and/or maintenance response time. The contractor assumes much of the risk for ensuring the delivery of a properly maintained ITS network while the DOT gets a guaranteed maximum annual cost and therefore budget stability. The key to the success of performance-based contracting is the host of risks and benefits to which each party is willing to agree. The contractor is empowered to develop an aggressive preventive maintenance process that minimizes downtime and extends product life. The DOT allows the contractor the freedom to operate within the terms of the contract as long as the performance metrics are being met or exceeded. Certain incentives and penalties are in place to ensure compliance. Ultimately, the goal of this type of contract is to ensure consistent results for the DOT over a multi-year period; maximizing their investment in ITS devices.

2. What's Next for ITS Based On the Past

Presenter(s):

Tip Franklin

Schneider Electric

We all say that the application of ITS has been in a steady state of change since its inception. But has it really changed? Is what is happening a result of the on-rush of technology or is it just the growing pains of a system going through a normal life cycle? This presentation examines the core functionality of ITS and how it has emerged and changed over the past two-plus decades. It then extends this maturation process into the future and discusses how things will remain the same and how things will change. It uses the systems approach to detail the rationale for change and points to where we are heading. As a conclusion it talks to what contributions we will make to the travelling public (driver, rider, shipper) and how what we do contributes to the overall efficiency, economy and responsiveness of the other municipal services – the Smart City. In summary – it shows how what we've done, the lessons we've learned and the knowledge we've gained, is going to shape our future and how we will contribute even more. A blast from the past describing our future or "Its déjà vu all over again". As told by an old codger

3. Innovations in ADA Data Collection Systems

Presenter(s):

Stewart Allen

Kimley Horn & Associates

This is a discussion on the advances in technology and mobile devices that enabled our team to modernize our field data collection solution. Abstract (400 words or less): Kimley-

Horn & Associates was contracted by the Oklahoma Department of Transportation (ODOT) to do a study of state roadway sidewalk's compliance with federal ADA (Americans with Disabilities Act) guidelines. This project involved collecting a large amount of geo-located data throughout the state of Oklahoma that needed to be stored, processed, and analyzed in order to determine the level of compliance and the cost to bring sidewalks in to compliance. The software development division of Kimley-Horn was brought in to help with this task. Through the implementation of the software development cycle, and the team's use of the latest in software technology and devices, a solution was developed that included Windows 8 tablets, an advanced mapping user interface, and web architecture. The advancements made have resulted in a net positive Return on Investment due to the ease of use of the new field interface and a cloud-based collection system.

Session H: ITS Applications

1. Determination of Origin-Destination Using Bluetooth Technology

Presenter(s):

Anita Shanker

Stantec

Rick Reiff

Stantec

Use of blue tooth technology to collect and develop origin destination matrix. With the methodology, the sample size if high, thus providing more accurate matrix. In addition, this methodolgy has also proven to be a more cost effective alternative. Abstract (400 words or less): As part of a study of improvement strategies for the I-526 corridor in Charleston County, South Carolina, actual origin-destination data was needed to accurately model existing vehicle paths for use in the study VISSIM micro-simulation model. After evaluating available methods for collecting origin-destination data, the project team decided on an innovative approach using Bluetooth technology. The results of the Bluetooth data collection were very valuable in the analyses, as several additional uses for the data were utilized as the analyses moved forward Bluetooth sensors were deployed along the study corridor between interchanges to track vehicles traveling the corridor. The unique identifier for each Bluetooth device detected could be compared across the rest of the sensors to determine the number of vehicles traveling to/from various portions of the network, including the travel time between sensors. The use of this technology allowed the team to develop a much more comprehensive origin-destination matrix than would have been possible using other matching technologies, such as license-plate matching, at a significantly lower cost. The data collected was also utilized to measure existing corridor travel times, determine existing weaving movements, and planning of potential new transit routes.

2. Integration of an Agent-Based Route Choice Model with the DynusT

Presenter(s):

Yiheng Feng

University of Arizona

Dr. Larry Head

University of Arizona

Simulation based dynamic traffic assignment (DTA) models have received much attention in recently years. Compared to static traffic assignment models, DTA models consider time variations in the demand and flow behaviors in the traffic network. However, within the current DTA framework, it is difficult to model traveler's characteristics and behaviors such as the heterogeneity, information sharing, learning

process and the interactions among the travelers. Agent-based modeling and simulation (ABMS) is specifically developed to address this complexity and to support individual agent based decision making. This paper proposes a framework that integrates an agent-based route choice model with the DynusT traffic simulation. The agent-based route choice model considers learning from previous experiences (e.g. trips), heterogeneity of different travelers, incomplete network information, and communications between travelers. An interface is defined between the simulation and the route choice model that supports individual agent based information to be exchanged. Two case studies based on different sizes of networks are considered to compare the performance and computational effort of the agent-based model and original DynusT gap function vehicle-based assignment (GFV) model. Results from a small imaginary network reveal different route choice behaviors under GFV and agent-based decision making with low and high route travel time choice thresholds. Results from a real large-scaled network show the agent-based route choice has similar system performance compared to traditional DTA model and the computation time is comparable.

3. Continued Expansion of Anonymous Wireless Address Matching (AWAM)

Presenter(s):

Darryl Puckett

Texas A&M Transportation Institute

In addition to the expansion of Travel Time monitoring systems, nationwide, other uses for the data have been developed and utilized. Abstract (400 words or less): The AWAM (Anonymous Wireless Address Matching)process developed by TTI, has continued deployments for Travel Time Monitoring in Texas. Numerous other nationwide deployments have also been accomplished in permanent locations by private sector providers. Additionally, other uses for the process have been developed and utilized in several temporary locations for Origin and Destination studies. A train monitoring system has been deployed along with AWAM monitoring in a city in Southeast Texas. These developments and deployments will be discussed as will current examinations of alternate wireless possibilities.

Session I: Transit ITS

1. Real Time Bus Tracking – Valley Metro LINK Bus

Presenter(s):

Ratna Korepella

ValleyMetro

LINK is a limited stop bus service operated by Valley Metro in the communities of Chandler, Gilbert and Mesa. As the name would suggest, the service “Links” to the Valley’s current light rail transit system. While not truly Bus Rapid Transit (BRT), LINK does share many of that service type’s characteristics including purpose built fleet, near level boarding at stations, one mile station spacing, traffic signal priority, fare vending machines, and real time bus tracking information for customers. The real time bus tracking information is communicated to riders through a number of avenues including the internet, smart phones, audio announcements and dynamic message signs (DMS) located at each LINK station. The technology that makes this possible is a combination of fiber optics and cellular system that utilizes communication equipment installed on the LINK buses and at LINK stations. This system addresses a shortcoming of Valley Metro’s current VMS that, due to radio band width limitations, is incapable of providing real time tracking of non-LINK bus routes.

The presentation will describe the Bus Tracker technology, how it was implemented on Valley Metro's current LINK routes, the challenges that were overcome during that implementation.

2. Tucson Street Car

Presenter(s):

Scott Miller

HDR Inc.

3. Mesa's Alternative to NextPhase

Presenter(s):

Jay Yenerich

ValleyMetro

Arnab Gupta

Parsons Brinckerhoff

The Central Mesa Light Rail Transit (LRT) Extension project being constructed is scheduled to open for service in 2016. This new 3.1-mile LRT alignment extends the existing LRT system through Downtown Mesa, and ends to the east of Hobson. Valley Metro is analyzing the implementation of an advanced transit signal priority control for Central Mesa using their PMCM consultant Parsons Brinckerhoff. For the analysis, a micro-simulation model was developed using PTV VISSIM and Econolite ASC/3 software-in-the-loop (SIL) package. The SIL package emulated the real-world controller functionality of the Econolite ASC/3 controllers that eventually will be installed at intersections along the alignment. Timing plans were developed for each intersection for the AM and PM peak periods.