MAG ITS Committee

October 7, 2020

MARICOPA ASSOCIATION of GOVERNMENTS

2. Approval of Minutes

Action Requested:
Approve September 2, 2020, ITS Committee Meeting Minutes

3. Staff Report

3. Federal Updates Reported by FHWA

- Continuing Resolution (10/1)
- Every Day Counts Round 6 (EDC 6) Launched (9/23)
  - https://www.fhwa.dot.gov/innovation/everydaycounts/
- National Coalition on Truck Parking "2018 Working Group Activity Report" Published (9/18)
  - https://ops.fhwa.dot.gov/freight/infrastructure/truck_parking/workinggroups/index.html
- Work Zone Data Exchange (WZDx) v 3.0 Published (9/18)
  - https://www.transportation.gov/av/data/wzdx

3. Federal Updates Reported by FHWA

- USDOT Safety Band Website Updated
  - https://www.transportation.gov/content/safety-band
- Webinar Series: Impacts of Automated Vehicle (AV) Integration on Highway Infrastructure
  1. (10/09) Traffic Control Devices
     - https://icf-seeds.adobeconnect.com/av-integration-traffic-control-devices-oct-9/event/registration.html
  2. (10/16) Physical Infrastructure and Operations
     - https://icf-seeds.adobeconnect.com/av-integration-physical-infrastructure-operations-oct-16/event/registration.html
  3. (10/23) Agency Readiness
     - https://icf-seeds.adobeconnect.com/av-integration-agency-readiness-oct-23/event/registration.html

3. Federal Updates Reported by FHWA

Jennifer Elsken
Arizona Division Acting System Performance Team Leader

3. NOCoE TSMO Champion of the Year Award

Faisal Saleem
ITS Branch Manager &
MCDOT SMARTDrive
Program Manager

National Operations Center of Excellence

3. Traffic Detection Evaluation Methodology Study Update

- Develop a methodology for evaluating the performance of different traffic detection technologies
- Assistance from Cities of Mesa, Phoenix, MCDOT, Econolite, and EDI
- Draft report available for review
- UCG to present at November ITS committee meeting
- Complete by December 2020

3. FY 2020 TSOP Update

TRAFFIC SIGNAL OPTIMIZATION PROGRAM

Project ID	On-Call Assign	Lead Agency	Other Agencies	Description	Status
TS2001	KITTELSON	ADOT	Glendale Phoenix	Grand Ave from 19th Ave to Loop 101	Development of Synchro model
TS2002	AECOM	ADOT	Surprise El Mirage	Grand Ave from Loop 101 to Loop 303	Development of Synchro model
TS2003	WOOD	Avondale	MCDOT ADOT	Dysart Rd from Bethany Home Rd to Van Buren St	Development of Synchro model
TS2004	UCG	Gilbert	N/A	Greenfield Rd from Market St to Baseline Rd	Development of Synchro model
TS2005	JACOBS	Goodyear	N/A	Estrella-PebbleCreek Pkwy from MC 85 to Indian School Rd	Development of Synchro model
TS2006	LEE	Phoenix	ADOT	I-10, McDowell Road, Van Buren Street, Latham Street and Roosevelt Street	Data collection done Field review pending
TS2007	B&N	Pinal County	Queen Creek	Hunt Hwy from Empire Blvd to Copper Mine Rd	Data collection done Data analysis ongoing
TS2008	KHA	Tempe	N/A	Rural Rd, McClintock Dr from Loop 202 to US 60	Review of Synchro model
TS2009	WSP	MAG	N/A	Before-and-After Travel Time Evaluations	Kicked off

Before & After Evaluation

3. RCN Update

- Fiber redundancy
- Network equipment replacement
- RCN vs. A2A links
- Task Force for Regional Fiber Maintenance project
  - 2nd Task Force meeting:
    October 20, 2020, 9:00 a.m. – 11:00 a.m.
  - Meeting information sent out
    - Contact Ryan Gish for information

4. I-10 Broadway Curve: Project Update

I-10 Broadway Curve Update

Intelligent Transportation Systems Committee
October 7, 2020

MARICOPA ASSOCIATION of GOVERNMENTS

Presentation Overview

1. Project Benefits
2. Schedule Update
3. Contract – Closures
4. Mitigating Risk
5. TDM Strategies
6. Strategic Communication Plan

MARICOPA ASSOCIATION of GOVERNMENTS

Project Benefits

- When the project is complete, rush hour traffic will move more than 25 percent **faster** than it would without the improvements.
- The project will **improve access** to 4,637 businesses located along the corridor.
- Current weekday traffic at the Broadway Curve is nearly 300,000 vehicles a day. By 2040, the **projected growth** will be 375,000 vehicles a day.
- Construction activities will **grow local business sales** by $1.2 B and generate 1,400 new construction jobs.
- Improvements to I-10 Broadway Curve will result in 250 **new long-term jobs** for the region.

I-10 Broadway Curve: Schedule Update

December 2019
RFP Issued

February 2020 – ~~May~~ July 2020
Alternate Technical Concepts/ RFP Amendments

~~June~~ August 2020
Proposals Due

~~October~~ December 2020
Execute Agreement with Selected Developer Team

~~November~~ January 2021
Start Design

Summer 2021
Construction Start

Fall 2024
Construction End

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Current Contract Provisions for Closures

All I-10 lanes, including HOV, to remain open during the weekday

Nighttime lane closures

- 8:00pm to 4:00am weeknights (Sun, Mon, Tues, Wed, Thurs)
- 10:00pm Friday night to 7:00am Saturday morning
- 10:00pm Saturday night to 9:00am Sunday morning

Weekend lane closures

- 10:00pm Friday night to 4:00am Monday morning

- ✓ Both directions of I-10 cannot be closed at the same time
- ✓ Holidays restricted
- ✓ Special events restricted

Photo Courtesy of the Arizona Department of Transportation

I-10 Broadway Curve: Minimizing Project Risk

- Started with the Risk Assessment Workshop held last year
- "User Experience" items were ranked as the highest risk to the project
  - Direct impact on drivers
  - Public's expectations for construction
  - Tolerance for congestion

I-10 Broadway Curve: TDM Strategies

Airport Analysis

- MAG conducted an analysis to identify how vehicles travel to and from the airport.
- Ultimate goal of the analysis - inform decisions for the construction activities and how it could impact how vehicles access the airport.
- Traffic analysis occurred during early November 2019 through mid-February 2020.
- Airport traffic is heaviest on weekdays (Tuesday thru Thursday), with Mondays and Fridays slightly lower.
- Weekend volumes in the airport tend to be much lower than weekdays.

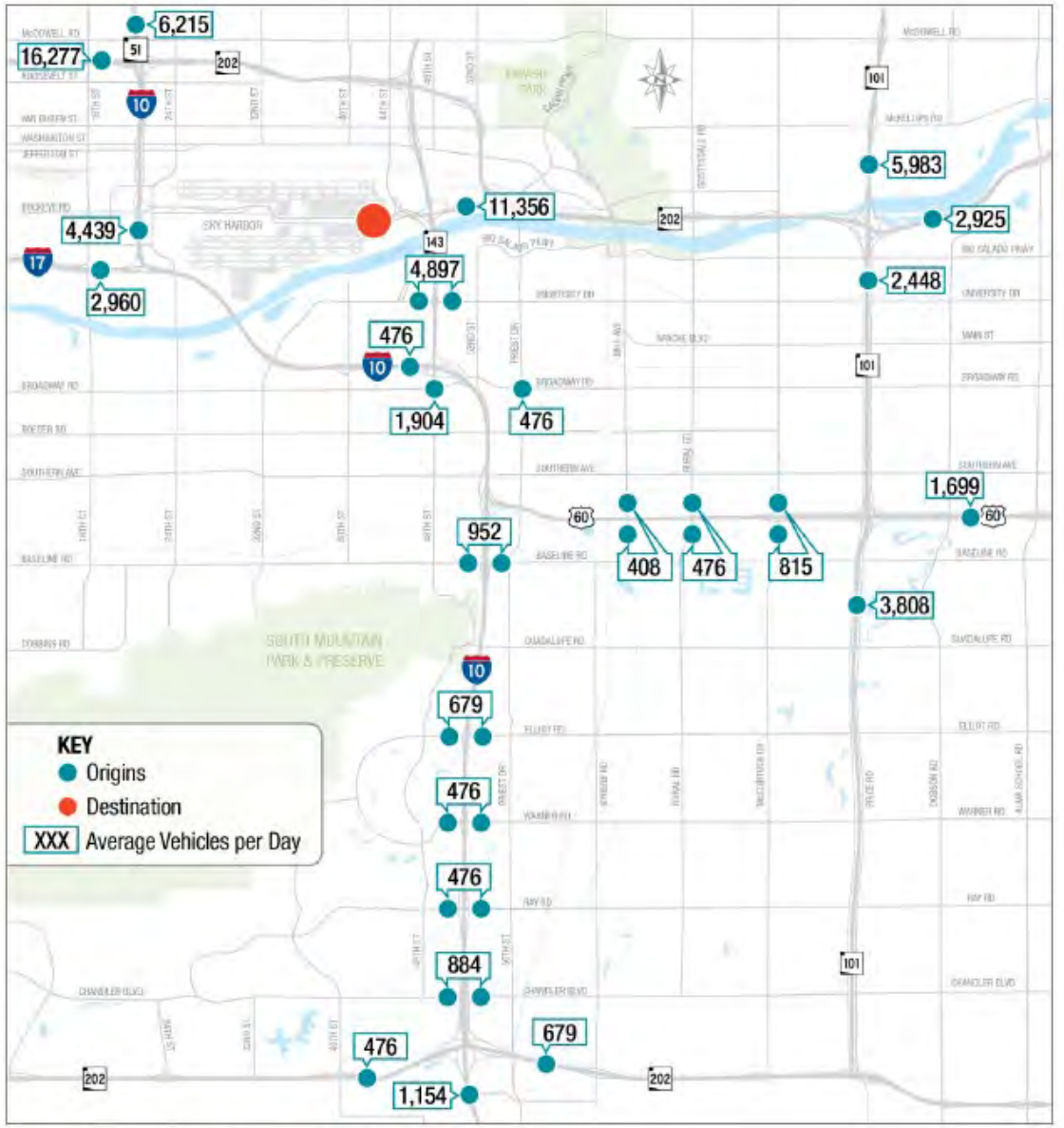


Figure 3-2: Inbound Airport Traffic on Weekdays

Arterial Traffic Operational Analysis

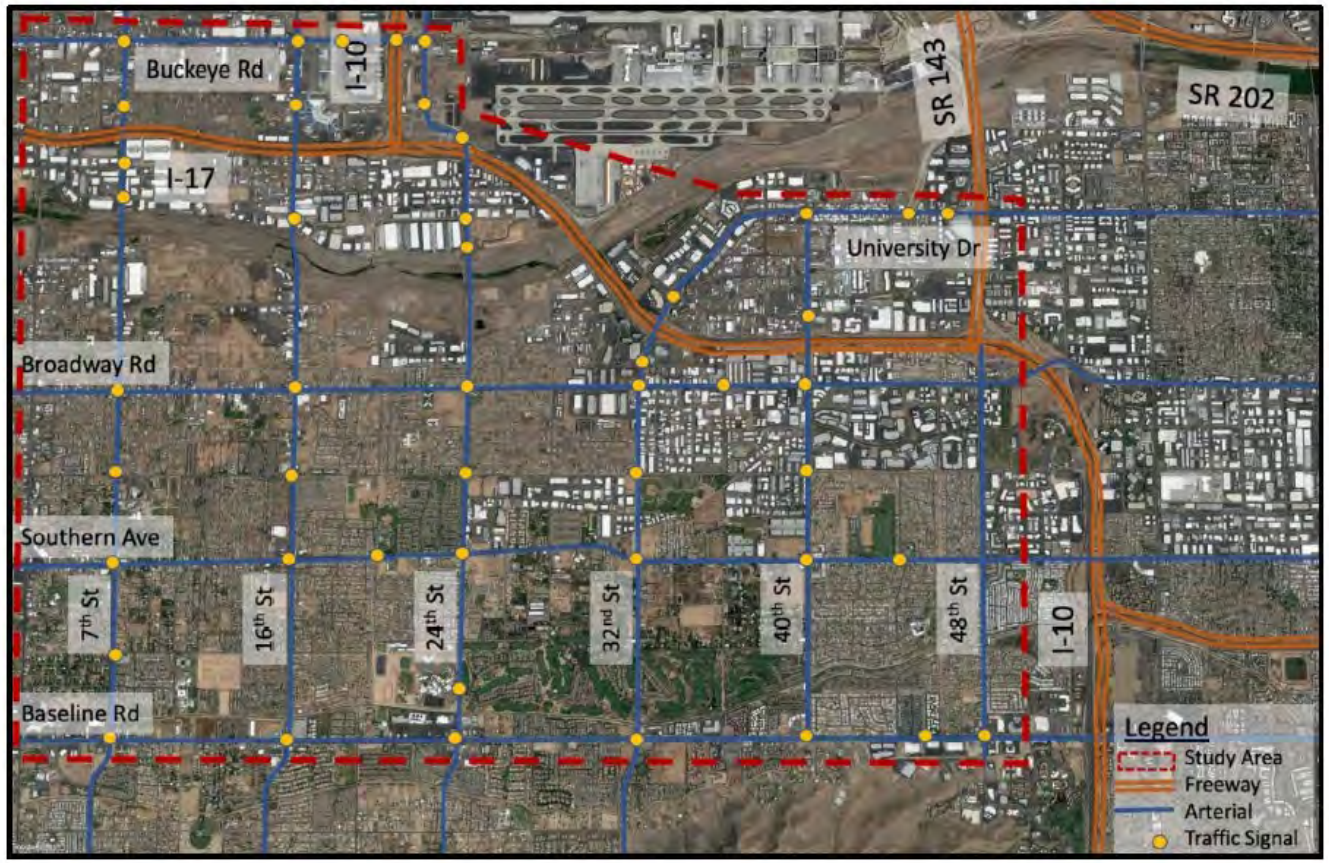
Purpose of the Analysis

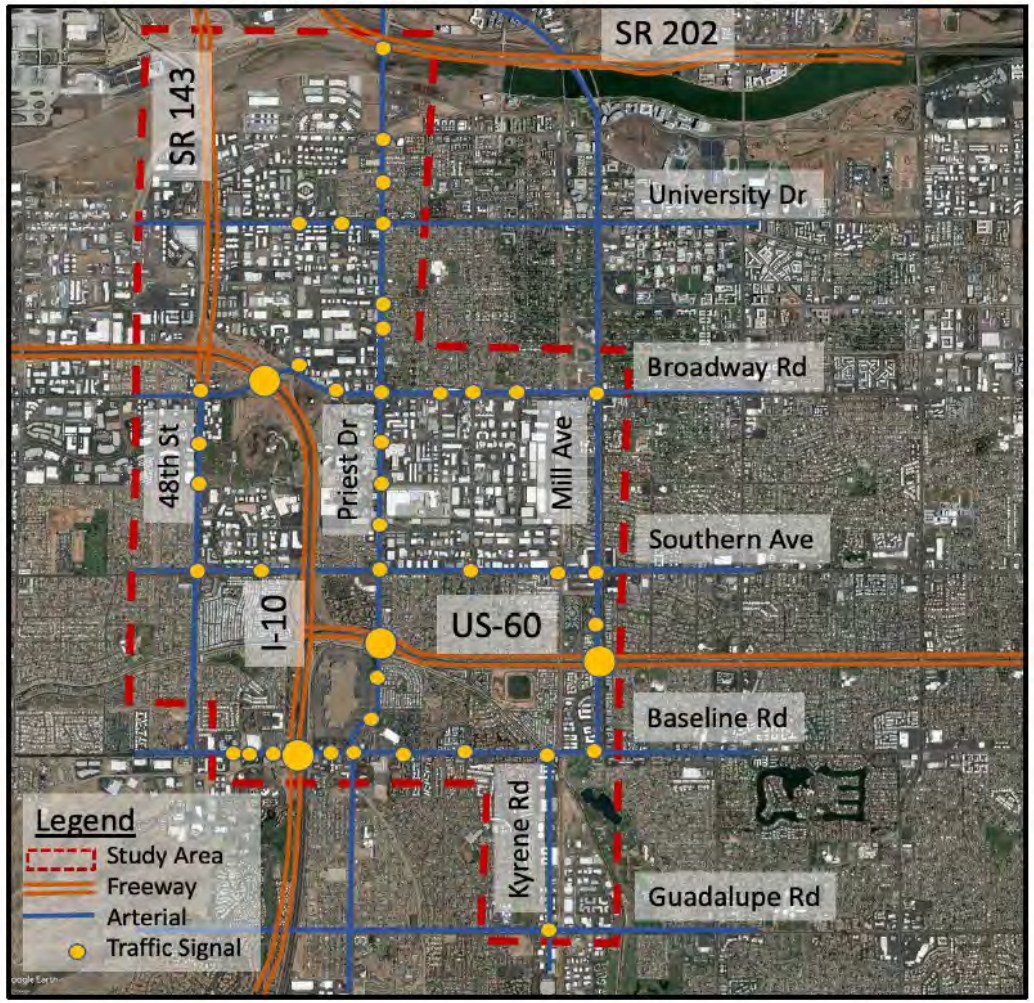
- Assess the traffic management capabilities of the arterial routes near Broadway
  - ❖ East-west arterials between 7th St and Mill Avenue
  - ❖ North-South Arterials between Baseline Rd/Guadalupe Rd and University Drive/ Buckeye Rd

Key components of the Analysis

- System component and traffic management data collection and evaluation of the routes.
- Identifying potential improvements achievable before start of construction.

I-10 Broadway Curve: Traffic Operational Analysis





Freeway Life Cycle Program

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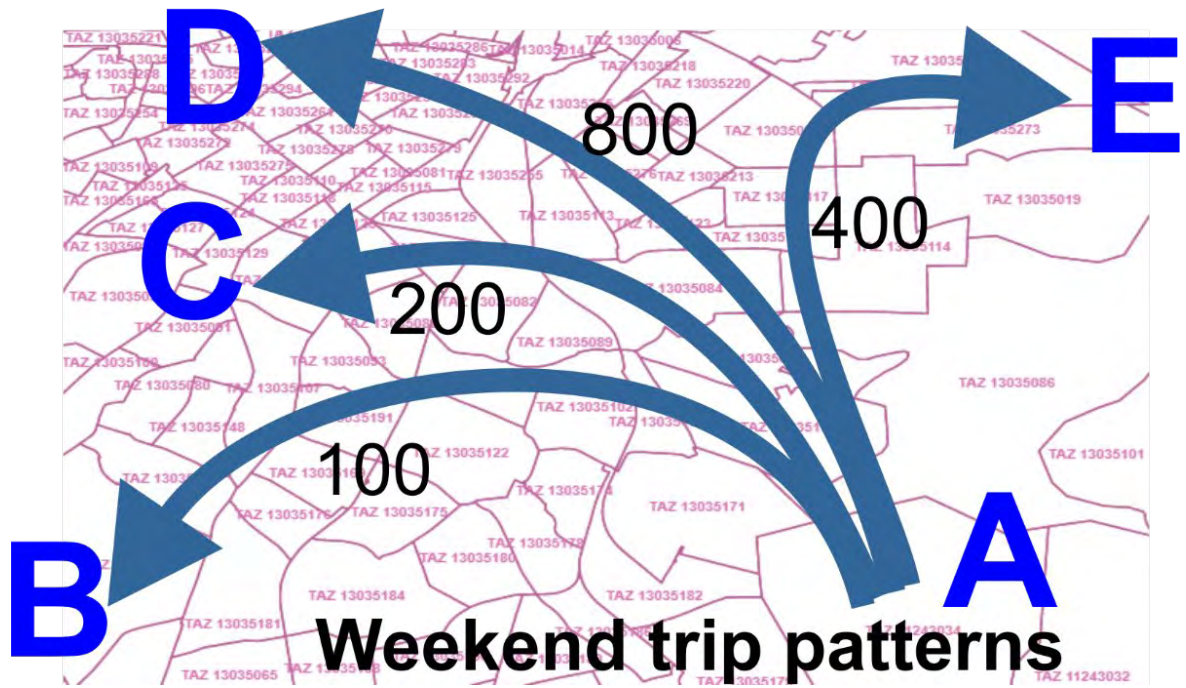
I-10 Broadway Curve: Dynamic Modeling

Purpose

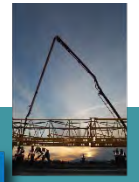
- Identify stress in the network
- Identify impacts to local areas
- Frequency of impacts

Metrics

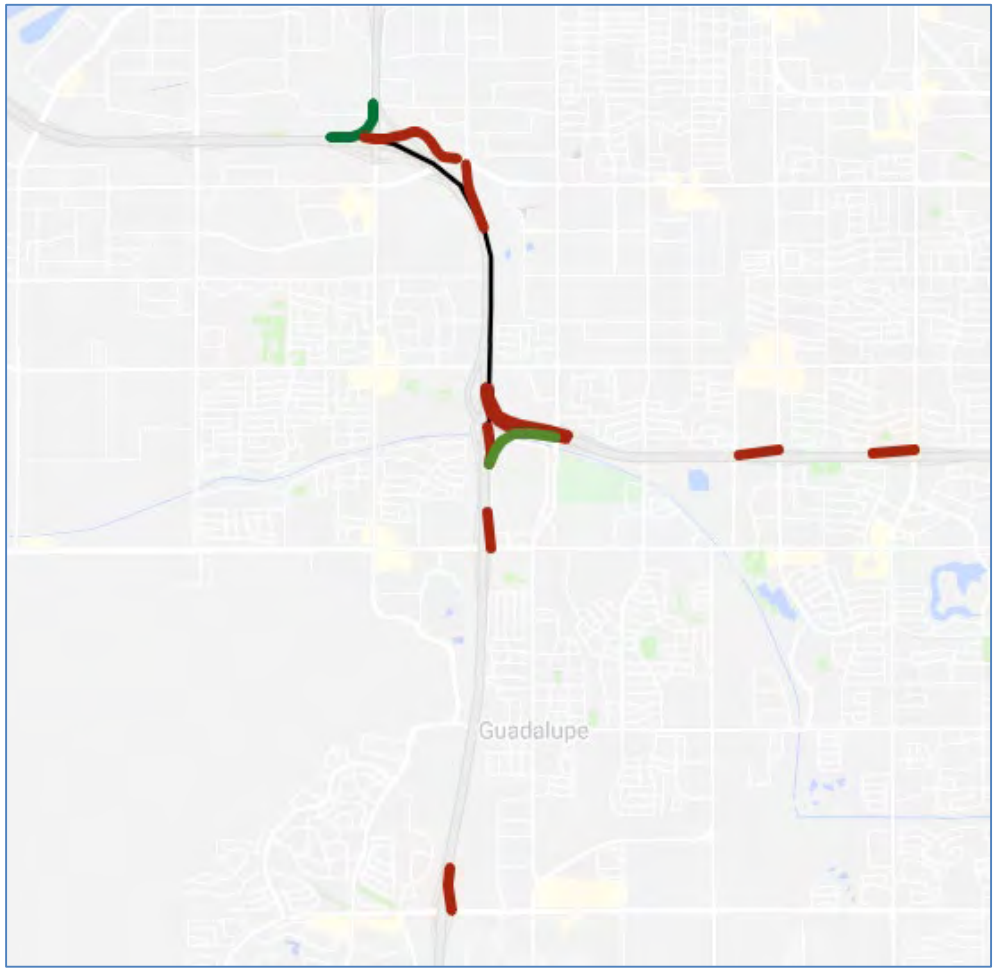
- Volume changes
- Travel time/speed changes
- Spread of impacts

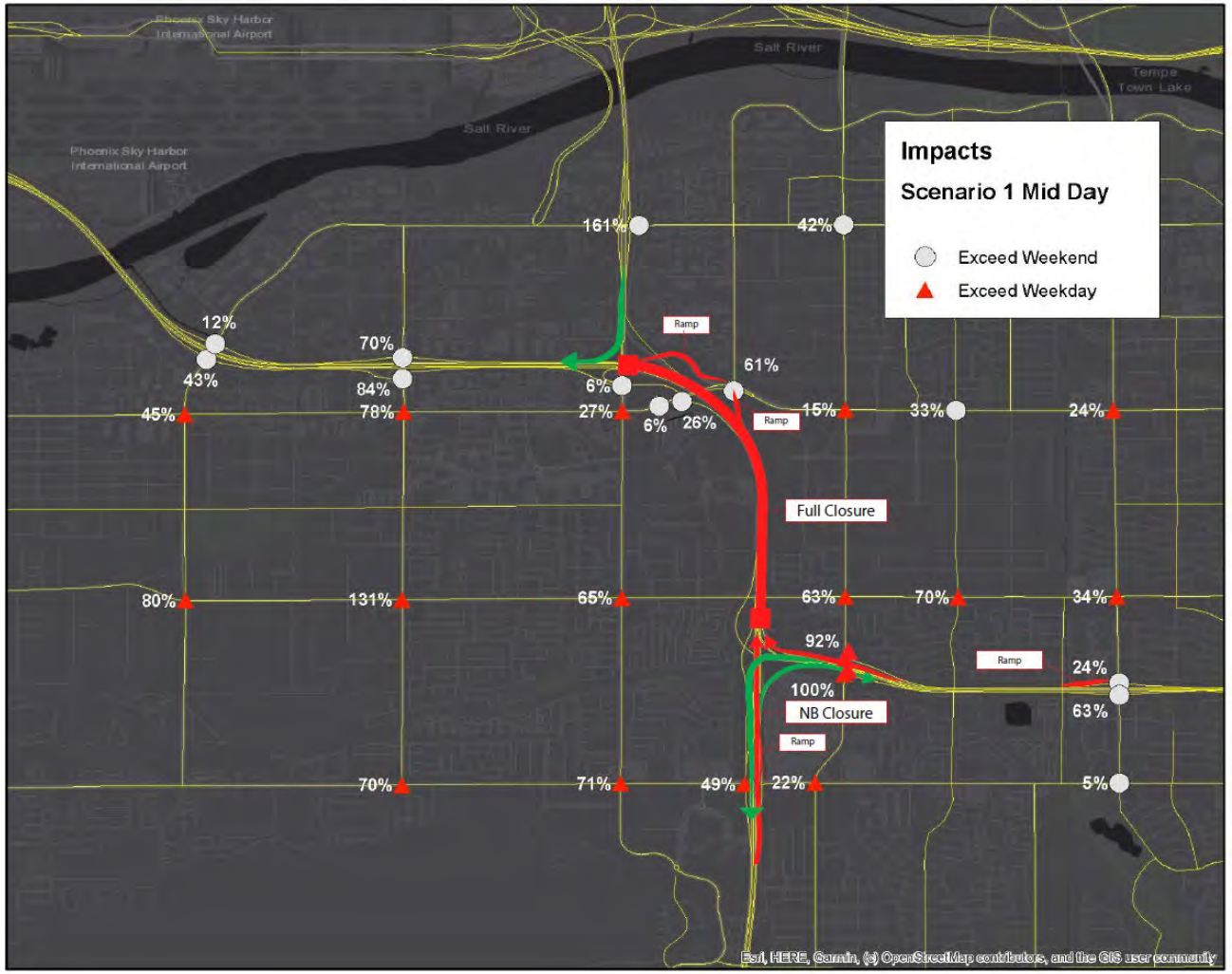






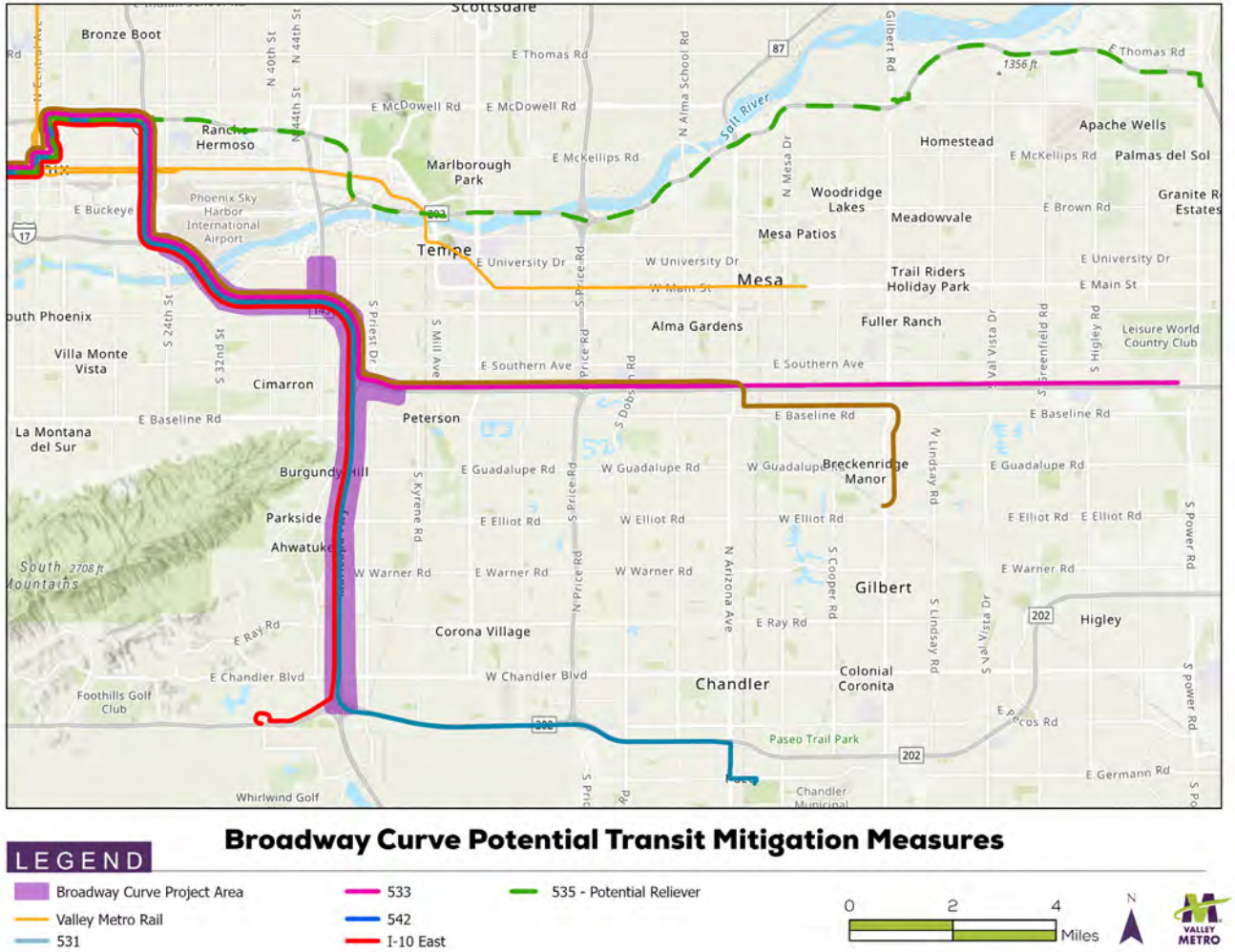

I-10 WB Closure between US 60 & SR 143





Potential Transportation Demand Management and Transit Mitigation Measures

- Commuter-based routes
- TDM
  - Vanpool
  - Carpool
  - Alternative Commutes
- Messaging and marketing
  - Valley Metro and regional efforts



Broadway Curve Potential Transit Mitigation Measures

Freeway Life Cycle Program

MARICOPA ASSOCIATION of GOVERNMENTS

I-10 Broadway Curve: Strategic Communication Plan

This Strategic Communication Plan will ensure the Broadway Project Team deploys proper outreach tools, conveying accurate and timely information to project partners, stakeholders and users.

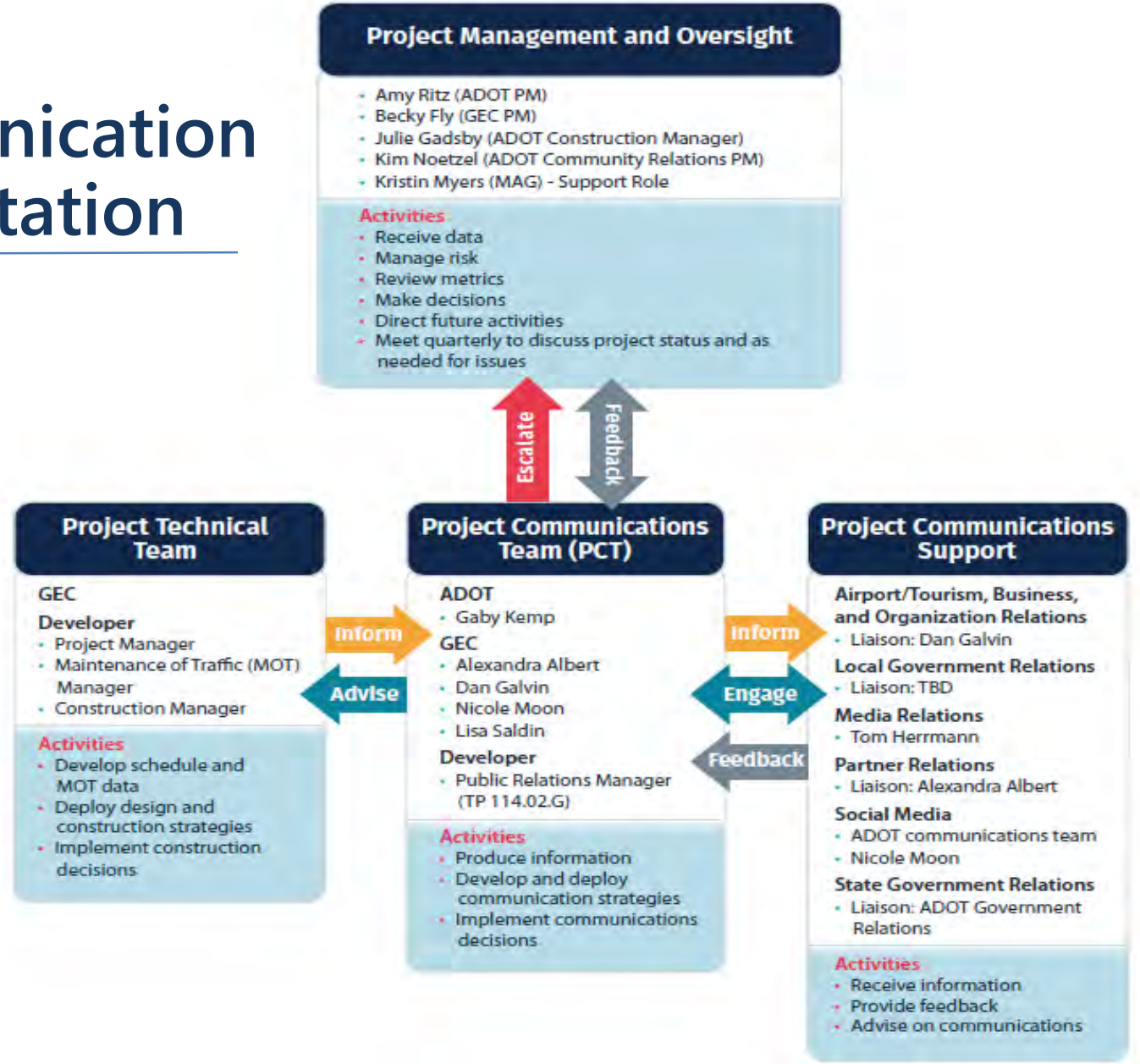
Timeline of Events

- **May 2020:**
  Partner Workshop
- **June 2020– September 2020:**
  Plan development. Distribution
- **December 2020 – June 2021:**
  Preconstruction communication
- **June 2021 – construction:**
  Robust communication and outreach

Photo Courtesy of the Arizona Department of Transportation

Strategic Communication Plan Implementation

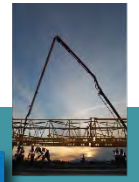
- Consistent Communication
- Active Listening
- Transparency
- Community Connections
- Issue Resolution
- Performance Metrics



Summary and Next Steps

- First major reconstruction project in the region.
- Commitment made with Proposition 400.
- Improving commute times for the traveling public.
- This project brings local and regional economic benefits during and after construction.
- Regional discussion to evaluate the prioritized list of potential holistic mitigation measures will commence this fall.
- Strategic communication plan will be updated once developer is on-board.






I-10 Broadway Curve Update

Kristin Myers
Transportation Project Manager

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5. Traffic Signal Optimization Program: Project Evaluation Methodology

MARICOPA ASSOCIATION OF GOVERNMENTS – TSOP TS2101

PERFORMANCE EVALUATION METHODOLOGY AND TRAINING SEMINAR

October 7, 2020

KITTELSON & ASSOCIATES

WHAT IS TRANSYNC

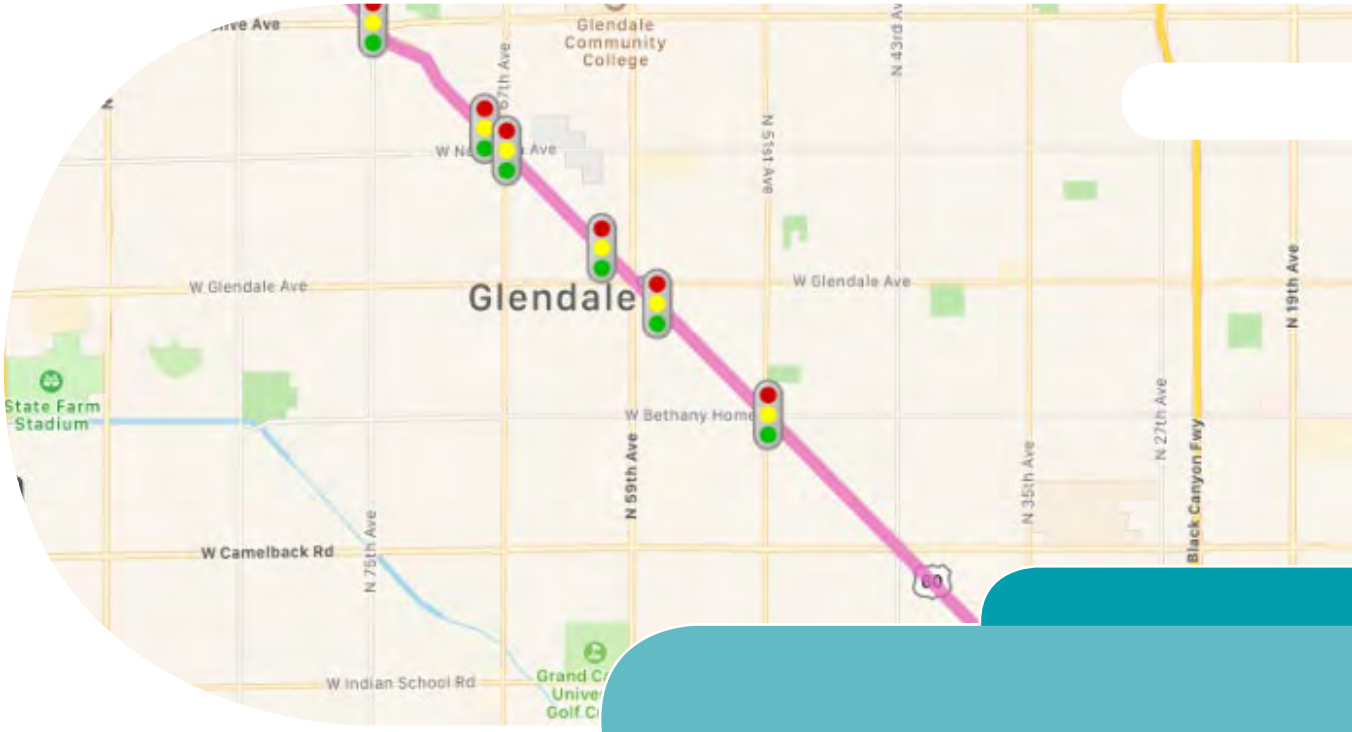
Systematic management, optimization, and performance evaluation of traffic signal timing plans using a desktop or mobile application

GPS Statistics include:

- Travel time
- Average Speed
- Number of Stops
- Stop Time

- Enables before and after evaluations

- Provides real-time field evaluation through mobile application



KITTELSON EXPERIENCE WITH TRANSYNC

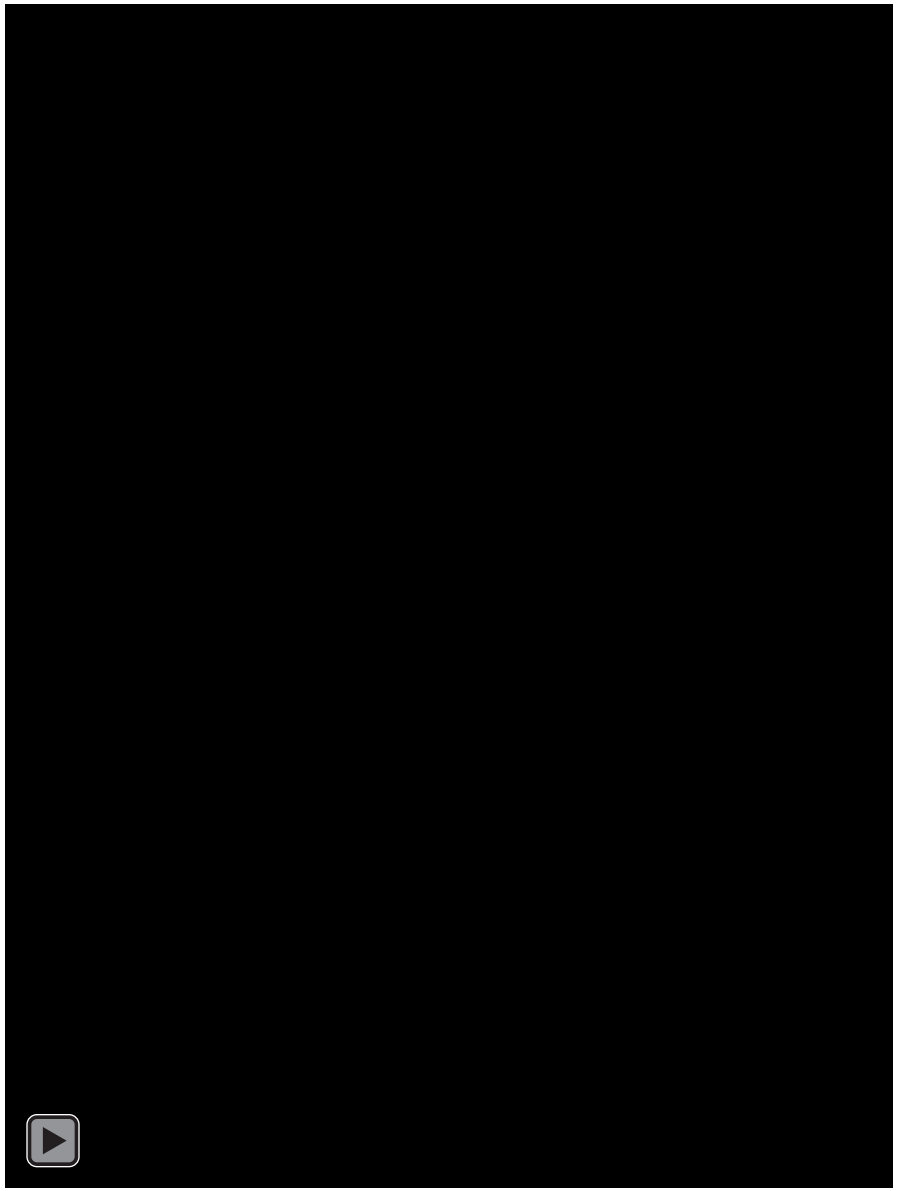
Coordinated signal timing plans on Indian School Rd and Camelback Rd from 19th Ave to 27th Ave to optimize bandwidth and avoid ramp queuing back onto the I-17 mainline.

- Developed Synchro and TranSync models for the AM, PM and weekend peak periods
- TranSync offsets outperformed Synchro offsets in terms of fine-tuning adjustments required in the field
- Synchro optimization is based on delay for all movements at the study intersections vs TranSync optimization is based on bandwidth for the main study corridor

IMPLEMENTATION

Supports verification of signal timing implementation using the iPad application

- Signal timing implementation can be done using the countdown in the TranSync application
- Great tool to save time during fine-tuning



BEFORE AND AFTER EVALUATIONS

Time-Space Diagram can be used to do diagnostics on existing conditions and/or plans that are being evaluated after implementation

- Travel time and stops illustrated on time-space diagram can be useful information to optimize signal timing and fine-tune new plans
- Measures of Effectiveness:
  - Travel time
  - Average Speed
  - Number of Stops
  - Stop Time

Good feedback from Simon Ramos at the City of Phoenix, Mike Sutton at Gilbert and Jim Decker at MAG

PERFORMANCE EVALUATION METHODOLOGY AND TRAINING SEMINAR

Looking at well-rounded evaluation of TranSync and INRIX data that can help us to develop guidelines to enhance the MAG's Traffic Signal Optimization Program

Acquisition of Software and Hardware

Develop Methodology for Before and After Evaluations

Provide Implementation Assistance

Seminar Training

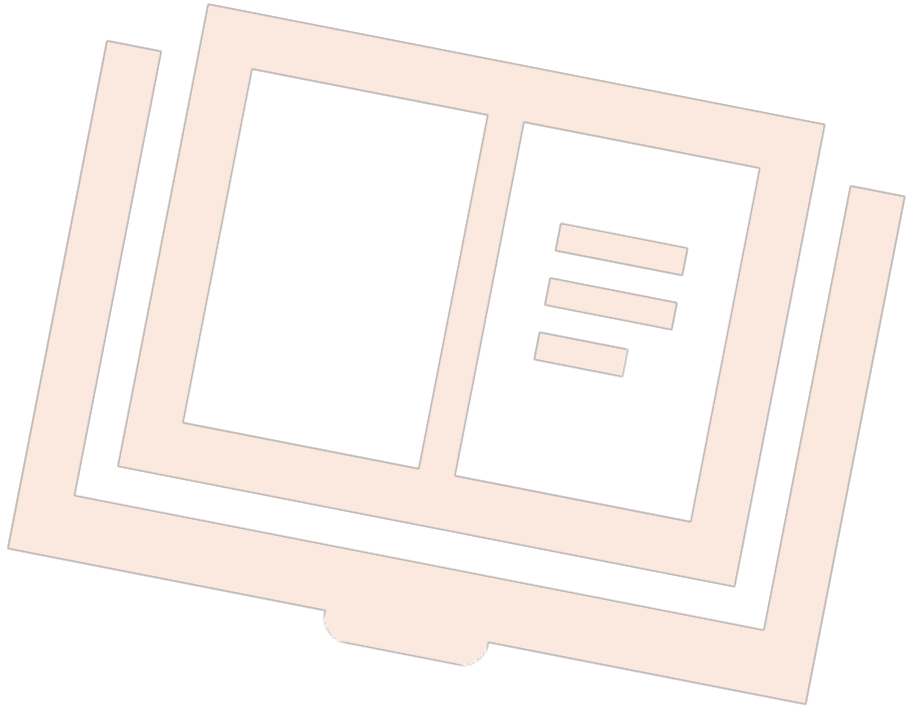
ACQUISITION OF SOFTWARE AND HARDWARE

Buy four Transync licenses

Buy and four iPads including accessories for using equipment in the field and during before and after evaluations

DEVELOP METHODOLOGY FOR BEFORE AND AFTER EVALUATIONS

- Process for evaluations using TranSync and INRIX data
- TranSync Procedure
  - Self-guided handbook
  - Measures of Effectiveness (MOEs)
  - Number of runs, etc.
- INRIX Procedure
  - Select MOEs
  - Amount of data
  - Report format
  - Segmentation



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DEVELOP METHODOLOGY FOR BEFORE AND AFTER EVALUATIONS

- Pilot Study on City of Phoenix's 16th Street and/or Camelback Road
- Using Transync, Inrix and Bluetooth data collection and analysis

IMPLEMENTATION ASSISTANCE

- Kittelson to support 2020 TSOP project before and after evaluations
  - TranSync Evaluations
  - INRIX Data

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SEMINAR TRAINING

- Open for TSOP consultants and MAG's member agencies
- More details to come

KITTELSON & ASSOCIATES

Felipe Ladron de Guevara,
PhD, PE, PTOE

602.648.5490

fladron@kittelson.com

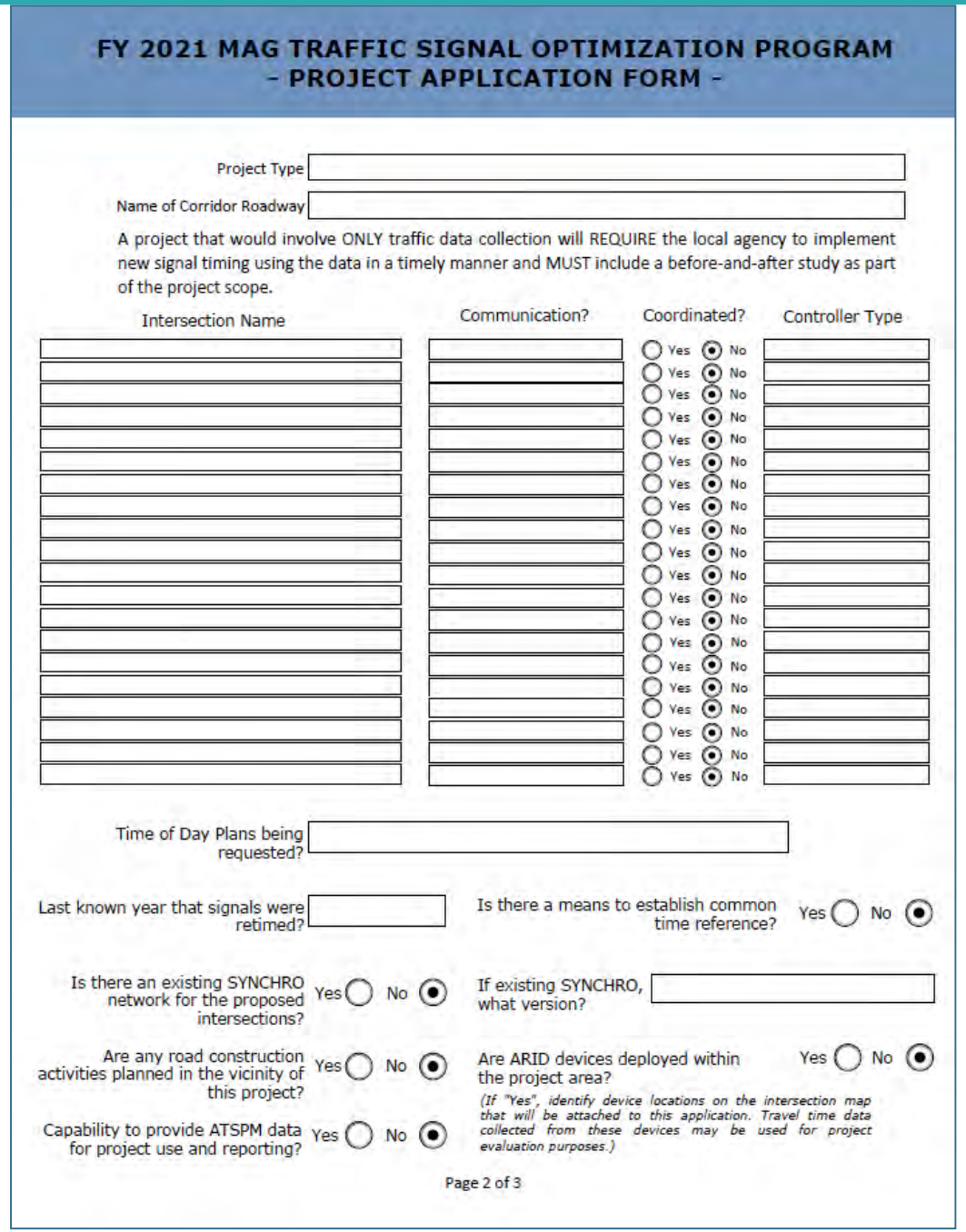
6. FY 2021 Traffic Signal Optimization Program Planning

6. FY 2021 TSOP Programming

- FY 2020 impacts
  - Impact of COVID-19 on traffic conditions
  - Scheduling
  - Application process
- Program funding availability: $420,933.02
  - "Performance Evaluation Methodology…" programmed from FY 2021

6. FY 2021 TSOP Programming

- Application information/changes
  - Controller information
  - Cost includes TMCs
  - Review process



FY 2021 MAG TRAFFIC SIGNAL OPTIMIZATION PROGRAM
- PROJECT APPLICATION FORM -

Project Type

Name of Corridor Roadway

A project that would involve ONLY traffic data collection will REQUIRE the local agency to implement new signal timing using the data in a timely manner and MUST include a before-and-after study as part of the project scope.

Intersection Name	Communication?	Coordinated?	Controller Type
		Yes / No	

Time of Day Plans being requested?

Last known year that signals were retimed?

Is there a means to establish common time reference? Yes / No

Is there an existing SYNCHRO network for the proposed intersections? Yes / No

If existing SYNCHRO, what version?

Are any road construction activities planned in the vicinity of this project? Yes / No

Are ARID devices deployed within the project area? Yes / No

(If "Yes", identify device locations on the intersection map that will be attached to this application. Travel time data collected from these devices may be used for project evaluation purposes.)

Capability to provide ATSPM data for project use and reporting? Yes / No

Page 2 of 3

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6. FY 2021 TSOP Programming

- Schedule
  - Call for Projects — No later than Oct 12th
  - App. deadline — Oct. 26th
  - App. Presentations — Nov. ITS Committee
  - ITS Recommend — Dec. ITS Committee
  - TRC, MC, RC Exec — Dec. 10th, Jan. 6th, Jan. 18th
- Project Completion Deadline: June 30, 2021

7. Requests for Future Agenda Items

8. Comments from the ITS Committee Members

Next Meeting

Wednesday, November 4, 2020 at 10:00 a.m.
Virtual Meeting

9. Adjourn