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I-10, I-19 to Empirita TI / SR 210 Feasibility Studies, Traffic Modeling and Traffic Operations – Agency Meeting (July 7, 2010)

PROJECT:	**I-10, I-19 to Empirita TI / SR 210 Feasibility Studies**	
	ADOT Project No. 010 PM 260 H7825 01L	
DATE/TIME:	July 7, 2010 @ 10:00 AM	
LOCATION:	ADOT Tucson District Office	
SUBJECT:	Traffic Modeling and Traffic Operations – Agency Meeting	
ATTENDEES:	Reza Karimvand, ADOT, Tucson District Traffic	Brad Olbert, Jacobs
	Shafiqul Islam, ADOT, Traffic Design	Patrizia Gonella, Jacobs
	Don Freeman, PAG	Shanthi Krishnan, Jacobs
	Aichong Sun, PAG	Vamshi Yellisetty, Jacobs
	Andy McGovern, City of Tucson	

General Summary:
The traffic coordination meeting for the I-10 and SR 210 Feasibility studies project started at 10:00 AM and concluded at 12:30 pm. Brad Olbert, Jacobs Project Manager gave an overview of the project after introductions.

Brad discussed that the Design Year 2040 East termini is yet to be determined and will be brought up for discussion in the kickoff meeting scheduled for July 21, 2010. He also discussed the general scope of the project and the schedule.

The following key items were discussed during the meeting:

1. Traffic Data Collection:

- Shanthi provided an update of the traffic counting for the project. The counting was conducted by United Civil Group (UCG, sub-consultant) in the month of May to get school traffic. The data is currently being reviewed for quality and is being documented on schematics. The data includes mechanical counts on freeways and major arterials; and, turning movement counts at major intersections and traffic interchanges.
- Reza mentioned that he had sent his staff to verify each of the locations and was happy with UCG's efforts in data collection.
- Andy McGovern mentioned that tube counters came up along SR 210, and advised that we check the data to make sure it was accurate.
- Shanthi mentioned that the data will be displayed on intersection schematics with other relevant information and will be made available to the stakeholders. Any missing data will be collected in the fall.
- Reza suggested that we coordinate with Mark Catchpole to obtain seasonal adjustment factors for the data. His contact information:

  Mark Catchpole
  ADOT Transportation Planning Division, Data Section
  e-mail: mcatchpole@azdot.gov
  Phone: 602-712-8596; Fax: 602-252-8313
- Reza also requested that we send data to City of Tucson, Pima County, PAG and ADOT (Mark Catchpole).
- Don Freeman requested that we send the 'raw data' files to PAG. Don mentioned that PAG has a database of counts for the county including COT. PAG would like the data we have to be included in their database. PAG will provide the historical count information to Jacobs to include in our report. PAG's latest counts were in August 2009/Oct 2009 as part of the External Travel Study.
- Shanthi also mentioned that the mechanical count data includes 'speed' and 'classification' information.

2. Travel Demand Modeling:

- Patrizia provided an overview of the Macro modeling for the project. She requested that PAG provide the growth assumptions, for 2040, in general and for the southeast area in particular.
- Aichong Sun mentioned that the Socio-economic information/model has been approved by PAG for 2040.
- Don Freeman mentioned that the 'Southeast Area Corridor Study' assumed buildout in 2080, but the area should be only half-developed by 2040.
- Don also explained that the recommendations of the 'Southeast Corridor Study' and the 'Loop Study' have not been fully accepted. 2080 results of the modeling for the Southeast Corridor Study areas show freeway volumes south of I-10 to Sahuarita and east of I-19 to Kolb. The 'Southeast Corridor Study' had recommended 'bypass route' through the Town of Sahuarita. An east-west freeway to I-10 bypassing Tucson was recommended passing through the Town of Sahuarita, especially for trucks coming from I-19 and going eastbound. The Town of Sahuarita did not accept a freeway through its town. Recommendations that Kolb be a north-south freeway to handle volumes have not been accepted.
- Don recommended that the Modeling of I-10 should include Southeast area to better determine projections for I-10. North-South arterials could be the roadway system in place, by 2040, due to developer improvements.
- Aichong mentioned that the traffic projections in the Base year 2008 are high compared to counts.
- Patrizia asked if the future roadway projects in the model are only those in the RTP. Don explained that in the 2040 model, PAG has three kinds of projects that are coded:
  - Fiscally approved projects
  - Reserved/Likely to be funded/Desirable
  - Recommended by studies (needed but not accepted)
- Don expressed concern that if the Sauharita/Kolb freeways are built they will seriously affect the traffic modeling for I-10 corridor.

- Don's other concern was that with Kolb connecting to I-10 and the future SR 210 / Valencia connection all occurring in close proximity will cause problems.
- Patrizia reiterated that all the agencies (ADOT-PAG-Pima-COT) need to buy into the modeling assumptions for this project (I-10 and SR 210) before alternatives are looked into. Without Southeast Area included, the work done on this project could be seriously compromised.
- Reza agreed and suggested that this study should be expanded to include the Southeast Area. This will add to the existing scope and will affect the schedule of the I-10 project. Reza asked that Brad send him an e-mail explaining the same and that he will coordinate with the District and Billah Khan, ADOT PM for the project.

Traffic Operations:

- Shanthi asked if the intersections on SR 210 are operated by ADOT or COT. Andy mentioned that all of the intersections on SR 210 are in COT jurisdiction, though SR 210 is an ADOT roadway.
- Reza added that ADOT has an IGA with COT for the maintenance and operation of the traffic signals at all the Traffic Interchanges on I-10 and intersections on SR 210.
- Andy clarified that COT forwards all crash data to ADOT and that the ADOT database should have all that information for the City streets.
- Shanthi mentioned that she will send the data request to Andy for signal timing and phasing information via e-mail. She will also include a request for the City of Tucson to share existing operational concerns/issues at the interchanges / intersections on I-10 and SR 210 within the project area so that they can be addressed during the study.
- Reza said that he has the copies of the 2 studies on I-10 – Prince to Ruthrauff (Kimley-Horn) and Ina to Ruthrauff (Kittleson & Associates). He asked us to send him an e-mail and he can forward us a copy of those studies.
- Reza explained that there is a Synchro model developed by James Witkowski (Morrison-Maierle) and that we can contact Paul Casternow with PAG to obtain permission to get a copy of that Synchro model. Reza also has the report that he can give us a copy.

General:

- Reza suggested that we make sure that CCP/Teresa Welborn/Linda Ritter are in the loop with public meeting. Be sure that the minutes of the meeting are sent to Todd Emery and the rest of the stakeholders.
- Reza also suggested that Brad add the Border Patrol to the list of stakeholders as they have a station near Davis-Monthan AFB. Reza will forward the Kickoff Meeting invite to the Border Patrol.
- Reza would like to have two hard copies of all documents including the meeting minutes.
- Reza suggested that we add Tom Martinez to the list in the review process.

Action Items:

- Patrizia to coordinate with PAG to obtain the copy of the 2040 PAG Travel Demand Model.
- Brad to send e-mail to Reza explaining the request to include additional traffic modeling to address the impact of the Southeast Area on the project.
- Reza to forward the e-mail to Billah Khan and District Engineer – Todd Emery requesting the change in the scope and schedule.
- Shanthi to send a request :
  - To the City of Tucson requesting traffic data and additional information regarding operational issues in the project area.
  - To Reza requesting copies of recent traffic studies on I-10.
  - To Paul Castrenow, PAG to obtain copy of the *Synchro* Model that was recently developed by Jim Witkowski of Morrison-Maierle.
  - To request Don Freeman, PAG for the historical traffic data and data from the External Travel Study.

Brad Olbert

Brad Olbert, PE

I-10, Jct I-19 to Empirita TI, Kickoff Meeting Notes (July 21, 2010)

KICKOFF MEETING NOTES

I-10, JCT I-19 TO EMPIRITA TI

Project No. 010 PM 260 H7825 01L

July 21, 2010

TO: **Kickoff Meeting Attendees**

Tim Wilson, ADOT Roadway Predesign Section, MD 605E
Billah Khan, ADOT Roadway Predesign Section, MD 605E
Daniel Granillo, ADOT Tucson District Project Development, MD T168
Robin Raine, ADOT Tucson District Statewide Project Management, MD T100
Reza Karimvand, ADOT Tucson District Traffic, MD T120
Linda Ritter, ADOT Tucson District Communication and Community Partnerships, MD T100
Rod Lane, ADOT Tucson District Development / Maintenance Engineer
Paul Baumgardt, ADOT Environmental Planning Group, MD EM02
Karim Rashid, ADOT Traffic Design Team, MD 063R
Kathy Boyle, ADOT Intergovernmental Affairs, MD 118A
Jim DeGrood, PAG Transportation Services, 177 N. Church St., Suite 405, Tucson, AZ 85701
Tim Thurein, PAG Transportation Planning, 177 N. Church St., Suite 405, Tucson, AZ 85701
Aryan Lirange, FHWA Area Engineer, 4000 N. Central Ave., Suite 1500, Phoenix, AZ 85012
Nick Renna, FHWA Florida, ITS / Operations Eng., 545 John Knox Rd, Suite 200, Tallahassee, FL 32303
Damon Ballesteros, Pima County Project Manager, 201 N. Stone Ave., Tucson, AZ 85701
Robert Young, Pima County Transportation System, 201 N. Stone Ave., Tucson, AZ 85701
Kathy Jirschele, Kaneen P.R., Community Outreach, 110 S. Church Ste. 3350, Tucson, AZ 85701
Liz Beamer, Kaneen P.R., Community Outreach, 110 S. Church Ste. 3350, Tucson, AZ 85701
Benny Young, Cochise County Highway and Floodplain, 1415 Melody Lane, Bldg. G, Bisbee, AZ 85603
Richard Salaz, City of South Tucson, Transportation and Flood Control, 1601 South 6th Ave., Tucson, AZ 85713
Joel Gastelum, City of South Tucson Planning, 1601 South 6th Avenue, Tucson, AZ 85713
Mike Dawson, EcoPlan Associates, 78 W. Cushing St., Tucson, AZ 85701
Steve Reuter, EcoPlan Associates, 78 W. Cushing St., Tucson, AZ 85701
Geoff Slater, Nelson/Nygaard Consulting, 116 Pine Tree Ln. Fayston, VT 05673
Brad Olbert, Jacobs, 101 N. First Ave., Ste. 3100, Phoenix, AZ 85003
Jack Allen, Jacobs, 101 N. First Avenue, Ste 3100, Phoenix, AZ 85003
Patricia Gonella, Jacobs, 101 N. First Ave., Ste. 3100, Phoenix, AZ 85003
Roland Cook, Jacobs, 101 N. First Ave., Ste. 3100, Phoenix, AZ 85003
Betsi Phoebus, Jacobs, 101 N. First Ave., Ste. 3100, Phoenix, AZ 85003
Gary Fromm, Jacobs, 101 N. First Ave., Ste. 3100, Phoenix, AZ 85003
Paul Black, Jacobs, 101 N. First Ave., Ste. 3100, Phoenix, AZ 85003
Oscar Oliden, Jacobs, 101 N. First Ave., Ste. 3100, Phoenix, AZ 85003
Adina Alpert, Jacobs, 101 N. First Ave., Ste. 3100, Phoenix, AZ 85003
Vanessa Quinto, Jacobs, 101 N. First Ave., Ste. 3100, Phoenix, AZ 85003

Not in Attendance

Todd Emery, ADOT Tucson District Engineer, MD T100
Jerry James, ADOT Tucson District Assistant District Engineer, MD T100
Tom Marinez, ADOT Tucson District Transportation Engineering Specialist, MD T120
Ayman Ghadban, ADOT Tucson District Utility Engineer Coordinator, MD T100
Bill Harmon, ADOT Safford District Engineer, MD S400
Tom Engel, ADOT Safford District Maintenance Engineer, MD S400
Robert Travis, ADOT Utilities & Railroads, MD 618E
Chris Cooper, ADOT Roadway Design, MD 615E
Reed Henry, ADOT Support Team Manager, MD 615E
Pete Mayne, ADOT R/W Project Management Section Coordinator, MD 612E
Teresa Welborn, ADOT Communications & Community Partnerships, MD T118A
J.J. Liu, ADOT Geotechnical Operations, MD T068R
Pe-Shen Yang, ADOT Bridge Design Service, MD 612E
Paul Burch, ADOT Pavement Design Section, MD 068R
Javed Bari, ADOT Pavement Design Section, MD 068R
Chong-Tai Chyan, ADOT Photogrammetry and Mapping, MD 203P
Virgil Coxon, ADOT Chief Surveyor, MD 203P
Jim Wilson, ADOT Geotechnical Design Engineer, MD 068R
Leroy Brady, ADOT Roadside Development, MD 617E
Shajed Haque, ADOT Roadway Drainage Design, MD 634E
Estomih Kombe, ADOT Transportation Research Project Manager, MD 075R
Debbie Mayfield, ADOT Priority Programming Section, MD 310B
Marta Raiford, ADOT Roadway Predesign Section, MD 605E
Cherie Campbell, PAG Transportation Planning Director, 177 N. Church St., Suite 405, Tucson, AZ 85701
Don Freeman, PAG Technical Services Coordinator, 177 N. Church St., Suite 405, Tucson, AZ 85701
Ken Davis, FHWA Senior Engineer Manager, 4000 N. Central Ave., Suite 1500, Phoenix, AZ 85012
Mary Frye, FHWA Environmental Coordinator, 4000 N. Central Ave., Suite 1500, Phoenix, AZ 85012
Ed Stillings, FHWA Engineering Development Coordinator, 4000 N. Central Ave., Suite 1500, Phoenix, AZ 85012
Priscilla Cornelio, Pima County Department of Transportation Director, 201 N. Stone Ave., Tucson, AZ, 85701
Ben Goff, Pima County Transportation System Director, 201 N. Stone Ave., Tucson, AZ, 85701
Albert Letzkus, Pima County Traffic Engineering Div. Manager, 1313 S. Mission Road, Tucson, AZ, 85713
Jim Glock, City of Tucson Transportation Director, 201 N, Stone Ave., Tucson, AZ 85701
Mary McLain, Sun Tran Asst. General Manager, 4220 South Park Ave., PO Box 26765, Tucson, AZ 85726
Nanette Pageau, Kaneen Advertising & Public Relations Inc., Public Relations Director, 110 S. Church Ave., Suite 3350, Tucson, AZ 85701
Michael Toriello, Davis-Monthan AFB, 3791 S. 3rd Street, Davis-Monthan AFB, AZ 85707
Darren Horstmeier, Davis-Monthan AFB, 3791 S. 3rd Street, Davis-Monthan AFB, AZ 85707
Aziz Aman, Union Pacific Railroad
Zoe Richmond, Union Pacific Railroad
Laurene Montero, Jacobs, 101 N. First Avenue, Ste 3100, Phoenix, AZ 85003
Shanthi Krishnan, Jacobs, 101 N. First Avenue, Ste 3100, Phoenix, AZ 85003
Jeff Holzmeister, J2 Engineering, 4646 W. Cotton Gin Loop, Phoenix, AZ 85040

FROM:

Brad Olbert, Jacobs, 101 North First Avenue, Suite 3100, Phoenix, Arizona 85003

SUBJECT:

KICKOFF MEETING NOTES
I-10, JCT I-19 to Empirita TI
Project No. 010 PM 260 H7825 01L
I-10 / Barraza-Aviation Pkwy (SR 210)
Feasibility Reports and Environmental Overviews

INTRODUCTION

The Kickoff Meeting for this project was held at 9:30 AM July 21, 2010 at the City of Tucson Fire Central Station, Training Room, and concluded at 11:00 AM. ADOT has retained Jacobs to prepare the Feasibility Reports and Environmental Overviews for the I-10 from Junction I-19 to Empirita Road or beyond and for the Barraza-Aviation Pkwy (SR 210) extension from Golf Links Road to vicinity of Kolb Road.

Deciding how to best improve mobility along I-10 in the region southeast of downtown Tucson has been a major goal of ADOT/City of Tucson/Pima County and PAG. Another major goal is to extend the Barraza-Aviation Parkway to the south and east to connect to I-10 to improve the flow of traffic into the downtown Tucson area. The Feasibility Studies will use PAG's 2040 Regional Transportation Plan as the modeling basis. All alternatives will be studied closely to identify those to carry forward into future phases.

Because the operations of the I-10 and the Barraza-Aviation Parkway are so inter-dependent in this area, studying the two roadways concurrently provides a level of efficiency and information sharing that would be lost in separate analyses. The I-10 Feasibility Study will look at operations along I-10 from I-19 to Empirita Road TI or beyond. With the projected growth near the Benson area, the logical easterly terminal may be the SR 90 TI. The Barraza-Aviation Parkway Feasibility Study will look at operations near the easterly end of the existing corridor and study alternatives to extend the parkway to I-10.

The Environmental Overviews are critical for both of the Studies as they identify the potential fatal flaws and address concerns and opportunities for the different alternatives.

The meeting was well represented by agencies having interests in improving the I-10 corridor and improving the Aviation-Barraza Parkway. Agencies in attendance were: Pima Association of Governments (PAG), Federal Highway Administration (FHWA), ADOT Predesign, ADOT Tucson District, ADOT Safford District, Pima County, Cochise County and City of South Tucson.

SUMMARY

Billah Khan, ADOT Predesign Project Manager, opened the Kickoff meeting with a brief description of the intent of the project and described the two phases. Phase I consisting of two Feasibility Reports and two Environmental Overviews for the I-10 and the SR 210 Corridors. Phase II consisting of a Design Concept Report (DCR) and an Environmental Assessment (EA) for the I-10 Corridor. At the present time, ADOT Predesign only has plans for a DCR and an EA to be prepared for the I-10 Corridor. Billah introduced Brad Olbert, Jacobs Project Manager.

Brad Olbert conducted self-introductions of the attendees and started the meeting with presenting the project goals, project overview, work to date, project communication, scheduling, and project key issues. Brad concluded the meeting with requesting input from attendees into issues and factors that have to be considered in implementing the project.

Project Goals

- Decide how best to improve mobility along the I-10 Corridor from the downtown Tucson area towards Benson.
- Identify the best alternatives for I-10 corridor and the Barraza-Aviation connection to I-10 to carry forward for further evaluation in future studies.

Work to Date

The work to date includes traffic counts for 172 counters per week on I-10, Barraza-Aviation Parkway and all streets impacting the study. Traffic counts for turn movements at over 40 intersections were also collected. A Traffic Modeling and Traffic Operations Meeting took place in July 7th with ADOT, City of Tucson, and PAG to discuss traffic data collection, travel demand modeling and traffic operations.

Project Communication

- Two options for progress meetings were given. Per general consensus, monthly progress meetings will be held the last Monday of every month from 1 PM to 3 PM.
- The **next Study Team Progress Meeting will be Monday, August 30th, from 1-3 PM.** Progress meetings will be held in ADOT Tucson District Training Room, and video conference with ADOT Green Room (Phoenix). Please note that because the project will be extended to SR 90 the video conference will be provided to the Safford District office as well.
- A project website for the study team was created (www.jacobsaz.com). Login and password was given during the Kickoff Meeting and members can contact Jacobs at I-10info@jacobs.com to obtain access to the study team project website.
- A website for public use is being developed by ADOT. This website will be up running prior to the Public Hearing scheduled for mid-November of this year. More information will be given to the study team when information is available.

Project Schedule

- The tentative project schedule was given to the study team. The tentative major milestones are:
  - Public Hearing: mid-November 2010
  - Initial Feasibility Reports: end of December 2010
  - Draft Environmental Overviews: end of December 2010
  - Final Feasibility Reports: end of February 2011
  - Final Environmental Overviews: end of February 2011
- Project schedule to be revised with extension of study limits.

Project Key Issues

The project key issues for the I-10 and Barraza-Aviation Parkway (SR 210) Feasibility Studies (FS) and Environmental Overviews (EO) includes the following:

- **I-10 Project Limits On the Eastern Termini:** the scope of work in the contract documents shows the easterly termini at the Empirita Road TI With the projected growth in the Benson neighborhood, extending the project limits beyond Empirita Road TI is being considered. If the I-10 study extends to SR 90, the project will also involve SEAGO, Cochise County, and City of Benson. Per Stakeholder's input during the Kickoff Meeting, the eastern termini will be extended to SR 90.
- **PAG Travel Demand Model:** the design year for this project is 2040 and will follow assumptions and information used in the approved 2040 PAG Model. The modeling will be expanded to include the Southeast Area as large population growth is projected in this neighborhood.

- **Consideration of Alternative Interchange Types for I-10:** each interchange will be studied closely to determine interchange types that best suit the traffic projections.
- **Consideration of Alternative Alignments for Barraza-Aviation Parkway:** the previous URS study shows the Barraza-Aviation Parkway connection to the I-10 at Valencia Road with a large traffic interchange. This alternative may not alleviate traffic as it is relatively close to downtown Tucson. Extending the Barraza-Aviation Parkway further east as a parallel corridor to I-10 will be considered in the Feasibility Studies.
- **Davis-Monthan AFB:** not present at the meeting but the key issues identified earlier were maintaining a high level of security and an additional south entrance to the base.
- **Valencia Road Coordination:** Pima County is currently working on the Valencia Road Study. This will be a key component to the Feasibility Studies.
- **Environmental Concerns:** the Environment Overview (EO) identifies environmental issues for each alternative and will identify potential fatal flaws and environmental opportunities for all alternatives.

Stakeholder Input / Concern / Opportunities

PAG ***(represented by Jim DeGrood and Tim Thurein)***
- Alignment options identified earlier for the Barraza-Aviation parkway are posted on PAG's website. Jacobs will download information from website and share with the study team.
- PAG received $19 M of funding from RTA for this project.
- PAG is working with Jacobs' Modeling Team. Design year for the modeling is 2040.

FHWA ***(Represented by Aryan Lirange)***
- FHWA is concerned with the Barraza-Aviation Parkway connection to I-10. The Study Area Exhibit given at the meeting shows the easternmost connection between Kolb Road and Houghton Road, near Rita Road. Aryan Lirange would like the western alternative connection to be further west near Alvernon Way. I-10 would carry the additional traffic between Alvernon Way and Rita Road. Aryan thought a parallel facility would be expensive and was not sure of the benefit. Jacobs' travel demand model will consider several alternatives to best determine point of connection with I-10. Previous URS study shows a large TI at Valencia Road but Jacobs will consider extending connection further east, creating a parallel parkway to the I-10 to alleviate local traffic between downtown Tucson and the east.
- FHWA indicated concurrence in extending the point of termini to SR 90.
- FHWA approves evaluating different TI types for the I-10 study.
- FHWA desires two-mile spacing for TIs in rural areas with full interchanges and braided ramps to alleviate weaving. Two-mile spacing might not be feasible in downtown Tucson area. Existing TIs in the downtown area are less than one mile apart.
- Discussion for potential new TIs was raised. FHWA commented that partial TIs do not get approved easily. One potential new TI for this project is the Barraza-Aviation Parkway connection to I-10. Pima County commented that the County is starting their study of the Southeast Area and results from this study will indicate if new TIs are needed.
- FHWA asked if the study is going to include the I-19 junction as it is recently improved. Jacobs will evaluate the traffic from 6th Avenue TI to I-19 TI for weaving distances but does not plan to go further west from the I-19 ramps. FHWA suggested coordinating study with the I-19 DCR Study from San Xavier to I-10 (Ajo Connection Improvement).
- Coordination with future Marsh Station work was mentioned by FHWA. Gary Fromm, Jacobs Project Manager for Marsh Station, provided an update on this project:
  - UPRR Bridge is scheduled for removal summer 2011.
  - Next phase of Marsh Station (median widening) is being delayed due to delay in the structure removal.
  - New Marsh Station TI (under construction), is designed for 3 lanes in each direction.

ADOT Tucson District ***(Represented by Daniel Granillo)*** **and ADOT SPMS** ***(Represented by Robin Raine)***
- Tucson District supports the Barraza-Aviation Parkway extension further east to alleviate local traffic from I-10 near downtown Tucson area.
- Suggest eliminating or reconfiguring the antiquated TIs such as Palo Verde Road and loops at Kino Parkway (drainage problems). Tucson District is also interested in evaluating different TI types along the I-10 corridor.
- Fiscal consideration for TI improvements should be included in the study to allow funding to be programmed.
- Tucson District supports extending study to Pima/Cochise County line or further east.

ADOT Safford District ***(Represented by Reza Karimvand)***
- Safford District supports the eastern termini to end at SR 90. PAG and SEAGA need to coordinate transition of funding if study is extended.
- Several factors to consider relative to extending the I-10 project to SR 90:
  - Future development: 15 developers have plans in negotiation including large commercial and residential development near SR 90.
  - SR 90 is the main connection to Sierra Vista and Fort Huachuca.
- Realignment of I-10 near SR 90 (MP 300 to MP 303) to remove sharp curves and I-10 / SR 90 TI improvements will be constructed in the near future. URS did design for this project and bids will be open in August 2010. Safford District can provide URS's contact information regarding the I-10 / SR 90 improvements.
- Two other studies are also taking place in this area: J Six Ranch Road / Mescal Road TI and Skyline Ranch Road TI. URS is currently working on one of them and the other one is completed. Mark Hoffman (MPD) is the PM on these studies. Jacobs to contact Reza requesting more information regarding these studies.
- Reza suggested including Border Patrol in the stakeholder's list. Border Patrol has a new facility south of Davis-Monthan AFB. Reza will provide Border Patrol contact information to Jacobs.
- Rosemont Mine is being developed south of I-10 near SR 83 (MP 47); truck routes from the mine need to be considered in these studies. Rosemont Mine Traffic Impact Analysis (TIA) was completed. Safford District can provide Jacobs a copy of the TIA.

Pima County ***(Represented by Damon Ballesteros and Robert Young)***
- Pima County is currently developing the Southeast Land Use Plan. Large growth is expected in this area and it needs to be incorporated in the Feasibility Studies.
- Valencia Road Study is a key component for the Feasibility Studies. Jacobs will coordinate with Pima County to incorporate data from Valencia Road Study.

Cochise County ***(Represented by Benny Young)***
- Cochise County supports extending the Feasibility Study to SR 90.
- Cochise County is currently working on the Northwest Area Plan (nearing completion). Jacobs to contact Karen Lamberton, Cochise County Transportation Planner, for information regarding this plan.

City of Tucson ***(Not represented)***
- Pima County indicated that the City of Tucson has a new study for major roads and streets between Houghton Road and Vail Road with a possible TI at I-10. Jacobs to contact City of Tucson for more information regarding this study and for any other concerns they may have for the I-10 project.

City of South Tucson ***(Represented by Richard Salaz and Joel Gastelum)***

- City of South Tucson is concerned with the improvements from I-19 to 6th Avenue:
  - Yaqui Village on the south side of I-10 is a non touchable area.
  - Shopping Centers and new townhome development on the north side of I-10

Davis-Monthan AFB ***(Not represented)***

Jacobs received an email from Darren Horstmeier (DMAFB) on July 20th showing a schedule conflict with our project Kickoff Meeting. Davis-Monthan is planning on attending the August Progress Meeting.

Sun Tran ***(Not represented)***

UPRR ***(Not represented)***

OTHER:

Tucson International Airport

Aryan Lirange, FHWA, asked if any traffic consideration for Tucson International Airport was given in the Feasibility Studies. Robin Raine, ADOT SPMS, said that the two connections to the airport were I-10 at Kino Road and I-19 at Valencia Road. Kino Road TI needs to be looked at closely for connection to the airport. Reza Karimvand, ADOT Southern Regional Traffic Engineer, suggested adding Tucson International Airport to the stakeholder list.

Houghton Road TI

Representative from Kaneen Public Relations said that in earlier public meetings on the I-10 corridor the public expressed the need for improvements to the Houghton Road TI.

Kino Parkway TI

Costco and the University of Arizona research facility are being developed on the northwest corner of Kino Parkway TI.

Palo Verde Road TI

Previous URS study shows consideration to remove Palo Verde TI and relocating it to Country Club Road.

I-10 Improvement near SR 83

- It was suggested that Jacobs contact the City of Tucson Planning Department for further information regarding development plans for the Mall of America project near SR 83. City of Tucson is very involved with this project as it will consider annexing the area. Developer of Mall of America is Westcor.
- Kaneen Public Relations also mentioned that the public had expressed concerns about the short ramp at SR 83. ADOT Predesign said that the earlier Public Scoping Report for the project is available.
- Growth along Sahuarita Road should be considered in the Feasibility Studies as this is an important connection between the Southeast Area and SR 83. Sahuarita Road connects to SR 83, approximately 3 miles south of I-10.

Freight Planning

- Some structures on I-10 are not adequate for large, oversized trucks. These trucks are currently detoured to County Roads. With future I-10 improvements and removal of inadequate structures, I-10 will have more truck traffic. I-10 was once designated the "Corridor of the Future" by FHWA for freight movement. Jacobs should look into what this designation means and what the implications / impact are.
- Jacobs to contact Al Altuna, PAG freight planner.

I-10 Improvements

- I-10 will have a desirable maximum of 5 lanes in each direction. This is the number of lanes to plan for to preserve the corridor right-of-way for both urban and rural freeways.

Environmental Overview

Mike Dawson, EcoPlan Associates, Inc., concluded the discussion with presenting the key definitions for the Environmental Overview (EO):

- EO does more than identifying fatal flaws.
- It does not provide environmental clearances.
- It identifies the possible concerns and opportunities with each alternative presented in the Feasibility Studies.
- Data collection is based on observation, general knowledge of the area and existing databases.
- One of the challenges in the EO is to communicate carefully with the public when presenting the alternatives. The EO cannot select or indicate a preference to any alternative. Alternatives are selected during the Design Concept Report and Environmental Documentation phase.

ACTION ITEM LIST

ADOT / Jacobs to revise scope of work to extend I-10 easterly termini to SR 90

Jacobs to follow up on the following studies:

- I-19 DCR Study from San Xavier to I-10, Ajo Connection Improvement (ADOT)
- I-10 / SR 90 TI Improvements Plans (Reza Karimvand, ADOT Regional Traffic Engineer)
- J-Six Ranch Road/Mescal Road TI Study (Reza Karimvand, ADOT Regional Traffic Engineer)
- Skyline Ranch Road TI Study (Reza Karimvand, ADOT Regional Traffic Engineer)
- Rosemont Mine Traffic Impact Analysis (Reza Karimvand, ADOT Regional Traffic Engineer)
- Study for major roads and street between Houghton Road and Vail Road (City of Tucson)
- Mall of America development plans near SR 83 (City of Tucson)
- Future freight movement along I-10 (Al Altuna, PAG Freight Planner)

Data to incorporate in Feasibility Studies

- Southeast Land Use (Pima County)
- Valencia Road Study (Pima County)
- Northwest Area Plan (Karen Lamberton, Cochise County Transportation Planner)

Agencies to add to Stakeholder List:

- Border Patrol
- Tucson International Airport
- SEAGO

Signed: Brad Olbert

Brad Olbert, PE, Project Manager

I-10, Junction I-19 to Empirita TI, Site Review Meeting Notes (July 21, 2010)

SITE REVIEW MEETING NOTES

I-10, JUNCTION I-19 TO EMPIRITA TI

Project No. 010 PM 260 H7825 01L

July 21, 2010

TO: **Site Review Meeting Attendees**

Tim Wilson, ADOT Roadway Predesign Section, MD 605E
Billah Khan, ADOT Roadway Predesign Section, MD 605E
Daniel Granillo, ADOT Tucson District Project Development, MD T168
Robin Raine, ADOT Tucson District Statewide Project Management, MD T100
Reza Karimvand, ADOT Tucson District Traffic, MD T120
Kathy Boyle, ADOT Intergovernmental Affairs, MD 118A
Aryan Lirange, FHWA Area Engineer, 4000 N. Central Ave., Suite 1500, Phoenix, AZ 85012
Damon Ballesteros, Pima County Project Manager, 201 N. Stone Ave., Tucson, AZ 85701
Robert Young, Pima County Transportation System, 201 N. Stone Ave., Tucson, AZ 85701
Kathy Jirschele, Kaneen P.R., Community Outreach, 110 S. Church Ste. 3350, Tucson, AZ 85701
Liz Beamer, Kaneen P.R., Community Outreach, 110 S. Church Ste. 3350, Tucson, AZ 85701
Mike Dawson, EcoPlan Associates, 78 W. Cushing St., Tucson, AZ 85701
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Brad Olbert, Jacobs, 101 N. First Ave., Ste. 3100, Phoenix, AZ 85003
Roland Cook, Jacobs, 101 N. First Ave., Ste. 3100, Phoenix, AZ 85003
Betsi Phoebus, Jacobs, 101 N. First Ave., Ste. 3100, Phoenix, AZ 85003
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Paul Black, Jacobs, 101 N. First Ave., Ste. 3100, Phoenix, AZ 85003
Oscar Oliden, Jacobs, 101 N. First Ave., Ste. 3100, Phoenix, AZ 85003
Adina Alpert, Jacobs, 101 N. First Ave., Ste. 3100, Phoenix, AZ 85003
Vanessa Quinto, Jacobs, 101 N. First Ave., Ste. 3100, Phoenix, AZ 85003

Not in Attendance

Todd Emery, ADOT Tucson District Engineer, MD T100
Jerry James, ADOT Tucson District Assistant District Engineer, MD T100
Linda Ritter, ADOT Tucson District Communication and Community Partnerships, MD T100
Rod Lane, ADOT Tucson District Development / Maintenance Engineer
Paul Baumgardt, ADOT Environmental Planning Group, MD EM02
Karim Rashid, ADOT Traffic Design Team, MD 063R
Tom Marinez, ADOT Tucson District Transportation Engineering Specialist, MD T120
Ayman Ghadban, ADOT Tucson District Utility Engineer Coordinator, MD T100
Bill Harmon, ADOT Safford District Engineer, MD S400
Tom Engel, ADOT Safford District Maintenance Engineer, MD S400
Robert Travis, ADOT Utilities & Railroads, MD 618E
Chris Cooper, ADOT Roadway Design, MD 615E
Reed Henry, ADOT Support Team Manager, MD 615E
Pete Mayne, ADOT R/W Project Management Section Coordinator, MD 612E
Teresa Welborn, ADOT Communications & Community Partnerships, MD T118A
J.J. Liu, ADOT Geotechnical Operations, MD T068R
Pe-Shen Yang, ADOT Bridge Design Service, MD 612E
Paul Burch, ADOT Pavement Design Section, MD 068R
Javed Bari, ADOT Pavement Design Section, MD 068R
Chong-Tai Chyan, ADOT Photogrammetry and Mapping, MD 203P
Virgil Coxon, ADOT Chief Surveyor, MD 203P
Jim Wilson, ADOT Geotechnical Design Engineer, MD 068R
Leroy Brady, ADOT Roadside Development, MD 617E
Shajed Haque, ADOT Roadway Drainage Design, MD 634E
Estomih Kombe, ADOT Transportation Research Project Manager, MD 075R
Debbie Mayfield, ADOT Priority Programming Section, MD 310B
Marta Raiford, ADOT Roadway Predesign Section, MD 605E
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Ben Goff, Pima County Transportation System Director, 201 N. Stone Ave., Tucson, AZ, 85701
Albert Letzkus, Pima County Traffic Engineering Div. Manager, 1313 S. Mission Road, Tucson, AZ, 85713
Jim Glock, City of Tucson Transportation Director, 201 N, Stone Ave., Tucson, AZ 85701
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Nanette Pageau, Kaneen Advertising & Public Relations Inc., Public Relations Director, 110 S. Church Ave., Suite 3350, Tucson, AZ 85701
Benny Young, Cochise County Highway and Floodplain, 1415 Melody Lane, Bldg. G, Bisbee, AZ 85603
Richard Salaz, City of South Tucson, Transportation and Flood Control, 1601 South 6th Ave., Tucson, AZ 85713
Joel Gastelum, City of South Tucson Planning, 1601 South 6th Avenue, Tucson, AZ 85713
Michael Toriello, Davis-Monthan AFB, 3791 S. 3rd Street, Davis-Monthan AFB, AZ 85707
Darren Horstmeier, Davis-Monthan AFB, 3791 S. 3rd Street, Davis-Monthan AFB, AZ 85707
Aziz Aman, Union Pacific Railroad
Zoe Richmond, Union Pacific Railroad
Geoff Slater, Nelson/Nygaard Consulting, 116 Pine Tree Ln. Fayston, VT 05673
Jeff Holzmeister, J2 Engineering, 4646 W. Cotton Gin Loop, Phoenix, AZ 85040

FROM:

Brad Olbert, Jacobs, 101 North First Avenue, Suite 3100, Phoenix, Arizona 85003

SUBJECT:

SITE REVIEW MEETING NOTES
I-10, Junction I-19 to Empirita TI
Project No. 010 PM 260 H7825 01L
I-10 / Barraza-Aviation Pkwy (SR 210)
Feasibility Reports and Environmental Overviews

INTRODUCTION

The Site Review Meeting for this project was held at 1:00 PM July 21, 2010 at the City of Tucson Fire Central Station, Training Room. The Meeting was scheduled to end at 3:00 PM but it was extended to 3:30 PM. The project Kickoff Meeting took place in the morning from 9:30 AM to 11:00 AM. The project overview, work to date, project communication, schedule, and project key issues were presented by Jacobs Engineering. Input from Stakeholders into general issues and factors that have to be considered in implementing the project was requested.

During the Site Review Meeting, Jacobs presented the study corridor for the Barraza-Aviation Parkway extension (Golf Links Road to Rita Road) and TI's along the I-10 Corridor from I-19 to SR 90. Detail information from Stakeholders was requested for each segment and traffic interchange. The topics of discussion were: environmental, traffic, drainage, structure, agency coordination, future development and other.

The meeting was well represented by agencies having interests in improving the I-10 corridor from junction I-19 to SR 90 and improving the Aviation-Barraza Parkway. Agencies include: Federal Highway Administration (FHWA), ADOT Predesign, ADOT Tucson District, ADOT Safford District and Pima County. All Stakeholders provided critical information for the success of the project.

SUMMARY

Paul Black, Jacobs Roadway Engineer, opened the Site Review Meeting with the project overview and the project study limits. Paul presented the topics of discussion and asked for Stakeholder feedback on each segment and traffic interchange.

The Barraza-Aviation Parkway (SR 210) limits of study begin at Golf Links Road, which is the easterly end of existing SR 210. The study will identify and evaluate alternative alignments for the extension and alternative locations for the connection to I-10. For parkway extension alternatives, the corridor discussion was limited to area between Golf Links Road (Alvernon Way) to Rita Road bounded by Davis-Monthan AFB on the north and I-10 Corridor on the south. This study area was presented in three segments during the discussion:

- SR 210, Segment 1: Area from Golf Links Road to Irvington Road
- SR 210, Segment 2: Area from Irvington Road to Valencia Road
- SR 210, Segment 3: Area from Valencia Road to Rita Road.

I-10 Corridor Study includes I-10 from Junction I-19 to Empirita Road with a possible extension to SR 90. The I-10 Corridor was presented in six segments and each individual traffic interchange was discussed. The six segments presented for the I-10 were:

- I-10, Segment 1: I-19 to Alvernon Way
- I-10, Segment 2: Alvernon Way to Kolb Road
- I-10, Segment 3: Kolb Road to Houghton Road
- I-10, Segment 4: Houghton Road to SR 83 Road
- I-10, Segment 5: SR 83 to Empirita Road
- I-10, Segment 6: Empirita Road to SR 90

Barraza-Aviation Parkway (SR 210)

SR 210, Segment 1: Area from Golf Links Road to Irvington Road

- Land-lock on the north due to Davis-Monthan AFB.
- Limited access and limited connection east of Golf Links Road.
- It is surrounded by commercial / industrial neighborhoods south and west of Alvernon Way. Attendees were not aware of planned development throughout the study area.
- Barraza-Aviation Parkway is not currently used as a truck route. It can become a truck route if connected to I-10.
- ADOT Tucson District prefers limited access to the Parkway (to remain signalized).
- Most of the existing traffic pattern flows east-west at Golf Links Road. Golf Links Road becomes Alvernon Way at the eastern end of Barraza-Aviation Pkwy. Alvernon Way carries traffic north-south to Ajo Way. There is an existing eastbound triple left turn at the intersection of Alvernon Way and Ajo Way.
- Alvernon Way (north of Golf Links Road) becomes Palo Verde Road. Alvernon Way / Golf Links Road were built 25 years ago. Prior to this, Palo Verde Road used to be the main north-south corridor in the area.
- Due to pinch point between railroad and Davis-Monthan AFB at Barraza-Aviation Parkway and Golf Links / Alvernon Way, it may not be able to provide full movement ramps in this traffic interchange. Golf Links Road intersection falls inside the area where Davis-Monthan AFB has security and flight restrictions.
- To maintain security at Davis-Monthan AFB, Barraza-Aviation Parkway needs to be depressed at the intersection at Alvernon Way.
- A petroleum tank farm is located west of Alvernon Way and north of Ajo Way. High pressure petroleum lines (Kinder Morgan and EPNG) parallels the railroad.

SR 210, Segment 2: Area from Irvington Road to Valencia Road

- Barraza-Aviation Parkway extension alignment will have to cross railroad tracks in this segment.
- Developer considering future commercial / industrial site in the area bounded by I-10, Valencia Road, Drexel Road and Craycroft Road.
- The planning area illustrated in the Power Point presentation included part of power plant south of Irvington Road. Alternatives should avoid the power plant.
- Drainage sheet flows south-east of Valencia Road curve. Julian Wash channelizes flow as it approaches Valencia Road. No flooding issues in this area.

SR 210, Segment 3: Area from Valencia Road to Rita Road

- Several developments are taking place near I-10 and Kolb Road. Traffic Impact Analysis (TIAs) for these developments are available. Reza Karimvand, ADOT Southern Regional Traffic Engineer, can provide copies of TIAs. The existing bridge at Kolb Road TI has capacity for these developments but improvements to ramps are necessary.
- PAG model shows Kolb Road as the main north-south parkway. Wilmot Road and Rita Road are arterial roads.
- Drainage issues along the north side of I-10 through this segment.

- Most of congestion begins at Houghton Road. Should consider connecting Barraza-Aviation Parkway to I-10 at Houghton Road instead of Rita Road.
- Littletown area is residential / City park / elementary school.
- New development at the northeast corner of Craycroft Road and I-10.
- FHWA suggested the team consider alternatives for the Barraza-Aviation Parkway extension that includes a connection to I-10 near Alvernon Way and an alternative that takes the corridor to the south side of I-10 through an underpass instead of a TI. It may be that the best alternative is to widen I-10 instead of a parallel facility to I-10.
- Pima County is improving Valencia Road to a six lane road. Valencia Road will become the east-west facility from Houghton Road to I-10.

I-10

Overall comments from FHWA:

- Parallel ramps are preferable to tapers. Auxiliary lanes were also suggested during the discussion.
- Access control is a key element to each TI, especially at crossroads and frontage roads.
- Consider rebuilding or relocation of existing TI's.
- Consider new connection TI at Vail Road, east of Houghton Road. Vail Road connects Valencia Road to Houghton Road. It runs north-south approximately one mile west of Rita Road then turns east-west parallel to I-10 becoming Mary Ann Cleveland Way east of Houghton Road.
- Vertical clearances should meet current design standards.
- HOV lane consideration – ADOT has not discussed HOV lanes because of right-of-way constraints. Reza Karimvand said if HOV lanes can not be considered in downtown area, they should be considered east of downtown. HOV lanes should be considered as far east as Houghton Road, Mescal Road or even SR 90. There might also be constraints in the east due to existing frontage roads. Phoenix HOV lane model should be considered in the study (striping only, becoming a regular lane during off-peak hours). ADOT Predesign agrees with the HOV lane study. This is a good opportunity to include HOV lanes in our study.

I-10, Segment 1: I-19 to Alvernon Way

Kino Parkway TI:

- Very old and complicated TI as it provides access to Kino Parkway and Ajo Way. All Stakeholders would like to remove loop ramps and modernize intersection.
- New development on the northwest corner of Kino Parkway TI: University of Arizona research facility and Costco.
- Kino Parkway is the main access to Tucson International Airport. Traffic from EB I-10 needs to weave three lanes from I-10 eastbound off-ramp to turn left into Benson Hwy, then Tucson Boulevard southbound to access Tucson International Airport. Study should consider improvements at the Kino Parkway TI and surrounding streets to facilitate airport traffic.
- A significant portion of northbound traffic at Kino Parkway (north of I-10) makes a U-turn to get into I-10 westbound instead of using the TI loop east of Kino Parkway.
- Kino Sports complex is no longer being used by the Arizona Diamondbacks for spring training.

Palo Verde Road TI:

- This TI is less than one mile from Alvernon Way. Previous URS study suggested removing this TI and relocating it to Country Club Road.
- Previous URS study interviewed business owners near Palo Verde Road. Business owners did not have problems relocating the TI as long as they have a frontage road to access business.

Alvernon Way TI:

- Alvernon Way TI is a three leg diamond TI due to space limitations (less than one mile away from Palo Verde Road TI). This type of TI is dysfunctional and causes confusion to EB I-10 motorists. Other TI options should be considered.

I-10, Segment 2: Alvernon Way to Kolb Road

General comments for Segment 2:

- Frontage Road from Valencia Road to Kolb Road is mainly used for local business access. ADOT prefers removing frontage road from this area. If eliminated, business will still have access thru local streets.

Valencia Road TI:

- The Valencia Road project will widen Valencia Road from Alvernon Road to Wilmot Road to three lanes each direction. Future study includes Valencia Road from Wilmot Road to Kolb Road and will eventually widen Valencia Road to three lanes each direction in this area also. The Valencia Road Study project proposes temporary improvements at I-10 / Valencia Road TI similar to the I-10 / Cortaro Road TI, where the slope paving under the bridge is cut back to allow additional lanes outside the existing piers. Ultimate TI configuration should be studied in the Feasibility Study.

Craycroft Road TI:

- Drainage issues around Craycroft Road TI and also along I-10 from Craycroft Road to Wilmot Road.
- New commercial development approved by Pima County on the northeast corner of I-10 and Craycroft Road TI.

Kolb Road TI:

- Rosemont Mine currently runs trucks from SR 83 and exiting at Kolb Road. Not sure if the ultimate destination is the rail port at Kolb Road. Jacobs to follow up.

I-10, Segment 3: Kolb Road to Houghton Road

Houghton Road TI:

- City of Tucson and Pima County have plans to improve Houghton Road north of I-10.
- Westcor Development is planning a large residential development along Houghton Road north of I-10.
- Pima County Fairgrounds and Corona del Tucson (growth area) to the south of I-10 should also be considered in the Feasibility Study.
- Houghton Road is also an important access to Sahuarita Road (future major east-west corridor).
- Feasibility Study should also consider fixing the S curve on Houghton Road south of I-10.
- Previous 2003 Houghton Road study indicated flyover ramp needed for left turn movements.

I-10, Segment 4: Houghton Road to SR 83 Road

- An issue through this segment is truck traffic on SR 83.
- The SR 83 TI should be reconfigured from a trumpet to modern TI standards. FHWA would like to consider phasing I-10 / SR 83 junction as a priority to the project. TI design should consider future expansion to the north by extending road to Frontage Road (similar concept to most recent design on SR 90).
- FHWA desires open median in rural section of the I-10. ADOT does not foresee any issues with an open median in the rural area even with 5 lanes in each direction on I-10.

I-10, Segment 5: SR 83 to Empirita Road

Marsh Station Road TI

- I-10 Segment from SR 83 to Marsh Station Road has many environmental concerns (conservation area: Cienega Creek and State Land)
- Marsh Station Road TI is being upgraded to standard TI under current improvements.
- The railroad will be realigned to the north side of I-10 and both railroad crossings on I-10 will be removed (west crossing near Marsh Station Road is an overpass with low clearance).

Empirita Road TI

- Empirita Road TI serves ranches; no development is planned in this area.

I-10, Segment 6: Empirita Road to SR 90

Mescal Road / J Six Ranch Road TI

- Planned development near this TI was declined by the County. Currently land for sale.
- Structural issues at this TI. Needs improvements.

Skyline Ranch TI

- Ranches are on both sides of I-10. A one-lane underpass was built for cattle movement when the TI was built. Suggestion to upgrade underpass and to address structural issues in this TI were given by several agencies.
- Connection to frontage road on the south is very short and roadway radiuses run into each other. A greater separation to the frontage road was suggested.

SR 90

- Design for I-10 improvements at SR 90 TI was recently completed by URS. Jacobs to contact URS to coordinate improvements (URS contact: Jody Rodriguez).

ACTION ITEM LIST

Jacobs to follow up with the following proposed developments:

- Commercial / Industrial Development bounded by I-10, Valencia Road, Drexel Road and Craycroft Road (City of Tucson).
- Developments near I-10 and Kolb Road TI. ADOT has Traffic Impact Analysis available (Reza Karimvand, ADOT Regional Traffic Engineer)
- University of Arizona Research Facility and Costco at the northwest corner for I-10 and Kino Parkway TI (City of Tucson).
- Development at northeast corner of I-10 and Craycroft Road TI (City of Tucson)
- Westcor Residential Development along Houghton Road north of I-10 (City of Tucson)

Items to consider in Feasibility Studies:

- HOV lane consideration along I-10.
- Pima County Fairgrounds and Corona del Tucson (Houghton Road south of I-10 neighborhood).

Signed: Brad Olbert
Brad Olbert, PE, Project Manager

I-10, Jct I-19 to Empirita TI, Traffic Modeling & Operations Meeting Notes (August 11, 2010)

TRAFFIC MODELING & OPERATIONS MEETING NOTES

I-10, JCT I-19 TO EMPIRITA TI

Project No. 010 PM 260 H7825 01L

August 11, 2010

TO: **Kickoff Meeting Attendees**
Reza Karimvand, ADOT Tucson District Traffic, MD T120
Aryan Lirange, FHWA Area Engineer, 4000 N. Central Ave., Suite 1500, Phoenix, AZ 85012
Don Freeman, PAG Technical Services Coordinator, 177 N. Church St., Suite 405, Tucson, AZ 85701
Aichong Sung, PAG, 177 N. Church St., Suite 405, Tucson, AZ 85701
Minyan Ruan, PAG, 177 N. Church St., Suite 405, Tucson, AZ 85701
Andy McGovern, City of Tucson Dep. of Transportation Eng., 201 N. Stone Ave, Tucson, AZ 85701
Robert Young, Pima County Transportation System, 201 N. Stone Ave., Tucson, AZ 85701
Brad Olbert, Jacobs, 101 N. First Ave., Ste. 3100, Phoenix, AZ 85003
Patricia Gonella, Jacobs, 101 N. First Ave., Ste. 3100, Phoenix, AZ 85003
Shanthi Krishnan, Jacobs, 101 N. First Ave., Ste. 3100, Phoenix, AZ 85003
Karen Lamberton (Conference Call), Cochise County Transportation Planner, 1415 Melody Lane, Bldg. G, Bisbee, AZ 85603

Not in Attendance
Billah Khan, ADOT Roadway Predesign Section, MD 605E
Karim Rashid, ADOT Traffic Design Team, MD 063R
Tom Martinez, ADOT Tucson District Transportation Eng. Specialist, MD T120
Shafiqul Islam, ADOT Tucson District, MD T100
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Jim Glock, City of Tucson Transportation Director, 201 N. Stone Ave., Tucson, AZ 85701
Mary Collins, City of Tucson Assist. Transportation Director, 201 N. Stone Ave., Tucson, AZ 85701

FROM:
Brad Olbert, Jacobs, 101 North First Avenue, Suite 3100, Phoenix, Arizona 85003

SUBJECT:
AUGUST TRAFFIC MODELING & OPERATIONS MEETING NOTES
I-10, JCT I-19 to Empirita TI
Project No. 010 PM 260 H7825 01L
I-10 / Barraza-Aviation Pkwy (SR 210)
Feasibility Reports and Environmental Overviews

MEETING INFORMATION:
Location: ADOT Tucson District
Date/Time: August 11, 2010 – 1:00 pm to 3:00 pm

GENERAL SUMMARY:

The traffic modeling discussion meeting for the I-10 and Barraza-Aviation Pkwy (SR210) Feasibility Studies project started at 1:00 PM and concluded at 3:30 pm. Brad Olbert, Jacobs Project Manager gave an overview of the status of the project after introductions.

Brad Olbert briefed the group that the east termini was addressed in the Project Kickoff meeting on July 21, 2010, and received consensus from the attending agencies to extend project limit to SR 90. Jacobs is in the process of developing the scope and fee for the additional effort. The main goal of this meeting was to discuss the PAG model and the three levels of roadway improvements and decide what assumptions should be carried forward that was acceptable to all the agencies.

The following key items were discussed during the meeting:

1. **PAG 2040 MODEL:**
   - Don Freeman pointed out that the three levels of improvements are included in the 2040 PAG model. Aichong clarified that they are provided as different layers.
   - Don Freeman shared with the group that in the 2040 RTP, 50% of the build out is assumed to be in place for the Southeastern portion of the PAG Planning Area. He also shared that there is a 'planning group' known as "Imagine Greater Tucson" that is comprised of business leaders, planners, consultants and various agency staff who have been conducting planning efforts for the region as a whole. The planning group estimated the region will have 2 million people by the year 2060. At the same time the Southeast Area will have approximately 600,000 people.
   - PAG recommended that the 2040 adopted model be used including the 'approved' and 'reserved' projects. The agencies – PAG, City of Tucson, ADOT & FHWA all agreed with the recommendation. This model was adopted by PAG in July 2010.
   - Patrizia shared a few maps that showed the projects influence area, PAG's approved and reserved projects. PAG recommended that the influence area to the east be modified to include additional area west of Houghton Road and north of I-10.

2. **TRAFFIC DATA COLLECTION:**
   - PAG to share data on I-10, east of SR83 from counts done in 2008 and 2009.
   - PAG to mail CD with historic data (traffic counts) to Jacobs.
   - PAG suggested we check with United Civil group (UCG) as they had recently completed a project for the Multi-Modal Planning Group at ADOT for any traffic data in the area.

3. **COCHISE COUNTY:**
   - Karen Lamberton joined the meeting via conference call. She is the County Transportation Planner for Cochise County.
   - Karen Lamberton shared that they have the Cochise County-wide traffic model is available in QRS II. She also mentioned that the Northwest Area Plan will be finalized August 31st, 2010.
   - The Profile Study conducted at SR90 by ADOT is also included in the Northwest Area Plan.
   - She asked to contact her if we need crash data for that stretch or any other reports for that area.
   - Some of the highlights of the Northwest Area Study that Karen wanted the project team to address include:
     - The Mescal/J6 TI has safety/sight distance issues which have been identified. If recommendations are made for this TI they would like to obtain a cost estimate for the proposed improvements to mitigate the safety concerns.
     - The Skyline TI has very short ramps that do not meet the current design standards. Cochise County and the public are open to the idea of eliminating this interchange and potentially combining the interchanges of Mescal/J6 and Skyline into a brand new traffic interchange that meets ADOT's standards.
     - Drainage is a big issue at the Skyline TI.
     - A frontage road on the north side of I-10 in this area from Marsh Station to SR90 appears to be a good solution that merits to be addressed by this project.
     - If the Mescal/J6 TI is removed the bridge could possibly remain as a crossover.
   - ADOT (Reza Karimvand) and Cochise County (Karen Lamberton) suggested that the SR90 TI be included in the traffic modeling and analysis. Per ADOT and Cochise County, the current design improvements for the SR90 TI (that are currently out to bid) address safety, sight distance and re-alignment issues and not capacity.

4. **GENERAL:**
   - FHWA expressed their concern at the I-10/Alvernon TI as this might warrant a system to system TI. FHWA suggested evaluating if the TI is better as a Service TI or a System-to-System TI.
   - FHWA mentioned that one of the studies had recommended the Palo Verde TI to be removed.

5. **ACTION ITEMS:**
   - Reza Karimvand requested that Jacobs put together a matrix comparing the 2040 RTP from PAG versus the assumed projections.
   - PAG to verify if the 'reserved' projects list available on their website is the latest and current. PAG to verify internally and confirm to the project team.
   - Reza Karimvand to provide locations of traffic counts in the eastern section of the project.
   - Karen Lamberton to send the Cochise County Modeling information and the reports to Brad Olbert at Jacobs.

6. **FOLLOW UP:**
   - Subsequent to the meeting, Jacobs obtained a set of plans for the SR 90 TI Improvements. Construction of the improvements will begin shortly. The plans show the TI is being completely reconstructed with I-10 having three (3) lanes eastbound and four (4) lanes westbound. The eastbound off ramp will be constructed with two (2) lanes. I-10 2030 AADT was listed as 71,000 vpd and SR 90 AADT at 50,000 vpd. Recommend Milepost 302.25 for project eastern termini.

Signed: Brad Olbert
Brad Olbert, PE, Project Manager

I-10, Junction I-19 to Empirita TI, Sun Tran Meeting Notes (August 22, 2010)

SUN TRAN MEETING NOTES

I-10, JUNCTION I-19 TO EMPIRITA TI

Project No. 010 PM 260 H7825 01L

August 22, 2010

TO: **Meeting Attendees**
Mary McLain, Sun Tran Assistant General Manger
Bob McGee, Sun Tran Director of Scheduling and Service Development
Geoff Slater, Nelson\Nygaard Consulting Associates

Not in Attendence
Brad Olbert, Jacobs Engineering
Shanthi Krishnan, Jacobs Engineering

FROM:
Geoff Slater, Nelson\Nygaard

SUBJECT:
TRANSIT OPPORTUNITIES MEETING NOTES
I-10, Junction I-19 to Empirita TI
Project No. 010 PM 260 H7825 01L
I-10 / Barraza-Aviation Pkwy (SR 210)
Feasibility Reports & Environmental Overviews

INTRODUCTION

The meeting was held to discuss future Tucson-area transit plans, opportunities, and services, and how future services could use I-10, Aviation Parkway, and a connection between the two. The meeting was held at Sun Tran.

SUMMARY

Geoff Slater presented a brief overview of the study and explained that it will be desirable to develop I-10 and Barraza-Aviation Parkway improvements in a manner that could make transit more effective. This could include elements and measures such as park-and-ride/commuter parking lots, Bus Rapid Transit elements, transit stations, etc.

Geoff Slater, Mary McLain, and Bob McGee then discussed various transit plans and proposals as they related to this project, which were as follows:

Regional Transportation Authority (RTA) Transportation Plan

The RTA's 20-Year Plan, which is funded with ½¢ excise tax revenues, includes (see also Attachment 1):

- **Express Bus between Houghton Road and Downtown:** Express bus service between a new park-and-ride lot at Old Vail Road and Houghton Road and downtown Tucson via I-10. This is programmed as a "1st Period," or short-term project.

Pima Association of Governments (PAG) 2040 Regional Transportation Plan (RTP)

PAG's 2040 RTP includes new express bus and BRT services that would operate along I-10 and across the corridor (see Attachment 2):

- **Bus Rapid Transit (BRT) along I-10 between Wentworth Road and downtown Tucson:** Plans for this service are conceptual in nature, as detailed planning has not been conducted to determine how it would operate within I-10, station/stop locations, or service frequencies.
- **BRT Between Southeast Tucson and Downtown:** This service would connect developing areas in southeast Tucson with downtown and could potentially use I-10 and SR 210.
- **New Express Bus Services:** Express bus services are proposed for the Kolb Road and Valencia Road corridors. These services are also conceptual in nature, but could connect with I-10 BRT at Valencia Road.

PAG High Capacity Transit System Plan

PAG's fiscally-constrained High Capacity Transit Implementation Plan includes both express bus and BRT on I-10 (see Attachment 3):

- **Express Bus along I-10 between Vail and downtown Tucson:** Express bus would be implemented along I-10 between Vail and downtown Tucson in the short-term (1 to 10 years out) as a precursor to BRT (see next bullet). This service could also use SR 210.
- **Bus Rapid Transit (BRT) along I-10 between Vail and downtown Tucson:** As demand grows, express bus between Vail and Tucson would be upgraded to BRT. Service would operate either between Vail Road or Houghton Road and downtown Tucson. Plans for this service are also conceptual in nature. This is planned as a mid-term (10-20 years out) project. As with express bus, this service could also use SR 210.

No detailed planning has yet been done for any of these projects, and the discussion then focused around what would be desirable. Desirable elements to make express bus and BRT work effectively would include:

- **Transit priority measures** along the connection between I-10 and SR 210 Depending upon the design of the roadway, these could include transit signal priority, bus lanes or bus use of HOV lanes, etc. (Sun Tran does not envision stations or stops along SR 210).

- **Park-and-Ride Lots** at major interchanges on I-10 and possibly SR 210, and at least as far east as Houghton Road.
- **In-Line Stations/Stops** on I-10 so that buses don't have to exit the freeway to pick-up and discharge passengers (see figure below). These stations would also require efficient pedestrian circulation between park-and-ride lots/surface streets and the stations.
- **Bus/BRT Use of HOV Lanes**, which would require either the use of center in-line stations, or bus ramps at intersections with off-line stations or stops (where general purpose on and off-ramps don't exist).
- **Transit Centers:** Transit centers would also be desirable at key locations along I-10 where I-10 transit service would connect to other major services and to provide park and ride opportunities. One potential location would be South Kino Parkway at I-10, which is planned to be a connecting point between two BRT lines, and Valencia Road. Transit centers would also provide connections with local bus services.

Example of In-Line Station

Finally, Sun Tran representatives raised the question as to who would maintain transit facilities developed along I-10.

I-10, Jct I-19 to SR 90, Utility Coordination Meeting Notes (September 27, 2010)

UTILITY COORDINATION MEETING NOTES

I-10, JCT I-19 TO SR 90

Project No. 010 PM 260 H7825 01L
Federal Project No. 010-E(210)A

September 27, 2010

TO: **Meeting Attendees**

Robin Raine, ADOT Tucson District Statewide Project Management, MD T100
Rod Lane, ADOT Tucson District Development / Maintenance Engineer
Daniel Granillo, ADOT Tucson District Project Development, MD T168
Ayman Ghadban, ADOT Tucson District Utility Eng. Coordinator, MD T100
Paul Sykes, ADOT Tucson District, Traffic Signals and Lighting
Bob Hunt, Pima Association of Governments, 177 N. Church St., Suite 405, Tucson, AZ 85701
Mike Hicks, City of Tucson DOT, Traffic Signal Supervisor, 4004 S. Park Ave., Tucson, AZ 85714
Paul Burton, City of Tucson DOT, Traffic Signal Supervisor, 4004 S. Park Ave., Tucson, AZ 85714
Armando Bracamonte, City of Tucson DOT, Traffic Signal Supervisor, 4004 S. Park Ave., Tucson, AZ 85714
Richard Rizzoli, City of Tucson DOT, Traffic Signal/Street Lighting Supervisor, 4004 S. Park Ave., Tucson, AZ 85714
Ivan Milenski, City of Tucson, Water Distribution Design, 310 W. Alameda St., Tucson, AZ 85701
Joe Rodriguez, City of Benson, Utility Location, 120 W. 6th St., Benson, AZ 85602
Kelly Fleenor, Southwest Gas Corporation, 3401 E. Gas Rd., Tucson, AZ 85714
Bill Biggs, El Paso Corporation, 5151 W. Broadway, Ste. 1680, Tucson, AZ 85711
Cynthia Garcia, Tucson Electric Power, 4350 E. Irvington Rd., Mail Stop DB101, Tucson, AZ 85714
Steve Sousa, Southwest Transmission Cooperative, Inc., P.O. Box 2195, Benson, AZ 85602
Jeff Krause, Cox Communications, 1440 E. 15th Street, Tucson, AZ 85719
Carlos Muniz, Level 3 Communications, 811 S. 16th Street, Phoenix, AZ 85034
Earl Winters, Qwest (Pima County), 333 E. Wetmore Rd., 3rd Flr., Tucson, AZ 85705
Alun Williams, Qwest (Cochise County), 1060 N. Guilio Cesare Ave., 3rd Flr., Sierra Vista, AZ 85635
Abe Peña, TW Telecom / X-Spedius Communications, 5210 W. Williams Cir #220, Tucson, AZ 85711
John Boise, Vail Water Company, 14155 W. Via Rancho Del Lago, Vail, AZ 85641
Eddie Morales, Mescal Lakes Water System, 2102 North Forbes, #107, Tucson, AZ 85745
Keith Dojaquez, Mescal Lakes Water System, 2102 North Forbes, #107, Tucson, AZ 85745
Brad Olbert, Jacobs, Project Manager, 101 N. First Ave., Ste. 3100, Phoenix, AZ 85003
Vanessa Quinto, Jacobs, Utility Coordinator, 101 N. First Ave., Ste. 3100, Phoenix, AZ 85003

Not in Attendance

Billah Khan, ADOT Roadway Predesign Section, MD 605E
Todd Emery, ADOT Tucson District Engineer, MD T100
John Rocha, ADOT Utility Coordinator, Safford District
Doug Alewelt, City of Tucson Facility Management, 4004 S. Park Ave., Bldg 2, Tucson, AZ 85714
Souren Naradikian, Pima County Wastewater, Utility Coordinator, 201 N. Stone Ave., 8th Floor, Tucson, AZ 85701

Kinder Morgan, Pipeline Inquiries
Robert Lewis, Sulfur Spring Valley Electric, 311 E. Wilcox Dr., Sierra Vista, AZ 85635
Joe Ryan, MCI, 220 W. Elm St., Tucson, AZ 85705
Colin Sword, Sprint, 401 W. Harrison St., Phoenix, AZ 85003
Rhonda Rosendaum, Ray Water Company, 404 N. Court Ave., Tucson, AZ 85701

FROM:
Brad Olbert, Jacobs, 101 North First Avenue, Ste. 3100, Phoenix, Arizona 85003

SUBJECT:
UTILITY COORDINATION MEETING NOTES
I-10, JCT I-19 to SR 90
Project No. 010 PM 260 H7825 01L
I-10 / Barraza-Aviation Pkwy (SR 210)
Feasibility Reports and Environmental Overviews

INTRODUCTION

The Utility Coordination Meeting for the I-10, Jct I-19 to SR 90 was held on September 27, 2010 starting at 9:30 AM and concluding at 10:30 AM. The meeting was held at ADOT Tucson District, District Conference Room. Jacobs introduced the project to all the Utility Agencies with facilities within the Interstate 10 and Barraza-Aviation Parkway project limits.

Agencies in attendance were: PAG, ADOT Tucson District, ADOT Traffic Signals and Lighting, City of Tucson DOT Traffic Signals and Lighting, City of Tucson Water, City of Benson Utilities, Tucson Electric Power (TEP), El Paso Natural Gas, Southwest Gas Corporation, Southwest Transmission Cooperative (SWTC), Cox Communications, Qwest Communications, Level 3 Communications, Vail Water Company and Mescal Lakes Water System. Agencies unable to attend were: City of Tucson Facilities, Kinder Morgan, Sulfur Spring Valley Electric (SSVE), Zapco Energy Tactics, MCI, Sprint, and Ray Water Company.

SUMMARY

Brad Olbert, Jacobs Project Manager, opened the Utility Coordination Meeting with a brief description of the project and described the I-10 and Barraza-Aviation Parkway (also known as State Route 210, SR 210) study limits. Following the brief project description, Brad Olbert introduced Vanessa Quinto, Jacobs Utility Coordinator, to all the utilities then conducted self-introductions of all the attendees. Detail information was provided for the project objectives, overview, schedule and communications. Brad also covered the requested material Jacobs would like to obtain from the utilities to include in the project study. Opportunity was given for each utility present to ask questions about the project, to provide information on their utility maps, to present potential utility conflicts and to share future advance planning.

The I-10, Jct I-19 to SR 90 project consists of two segments: widening of the I-10 from its junction with I-19 to SR 90 and extension of the Barraza-Aviation Parkway. At the Utility Coordination Meeting, the project limits for the I-10 were from I-19 to Empirita Road TI and waiting for a change order to extend the eastern terminus to SR 90. Following the meeting, the eastern terminus was changed to SR 90. The official revised name is **I-10, Jct I-19 to SR 90** and the project milepost (MP) along the I-10 is from **MP 260 to MP 302.25**. The Barraza-Aviation Parkway extension consists of the extension of its easterly end near Alvernon Way/Golf Links Road to a connection point to be determined with I-10. The study area for the Barraza-Aviation Parkway extension consist of the I-10 on the south, Davis-Monthan on the north, Palo Verde Road on the west, and Rita Road on the east. An overall Study Area Exhibit and the Barraza-Aviation Parkway Study Area Exhibit was provided at the meeting and it is also attached to the meeting notes.

The project has of two phases: Phase I consists of two Feasibility Studies and Two Environmental Overviews (I-10 widening and extension of the Barraza-Aviation Parkway). Phase II consists of a Design Concept Report (DRC) and an Environmental Assessment (EA) for the I-10 project limits. Jacobs is currently contracted for Phase I of the study.

Phase I, Feasibility Studies and Environmental Overviews for the I-10 and Barraza-Aviation Parkway, is scheduled to be completed by summer of 2011. Phase II, DCR and EA for I-10, is schedule to be completed by summer of 2013.

This three-year planning study leads to an implementation plan for construction projects along I-10. The goal of this Utility Coordination Meeting was to open communications with the utilities at this early stage of the study, to identify potential utility conflicts and to work together during the planning phase. It is Jacobs' intensions to be as open and transparent in communications throughout the study. To facilitate communications, Jacobs created a Study Team website containing information about the project, meeting notes, exhibits and other references pertaining to the study. Information about the Study Team website is available in the attached project information sheets.

Jacobs also provided the utilities with the key project contacts for this project: Billah Khan, ADOT Predesign Project Manager; Ayman Ghadban, ADOT Utility Coordinator; Brad Olbert, Jacobs Project Manager; Gary Fromm, Jacobs Roadway Team Leader; and Vanessa Quinto, Jacobs Utility Coordination. Main points of contact for the project are Brad Olbert and Vanessa Quinto. Contact information is also available in the attached project information sheets.

Information on the Monthly Stakeholders Progress Meetings was also provided. All utilities are welcome to attend to follow up on the project progress or to bring up a discussion item during the open discussion period. The Monthly Stakeholders Progress Meetings are scheduled for the last Monday of each month from 1 PM to 3 PM at the ADOT Tucson District and concurrently in Phoenix and Safford via video conferencing. Addresses for the Phoenix and Safford locations will be available upon request.

Prior to this meeting, a letter was sent to all agencies requesting utility maps and information on existing and future facilities. Jacobs received utility maps from Cox Communications, SSVE, Ray Water Company, TEP, El Paso Natural Gas, City of Benson, Vail Water Company and Qwest Communications. Thank you to all those agencies that provided utility maps. An opportunity was given to those utilities present to ask questions about the project, to provide information on their utility maps, to present potential utility conflicts and to share future advance planning. Comments are summarized below:

ADOT Signals and Lighting

Point of Contact: Paul Sykes (present at the meeting)

- ADOT is currently installing a fiber optic line from its Traffic Operation Center (TOC) to I-10/Valencia Road traffic interchange.
- ADOT would ultimately like ITS features extended to the SR 90 TI.
- ADOT will follow up internally as it is a regional discussion involving Pima and Cochise Counties.

- ADOT would also like to study the placement of dynamic message signs (DMS) and freeway management system (FMS). DMS and FMS are not part of the project scope of work but can be included if the information is provided to Jacobs at the DCR stage.

City of Tucson Traffic Signals and Lighting

Point of Contact: Mike Hicks (present at the meeting)
Other Representatives at the meeting: Paul Burton, Armando Bracamonte and Richard Rizzoli

- City of Tucson Traffic Signals would also like to consider DMS and FMS part of the study along the I-10 corridor as it is important to receive traffic information in this corridor with the increase of traffic volume.

City of Tucson Water

Point of Contact: Edward Lopez
Representative at the meeting: Ivan Milenski

- City of Tucson Water provides service along I-10 from I-19 on the west to Houghton Road on the east.
- There are several water crossings across the I-10, especially closer to its junction with I-19.
- City of Tucson also has water facilities in the Barraza-Aviation Parkway study area and some conflicts are anticipated with the extension.
- At Houghton Road is a 30-inch cased water crossing within ADOT's right-of-way.
- City of Tucson Water has quarter section maps available and will provide maps via email. Emaps are also available. Jacobs will follow up with City of Tucson Water to obtain quarter section maps.
- *Update: Jacobs received quarter section maps on September 29, 2010 from City of Tucson Water.*

City of Tucson Facilities

Point of Contact: Doug Alewelt
No representative attended the Utility Coordination Meeting on behalf of City of Tucson Facilities.

- Jacobs will follow up with City of Tucson Facilities. Per phone conversation with Doug Alewelt prior to the meeting, no parks/facilities are anticipated to be in conflict with ADOT right-of-way along the I-10 study corridor. There are some areas of potential impacts on the Barraza-Aviation Parkway study area.

Pima County Wastewater

Point of Contact: Souren Naradikian
No representative attended the Utility Coordination Meeting on behalf of Pima County Wastewater

- Jacobs was able to contact Souren Naradikian prior to the Utility Coordination Meeting. Mr. Naradikian was unable to attend the meeting but directed Jacobs with the Pima County GIS website - Pima County MapGuide Maps. As-built drawings for Pima County wastewater facilities can be found in the link provided: http://dot.pima.gov/gis/maps/mapguide/

City of Benson Utilities

Point of Contact: Joe Rodriguez (present at the meeting)

- City of Benson has water and sewer facilities on the south side of the I-10 / SR 90 junction.
- Joe Rodriguez provided a map to Jacobs during the meeting.
- Water / Sewer information provided in the map:
  - A 12-inch water line is located on the Frontage Road parallel to the existing southbound ramp from I-10 to SR 90.
  - A 12-inch water line is also located 400-feet south of the intersection at St. Andrews Drive.
  - The sewer line is also located 400-feet south of the intersection at St. Andrews Drive, then approximately 200-ft south of the I-10 east of SR 90.
- Potential water/sewer improvements maybe constructed with the SR 90 TI improvements. Construction will start soon. Jacobs will follow up with this project and with City of Benson as the project advances.

Kinder Morgan

No representative attended the Utility Coordination Meeting on behalf of Kinder Morgan

- Jacobs requested information on Kinder Morgan's facilities thru its Pipeline Inquiries process. No representative has been assigned to this project as of the Utility Coordination Meeting date.

Tucson Electric Power (TEP)

Point of Contact: Cynthia Garcia (present at the meeting)

- TEP has 23 power line crossings along the I-10 study limit; most of them are overhead power lines ranging from distribution to transmission lines.
- TEP's Power Plant is located north and east of ADOT's right-of-way on the northeast corner of I-10/Alvernon Way TI.
- An important point of entry to TEP's facilities is a locked gate located near Vail.
- TEP has future plans of adding transmission facilities east of the existing Barraza-Aviation Parkway. This project provides the opportunity to coordinate the power line and parkway extension.
- Significant utility conflicts with TEP are expected with the I-10 widening and the Barraza-Aviation Parkway extension. Future coordination between Jacobs and TEP will be needed as project progresses.
- Cynthia Garcia provided full size utility maps to Jacobs during the meeting.

El Paso Natural Gas

Point of Contact: Bill Biggs (present at the meeting)

- El Paso Natural Gas has high distribution gas lines paralleling the I-10 and may have utility conflicts depending on the right-of-way widening along the I-10.
- Distribution gas lines are:
  - Line 1007, 10 ¾-inch gas line, Tucson-Phoenix Line (parallel to Line 1008)
  - Line 1008, 10 ¾-inch gas line, Tucson-Phoenix Look Line (parallel to Line 1007)
  - Line 1100, 26-inch gas line, California Line (parallel to Line 1003)
  - Line 1103, 30-inch gas line, California First Loop Line (parallel to Line 1100)
- Distribution lines 1007 and 1008 cross I-10 near the Pima County – Cochise County line.
- Distribution lines 1100 and 1103 cross I-10 east of Empirita Road TI
- In addition to the parallel distribution lines, two additional gas lines cross I-10:
  - Line 2110 at Alvernon Way
  - Line 1015 between Wilmot Road and Kolb Road
- Gas Lines 1007 and 1008 fall inside the Barraza-Aviation Parkway study area.
- Bill Biggs provided an overview map with pipelines along the I-10 Corridor study area during the meeting.

Southwest Gas Corporation

Point of Contact: Kelly Fleenor (Present at the meeting)

- Southwest Gas Corporation has gas lines that parallel and cross the I-10 study area.
- Southwest Gas Corporation has quarter section maps available and will be provided to Jacobs.

Southwest Transmission Cooperative, Inc. (SWTC)

Point of Contact: Steve Sousa (Present a the meeting) and William Wells

- SWTC has a 32 kV overhead power line that crosses the I-10 near MP 296.
- SWTC Pantano Substation is located south of I-10. The access road to the substation is from I-10 at MP 288.6, located west of Marsh Station Road TI. This access road is also used by other utilities. SWTC expressed the importance of keeping this access road.
- SWTC provided an exhibit with location of the Pantano Substation and transmission line in this neighborhood. More maps are available and will be provided via email to Jacobs.

Sulfur Spring Valley Electric (SSVE)

Point of Contact: Robert Lewis

No representative attended the Utility Coordination Meeting on behalf of SSVE.

- Robert Lewis sent SSVE utility maps to Jacobs prior to the meeting and was unable to attend the meeting.
- SSVE has facilities near Marsh Station Road TI, Empirita Road TI, Mescal Road/J-Six Road TI, Skyline Road TI and near the SR 90 junction.

Zapco Energy Tactics

Point of Contact: Phillip Priebe

- Jacobs was not able to contact Phillip Priebe prior to the meeting. A voicemail was left for Mr. Priebe. Jacobs will follow up with Zapco Energy Tactics to research facilities in the study area and to request facility maps.

Cox Communications

Point of Contact: Jeff Krause (present at the meeting)

- Cox Communications has a fiber optic line north of I-10 and several crossings of I-10 within the study area.
- Cox Communications provided utility maps prior to the meeting.

Qwest Communications

Point of Contact: Earl Winters – Pima County (present at the meeting),
Alun Williams – Cochise County (present at the meeting)

- Qwest Communications has fiber optic lines within the study area. Utility maps were provided to Jacobs during the meeting.
- Qwest Communications is currently working with ADOT on the SR 90 TI improvements.
- No advance planning is available for the study area.

Level 3 Communications

Point of Contact: Carlos Muniz (present at the meeting)

- Level 3 Communications has facilities within the I-10 study area. Their facilities are located near Colossal Cave Road and Marsh Station Road. Additional fiber optic line crosses I-10 along with TEP power lines.
- Level 3 Communications does not have advance planning along this corridor at this time.
- Level 3 Communications has utility maps available and will be provided to Jacobs.

TW Telecom / X-Spedius Communications

Point of Contact: Tom Seeley

Representative at the Meeting: Abe Peña

- TW Telecom / X-Spedius Communications have facilities parallel to I-10 along with TEP power lines. They also have a utility crossing at Houghton Road and some advance planning near the SR 210 study area.
- TW Telecom / X-Spedius Communications have utility maps available and will be provided to Jacobs.
- *Update: Jacobs received facility maps from TW Telecom following the Utility Coordination Meeting.*

MCI

Point of Contact: Joe Ryan

- Jacobs was unable to contact Joe Ryan prior to the meeting. Jacobs will continue with attempts to contact Mr. Ryan or find MCI's point of contact in Tucson area.

Sprint

Point of Contact: Colin Sword

- Colin Sword was unable to attend the meeting. Prior to the Utility Coordination Meeting, Jacobs contacted Mr. Sword and provided information regarding the project and also requested utility maps. According to Mr. Sword, Sprint does not provide utility maps to the public. Jacobs will continue sending information to Sprint as the project advances and will continue coordination efforts to minimize conflict with Sprint facilities.

Ray Water Company

Point of Contact: Rhonda Rosenbaum

- Jacobs was able to contact Rhonda Rosenbaum prior to the Utility Coordination Meeting. Ms. Rosenbaum was unable to attend the meeting but utility maps were sent to Jacobs prior to the meeting.
- Ray Water Company has water facilities near Alvernon Way, south of I-10. Water facilities do not cross the I-10 and are south of the Alvernon Way TI ramps.

Vail Water Company

Point of Contact: John Boise (present at the meeting) and Manny Oros

- Vail Water Company has facilities near the SR 83 and the frontage road in this area. A 12-inch water line crosses I-10 at MP 281.3
- Quarter section maps on recent improvements near SR 83 were provided to Jacobs at the meeting.

Mescal Lakes Water System

Point of Contact: Eddie Morales and Keith Dojaquez (both present at the meeting)

- Mescal Lakes Water System has slight encroachment at the Mescal Frontage Road.
- Jacobs is coordinating with Karen Lamberton, Cochise County Transportation Planner, regarding improvements at the Mescal Road TI. There might be a possibility of replacing these TI with a new one and providing access to the frontage roads.
- Mescal Lakes Water Systems has utility maps and will provide them to Jacobs via email.

Action Items

- Jacobs will contact representatives from Kinder Morgan, Zapco Energy Tactics, MCI and other utility agency that might have facilities within the study area to provide them with information about the I-10, Jct I-19 to SR 90 project and to request utility maps.

Thank you to all the utilities that attended the Utility Coordination Meeting and to those that provided facility maps. The Study Team website is available to provide utilities with the latest information on the status of the project.

Subsequent to the Utility Coordination Meeting, the project name has been changed from I-10, Jct I-19 to Empirita TI to:

I-10, Jct I-19 to SR 90

Signed: Brad Olbert
Brad Olbert, PE, Project Manager

Enclosures: Project Information Sheet
Study Area Exhibit - Overall
Barraza-Aviation Study Area Exhibit
Utility Coordination Meeting Roster

Phase I (I-10/SR 210) Feasibility Reports & Environmental Overviews I-10, Jct I-19 to SR 83, AGFD Wildlife Corridors (November 9, 2010)

MEETING ATTENDEES:
Mike Demlong, Arizona Game and Fish Department
Angie Roach, Arizona Department of Transportation, Tucson District
Brad Olbert, Jacobs
Betsi Phoebus, Jacobs
Tom Ashbeck, EcoPlan
Mike Dawson, EcoPlan

SUBJECT: **PHASE I (I-10 / SR 210) Feasibility Reports & Environmental Overviews**
I-10, Jct 1-19 to SR 83
010-E(210)A
010 PM 260 H7825 01L

DESCRIPTION: **AGFD Wildlife Corridors**
DATE: Tuesday, November 9, 2010
TIME: 10:30 a.m. – 12:30 a.m.
LOCATION: Arizona Game and Fish Department, Tucson
555 North Greasewood Road

INTRODUCTION

The meeting was held to provide Arizona Game and Fish Department (AGFD) and the project team with an opportunity to focus on Interstate 10 (I-10) and the potential impacts to wildlife movement within the Feasibility Study limits. The study limits are to I-19 to SR 83; however, the discussion of wildlife corridor issues extends to SR 90 (Benson). Since the future Design Concept Report (DCR) will extend out to SR90, the AGFD issues and data are valuable at the planning stage.

SUMMARY

Brad Olbert, Jacobs' Project Manager, provided a brief overview of the project and purpose of the Feasibility Study and future DCR. The Feasibility Study and associated Environmental Overview will identify issues such as wildlife crossings and general mitigation methods; however, specific design elements would not be included until the DCR phase. Angie Roach, ADOT Tucson DEC, noted the on-going commitment of ADOT to work with AGFD and US Fish and Wildlife Service to address wildlife corridor/biodiversity issues across the state. While recently funding availability has been reduced, the desire and commitment to limit wildlife/vehicle collisions and to support the goals of viable wildlife populations is unchanged.

Arizona Missing Linkages: Rincon – Santa Rita – Whetstone Linkage Design (NAU 2007) provides the basis for major wildlife movement between the mountain ranges divided by I-10. Mike Demlong, AGFD Region 5, noted the study should be viewed as an approximation: the wildlife corridor boundaries have not been groundtruthed and are not exact, and there are additional crossing locations and accident databases that should be considered as well. Mike suggested a baseline study of accidents/animal road kill in the I-10 corridor would be a valuable tool to better understand the species affected and opportunities to mitigate both motorist accidents

and wildlife loss. Incident mapping could show areas that would benefit from mitigation such as culverts, crossings, or fencing. Angie noted the Arizona Transportation Research Center grant cycle was coming soon and perhaps such a study would be a candidate. Angie will provide Mike with the application material.

Mike stressed that AGFD does not want these issues to get lost during the Feasibility Study and reiterated that structures need to encourage wildlife passage. Mike Dawson, EcoPlan, clarified that the Environmental Overview would identify candidate culverts or areas for suggested measures or treatments. Brad added that design "guidelines" can be included in the Feasibility Study. EcoPlan will contact AGFD prior to biology site visit to continue this early coordination and project involvement with a joint field visit.

Angie pointed out that with recent changes to funding and ADOT upper management, the focus has been on large game species. She suggested that small changes to existing structures could be more palatable in a climate of limited funds and increased scrutiny.

The following points were discussed that would apply to the I-10 corridor not only for the segment to SR 83, but to Benson and SR 90:

- Pima County through the Sonoran Desert Conservation Plan has identified a Critical Landscape Connector as the lands on either side of I-10 between Houghton Road and SR 83 (Pima County Conservation Lands System Corridor #3). This is a top-priority area for AGFD Region 5.
- There are special interest groups that should be contacted for input on wildlife issues, including the Save the Santa Rita Coalition, Coalition for Sonoran Desert Preservation, and Sky Island Alliance. The project team will reach out to those interest groups.
- Opportunities to oversize bridges or culverts at drainages should be considered. This is a typical measure ADOT considers.
- Bat surveys are also recommended (when seasonally appropriate).
- Culvert design can be more wildlife friendly if there are no drop structures, rip-rap is covered with soil and the culvert floors have a natural sediment layer. AGFD would like opportunity to review or have input on culvert designs. ADOT has worked to provide a number of wildlife crossing culverts across the state and will apply that consideration to this corridor. Mike Demlong will provide the team with examples of wildlife friendly culvert designs to consider for the DCR phase.
- The project should consider noxious/invasive species. Due to federal funding the project must consider invasive species and would include standard measures to limit the contractors introduction or spread of invasives.
- The loss of key forage plants such as columnar cacti, agave, and ocotillo should be a focus of mitigation.
- Maintain access to existing legal roads to public lands off I-10, but do not open up or encourage new off-road travel.

As a follow-up to the meeting Mike Demlong provided the AGFD accident data base for vehicle/animal collisions. AGFD will continue to be actively involved in the Feasibility Study and, later, the DCR.

I-10, Jct I-19 to SR 83; SR 210, Golf Links Rd to Eastern Terminus, Traffic/Design Planning Meeting Notes (November 15, 2010)

TRAFFIC/DESIGN PLANNING MEETING NOTES

I-10, Jct I-19 to SR 83
Project No. 010 PM 260 H7825 01L
Federal Project No. 010-E(210)A

SR 210, Golf Links Rd to Eastern Terminus
Project No. 210 PM 000 H8260 XXX
Federal Project No. TBD

November 15, 2010

TO: **Meeting Attendees**
Billah Khan, ADOT Roadway Predesign Section, MD 605E
Tim Wilson, ADOT Roadway Predesign Section, MD 605E
Todd Emery, ADOT Tucson District Engineer, MD T100
Robin Raine, ADOT Tucson District Statewide Project Management, MD T100
Tom Martinez, ADOT Tucson District Transportation Engineering Specialist, MD T120
Delores Crumbacher, ADOT Regional Traffic, MD T120
Rod Lane, ADOT Tucson District Development / Maintenance Engineer
Robert Young, Pima County Transportation System, 201 N. Stone Ave., Tucson, AZ 85701
Jim Glock, City of Tucson Transportation Director, 201 N, Stone Ave., Tucson, AZ 85701
José Ortiz, City of Tucson Traffic Engineering, 201 N. Stone Ave., Tucson, AZ 85701
Richard Salaz, City of South Tucson, Transportation and Flood Control, 1601 South 6th Ave., Tucson, AZ 85713
Joel Gastelum, City of South Tucson Planning, 1601 South 6th Ave., Tucson, AZ 85713
Mick Jensen, City of South Tucson, 1601 South 6th Ave., Tucson, AZ 85713
Ken Born, Davis-Monthan AFB, 3791 S. 3rd Street, Davis-Monthan AFB, AZ 85707
Mike Dawson, EcoPlan Associates, 78 W. Cushing St., Tucson, AZ 85701
Greg Martinsen, EcoPlan, 78 W. Cushing St., Tucson, AZ 85701
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Not in Attendance
Paul Baumgardt, ADOT Environmental Planning Group, MD EM02
Daniel Granillo, ADOT Tucson District Project Development, MD T168
Gregory Wisecaver, ADOT Tucson District Regional Traffic Engineer, MD T120
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FROM:
Brad Olbert, Jacobs, 101 North First Avenue, Ste. 3100, Phoenix, Arizona 85003

SUBJECT:
TRAFFIC/PLANNING MEETING NOTES
I-10, Jct I-19 to SR 83
SR 210, Golf Links Rd to Eastern Terminus
I-10 / Barraza-Aviation Pkwy (SR 210)
Feasibility Reports and Environmental Overviews

INTRODUCTION

As the Base Traffic Model (PAG RPT + Reserved Projects) and no-build alternative analysis task for the I-10, Jct I-19 to SR 83 and Barraza-Aviation Pkwy (SR 210), Golf Links Rd to Eastern Terminus is completed, Jacobs gathered the Traffic/Design Focus Group to discuss the development of the project purpose and need, the development of system alternatives to address future roadway deficiencies, and the development of evaluation criteria for alternatives.

Jacobs discussed the importance of developing the project purpose and need inline with the NEPA requirements in order to be able to move the project forward to the design phase. As the Focus Group continues developing the purpose and need for the project, it is important to clearly identify the transportation problems we are trying to solve. The challenge and uniqueness in developing the purpose and need statement for I-10 improvements and SR 210 extension is that there will be two different statements but they need to convey that close coordination of the study progress should occur as improvements to one could affect operations of the other.

One of the main purposes of this Traffic/Planning Meeting was to gather and discuss improvement ideas to be used with the development of system alternatives to address future travel deficiencies in the corridor. The Focus Group brainstormed on potential concepts reflective of their understanding of the local needs and concerns and developed design alternatives for the I-10 main line and traffic interchanges. Jacobs will further analyze the surrounding roadway system to evaluate how the alternatives would improve the traffic flow through the region.

As System Alternatives are developed, it is important to identify criteria that will be use to evaluate the various design alternatives. Jacobs provided an Evaluation Criteria for Alternatives Form to the Traffic/Design Focus Group requesting their concerns/objectives/opportunities. The compilation resulting from the Focus Group contribution serves as a starting point to identify agreed upon criteria that aid in differentiating alternative's performance.

Agencies in attendance were: ADOT Predesign, ADOT Tucson District, Pima County, City of Tucson, City of South Tucson, and Davis-Monthan Air Force Base (AFB). Agencies invited but unable to attend were: Federal Highway Administration (FHWA) and Pima Association of Governments (PAG).

SUMMARY

Brad Olbert, Jacobs PM, opened the Traffic/Design Planning Meeting with self introduction of the Focus Group attendees and providing the group with the purpose and format of this meeting. The meeting consisted of two sections: the first section covered the development of the project purpose & need and the existing conditions/issues on the I-10 from I-19 to SR 83 and on the SR 210 at the Golf Links Road / Alvernon Way / Palo Verde Road Junction. The second half consisted of the future conditions/issues and discussion/brainstorming of potential improvements to mitigate future travel deficiencies. Evaluation criteria for alternatives were also discussed during the second half of the Planning Meeting.

PURPOSE AND NEED

Jack Allen, Jacobs Environmental Lead, introduced the team with the development of the project purpose and need statement. Jack Allen stated the importance of the purpose and need statement to be inline with the NEPA requirements. Although the Feasibility Studies (FS) and Environmental Overviews (EO) do not follow the NEPA process; Phase II, Design Concept Report (DCR) and the Environmental Assessments (EA) will follow the NEPA Process. The purpose and need statement should discuss strictly the transportation problems that the project is trying to solve. The statement should not discuss other issues such as safety, environmental, multi-modal options, etc. Some of these issues might become part of the purpose and need statement but it is important to solely focus on the transportation problems at this stage of the project.

Jack Allen mentioned the challenges and uniqueness of the purpose and need statement for this project. Unique as there are two separate projects and two different purpose and need statements; however, because improvements to one could affect operations of the other, close coordination of study progress should occur. Jack provided a sample purpose and need statement for the I-10 improvement to the Focus Group. The emphasis of this sample statement focuses more on how the "statement" addresses the transportation problem and not to take the content as a statement specific to the project.

I-10 Problem Statement – SAMPLE

Existing: In 2010, Interstate 10 is accommodating regional/interstate through travel and freeway capacity, number and type of access points, and roadway design features may be impeding such travel but not to levels that would be defined as a transportation problem. Yet, commuter travel is contributing to and suffering from problems on I-10 relative to limitations associated with traffic interchange locations, proximity, design, and capacity. The problems generated by the access points to and from I-10 are contributing to a growing degradation to the primary purpose and the operational characteristics of I-10 and is compromising the general purposes of the overall roadway network in the study area.

Future: Increasing traffic volumes will lead to capacity restrictions and added access restrictions on and along I-10. The increasing volumes will be sourced by growth to the south and east of Tucson downtown as well as by growing demands on I-10 as an interstate facility. The results will be poor operational performance for regional, commuter, and local traffic (as the local network will be adversely affected by poor operations on I-10). The combination of limited capacity and poor access will restrict and compromise the primary functions of the roadway network in the study area.

Comments on the sample statement:

- Tim Wilson, ADOT Predesign, is concerned about the statement mentioning commuter use and local traffic. FHWA supports alternate routes instead of using freeways for commuter use.
- Mike Dawson, EcoPlan, stated that it would be important to recognize if wildlife collisions will be an issue to address in the purpose and need statement. Jack Allen is concerned with having wildlife incorporated in the statement as it becomes a safety project. Further discussion will follow after reviewing wildlife collision data.
- Tim Wilson asked if the existing LOS meet the current urban/rural highway conditions. Concerns can be raised on the project necessity if conditions are met. The current LOS from I-19 to Alvernon Way is D or better; Alvernon Way to the east is C or better. LOS on SR 210 is B or better.

EXISTING CONDITIONS

Brad Olbert solicited comments from the Focus Group on the existing conditions or planned developments in the area:

a. I-10 Mainline, Segment 1: I-19 to Kino Pkwy

- 6th Ave
  - Richard Salaz, City of South Tucson representative, is concerned with I-10 expansion in the 6th Ave area. The City would not support any encroachment into the Yaqui Village and other developments north of the I-10. Yaqui Village is located south of the I-10 between I-19 and 6th Avenue.
  - No operational problems at 6th Avenue and I-10.
  - Texas U-turn at UPRR frontage road is working well.
  - EB, no comments on traffic weave, better signage was suggested on the 6th Avenue off ramp.
  - WB, very bad weave condition entering 6th Avenue on ramp.
- Park Ave
  - Traffic interchange loop ramp not meeting current design standards but operating fine.
- Kino Pkwy
  - 100-year floodplain paralleling I-10 from Kino Pkwy to Kolb Rd.
  - Low ramp entering speed vs. mainline speed. I-10 is currently signed at 65 mph but there are a significant number of crashes in this area and multiple guard rail repairs.
  - Very congested traffic from Ajo Way entering WB I-10.
  - The south ramps carry more traffic.
  - Many accidents on the SB to EB ramp and ADOT will like to improve this condition.
  - The WB entering ramp has a short merging lane.
  - Some users prefer using Park Ave instead of Kino Pkwy due to the complicated TI loops.
  - Future development: Costco on the northwest quadrant, residential development in the southeast quadrant with access onto Kino Pkwy.

b. I-10 Mainline, Segment 2: Kino Pkwy to Alvernon Way

- Future Country Club Rd
  - No redevelopment plans at Country Club Rd and I-10.
  - Area is zoned commercial / industrial.
- Palo Verde Rd TI / Alvernon Way
  - Current AM traffic pattern shows flow from the west side to Alvernon Way to Golf Links Rd.
  - Current PM traffic pattern shows flow south to Palo Verde to I-10 west.
  - Users find it very difficult to maneuver around Palo Verde TI and Alvernon Way TI.

- Most traffic is directed to Davis-Monthan AFB and Border Patrol located at Golf Links Rd and Swan Rd.
- Large industrial truck traffic flow thru Alvernon Way.
- UPRR tracks running parallel to Alvernon Way. Approximately 40-60 trains/day.

c. I-10 Mainline, Segment 3: Alvernon Way to Kolb Rd

- Valencia Rd
  - Future widening of Valencia Rd to 6 lanes arterial east to Kolb Rd.
  - Future residential development along Swan Rd south of Valencia Rd.
- Craycroft Rd
  - Traffic problems at the Triple T truck shop in the NW quadrant: undefined access onto Craycroft Rd and sight distance issues.
  - Future commercial development in the NE quadrant.
  - Regional Landfill south of I-10 on Craycroft Rd.
- Wilmot Rd
  - Short distance between ramp termini for this tight diamond restricts NB left turns onto WB I-10.
  - Wilmot Rd will need expansion.
- Kolb Rd
  - No comments.

d. I-10 Mainline, Segment 4: Kolb Rd to Houghton Rd

- Rita Rd
  - IBM in the NW quadrant. Also home to U of A east campus.
  - Future commercial development in the NE quadrant.
  - Unlikely to have future residential development due to Davis-Monthan flight paths.
- Houghton Rd
  - State Land around Houghton Rd north of I-10.
  - Future I-10 connection desired. Will be located approximately 1/3 the distance between Houghton/Colossal Cave Rd.
  - Houghton Rd is planned to be 6-lane roadway in future.

e. I-10 Mainline, Segment 5: Houghton Rd to SR 83

- Colossal Cave Rd
  - Game and Fish concerns between Colossal Cave Rd to SR 83.
- SR 83
  - Mine traffic from NB SR 83 to WB I-10 to Kolb Rd.

FUTURE CONDITIONS (Year 2040)

Patrizia Gonella, Jacobs Traffic Modeling Lead, provided an update on the future conditions and a summary of the predicted issues based on results from the traffic model for the base roadway system consisting of PAG's RTP and reserved projects. Patrizia Gonella presented two exhibits showing the 2010 and 2040 roadway systems. Most of the planned roadway infrastructure growth is in the Southeast Area (area east of the I-19 and south of I-10) and east of Rita Rd north of I-10. Improvements along the I-10 for 2040 consists of 8-lane freeway from I-19 to Valencia Rd, 8-lane freeway from Kolb Rd to Houghton Rd, additional TI at Country Club Rd and partial removal of TI at Palo Verde Rd. Improvements along the SR 210 for 2040 consists of the eastern end extension tying into I-10 at Valencia Rd.

Projected issues are described below and depicted in the attached Exhibit E.

- Congested segment on I-10 from Alvernon Way to Wilmot Rd
- Congested segment on I-10 from Houghton Rd to SR 83
- Congested interchange at I-10 and Kolb Rd
- Congested interchange at I-10 and Rita Rd TI
- Congested interchange at I-10 and Houghton Rd TI
- Operational challenge at I-10 and Kino Pkwy TI
- Operational challenge at I-10 and Palo Verde Rd TI
- Operational challenge at I-10 and Alvernon Way TI
- SR 210, congested segment at SR 210 between Country Club Rd and Golf Links Rd / Swan Rd
- SR 210, congested interchange at Palo Verde Rd / Alvernon Way / Golf Links Rd junction

SYSTEM ALTERNATIVES

After reviewing the projected 2040 project issues, the Focus Team discussed potential concept improvements to address future roadway deficiencies. These concepts are summarized in the following tables and illustrated in the attached exhibits (Exhibits 1-12).

I-10, Jct I-19 to SR 83

Alternatives	Location	Description	Comments
Kino-1	Kino Pkwy TI	Tight diamond interchange. - Remove TI south loops - Remove I-10/Ajo Way on-ramp and off-ramp - Remove WB ramp from Kino Pkwy to I-10.	Traffic from Ajo Way can access I-10 thru existing loop between Ajo Way and Kino Pkwy or traffic can be diverged south of I-10 to Benson Hwy then northbound to Park Ave TI.
Kino-2(CD)	Kino Pkwy TI	Half diamond and collector distributor (CD) road. + CD ending with half diamond west of Kino Pkwy + New south on-ramp east of Kino Pkwy connected to CD (provides access to I-10 EB traffic from Kino Pkwy) + New north off-ramp east of Kino Pkwy connected to DC (replaces off-ramp to Ajo Way) - Remove TI south loops - Remove I-10/Ajo Way on-ramp and off-ramp - Remove WB ramp from Kino Pkwy to I-10 + CD can extend from Kino Pkwy to Alvernon Way	CD provides better flow for regional and local traffic. Access to frontage road is a concern. City/community does not favor retaining walls.

Country-1	County Club Rd TI	No TI at Country Club (2040 PAG model includes a diamond interchange at Palo Verde and removes Palo Verde TI)	Adding TI at County Club Rd is consistent with FHWA 1-mi TI spacing for urban freeways; however, Country Club Rd does not provide connection north of SR 210.
Country-2(CD)	County Club Rd TI	Collector distributor with on-ramp/off-ramp access on both I-10 EB and WB traffic. + Collector distributor can extend from Kino Pkwy to Alvernon Way	CD weaving length might be constraint with Palo Verde Rd
PV-1	Palo Verde Rd TI (North)	New I-10 WB on-ramp for Irvington Rd west of Palo Verde Rd intersection. Combine with existing Palo Verde on-ramp. - Remove north on-ramp/off-ramp loops from Irvington Rd.	
PV-2	Palo Verde Rd TI (South)	Connect existing on ramp/off ramp into half south diamond interchange. - Remove Palo Verde loops south of I-10	
PV-3(CD)	Palo Verde Rd TI	Collector distributor at Palo Verde + North on-ramp west of Palo Verde Rd/Irvington Rd connecting to CD prior to entering to I-10 + South on-ramp/off-ramp providing access to Palo Verde Rd via tight diamond ramps - Remove north on-ramp/off-ramp from Irvington Way to I-10 - Remove Palo Verde loops south of I-10	
Alvernon-1	Alvernon Way TI	Add WB Ramp	SB traffic on Alvernon Way can enter I-10 without routing to Irvington Rd/Palo Verde Rd.
Alvernon-2(CD)	Alvernon Way TI	Half diamond on the east half and collector distributor extending west connecting to Palo Verde Road.	
Main-1	Main line I-10, Alvernon Way to Kolb Rd	8-lane I-10 section	Prevents bottle neck from 8-lane I-10 section west of Alvernon Way and east of Kolb Rd
Valencia-1	Valencia Road TI	Upgrade TI - TI type to be determined	County upgrading Valencia Rd to 6-lane arterial road. New interchange to accommodate heavy traffic thru Valencia. Will review traffic patterns prior to determining TI type.
Craycroft-1	Craycroft Rd TI	Upgrade TI - TI type to be determined	Expected heavy turns at Craycroft Rd TI with surrounding developments. Will review traffic patterns prior to determining TI type.
Wilmot-1	Wilmot Rd TI	Upgrade TI - TI type to be determined	Currently heavy traffic turns at Wilmot Rd TI and expected traffic increase with Davis-Monthan AFB new south gate. Will review traffic patterns prior to determining TI type.
Rita-1	Rita Road TI	Single-point urban interchange (SPUI)	Provides better traffic flow than single diamonds for the project traffic flow

Rita-2	Rita Road TI	Diverging diamond interchange (DDI)	
Main-2	Houghton Rd TI	Urban section to be extended to Houghton Rd	
Houghton-1	Houghton Rd TI	Single-point urban interchange (SPUI)	Provides better traffic flow than single diamonds for the project traffic flow
Houghton-2	Houghton Rd TI	Diverging diamond interchange (DDI)	
Wenthworth / Colossal Cave Rd		No Comments	Will review traffic patterns prior to determining TI type
SR83-1	Junction SR 83	Spread diamond interchange - Remove existing trumpet shape ramps + Provide connection north of I-10	
SR83-2	SR 83 / Marsh Station Frontage Road	Relocate Marsh Station Frontage Road north of new spread diamond interchange at SR 83 TI and connect with existing frontage road west of SR 83.	

SR 210; Golf Links Rd to Eastern Connection

Alternatives	Location	Description
Barraza-1	Alvernon Way from Golf Links to I-10	Widen Alvernon to 8-10 lanes at its current configuration and add ramps & free flow movements at Alvernon Way TI. Alvernon Way would not be an access control facility.
Barraza-2	Barraza-Aviation Pkwy (SR 210) eastern extension	Add limited access parallel facility to Alvernon Way (e.g. parkway / express way) to provide free flow movement from I-10 to existing SR 210. Alvernon Way remains as existing conditions to carry local traffic and would be realigned on the south near I-10 to accommodate SR 210 extension and future extension of Alvernon Pkwy to the south.
Barraza-3a	SR 210 extension to Craycroft Rd/Valencia Rd	Extend SR 210 to the southeast following Davis-Monthan AFB south boundary to Craycroft Rd. SR 210 extension ends at Valencia Road.
Barraza-3b	SR 210 extension to Craycroft Rd/I-10	Extend SR 210 to the southeast parallel to Davis-Monthan AFB south boundary to Craycroft Rd and extending/improving Craycroft Rd to I-10.
Barraza-4a	SR 210 extension to Swan Rd alignment connecting at Valencia Rd	Extend SR 210 to the southeast parallel to Davis-Monthan AFB south boundary to Swan Rd alignment, then south along Swan Rd alignment to UPRR crossing and southeast paralleling UPRR facility. SR 210 extension ending at Valencia Rd.
Barraza-4b	SR 210 extension to Swan Rd alignment connecting at Craycroft Rd	Extend SR 210 to the southeast parallel to Davis-Monthan AFB south boundary to Swan Rd alignment, then south along Swan Rd alignment to UPRR crossing and southeast paralleling UPRR facility. SR 210 extension ending at Craycroft Rd.
Barraza-4c	SR 210 extension to Swan Rd alignment connecting at Wilmot Rd	Extend SR 210 to the southeast parallel to Davis-Monthan AFB south boundary to Swan Rd alignment, then south along Swan Rd alignment to UPRR crossing and southeast paralleling UPRR facility. SR 210 extension ending at Wilmot Rd.
Barraza-4d	SR 210 extension to Swan Rd alignment connecting at Kolb Rd	Extend SR 210 to the southeast parallel to Davis-Monthan AFB south boundary to Swan Rd alignment, then south along Swan Rd alignment to UPRR crossing and southeast paralleling UPRR facility. SR 210 extension ending at Kolb Rd.
Barraza-4e	SR 210 extension to Swan Rd alignment connecting at Rita Rd	Extend SR 210 to the southeast parallel to Davis-Monthan AFB south boundary to Swan Rd alignment, then south along Swan Rd alignment to UPRR crossing and southeast paralleling UPRR facility. SR 210 extension ending at Rita Rd.

The diverging diamond interchange (DDI) , also known as double crossover diamond (DCD), and the displaced left-turn traffic (DLT) interchange are two TI concepts introduced in the recent years to improve traffic flow and allow free left-turn movements thru an interchange. DLT interchange was not discussed during the meeting but attached is an article comparing the DDT and DLT interchanges. Jacobs will also consider the DLT interchange when evaluating TI alternatives.

EVALUATION CRITERIA FOR ALTERNATIVES

To conclude the planning meeting, Jack Allen, Jacobs Environmental Lead, discussed the establishment of screening criteria when examining alternatives. Jacobs provided an Evaluation Criteria Form to the project stakeholders containing broad categories and factors to consider before screening alternatives. The goal of this exercise is to identify project key issues and differentiators that may carry certain alternatives forward. The categories included in the form were:

- Traffic operations
- Design features
- Environmental impacts
- Design and environmental fatal flaws
- Magnitude of cost
- Mobility
- Public/political acceptability
- Plan compatibility
- Right-of-way impacts
- Other evaluation criteria

Feedback from stakeholders on the evaluation criteria is critical to Jacobs during the next step of the study as we develop and evaluate the system alternatives. Completed Evaluation Criteria Forms expected by the third week of December.

FUTURE MEETING

The November Progress Meeting scheduled for Monday, November 29th has been cancelled due to short timeframe between the planning meeting and progress meeting.

The December Progress Meeting will be cancelled due to the Holiday schedule.

In order to provide an update to the project progress, Jacobs is coordinating with ADOT Predesign to schedule a meeting in mid-December.

Signed: Brad Olbert

Brad Olbert, PE, Project Manager

Enclosures:
Traffic Model – Exhibit A: 2010 Roadway System
Traffic Model – Exhibit B: 2040 RTP With Reserve Roadway Improvements
Traffic Model – Exhibit C: 2010 Roadway Total Lanes Exhibit
Traffic Model – Exhibit D: 2040 Base Total Lanes
Traffic Model – Exhibit E: 2040 Base Daily Volumes and Level of Congestion
System Alternatives – Exhibit 1: Kino-1
System Alternatives – Exhibit 2: Country-1, PV-1, PV-2, Alvenon-1
System Alternatives – Exhibit 3: Kino-2(CD), Country-2(CD), Alvenon-2(CD)
System Alternatives – Exhibit 4: Main-1, Valencia-1, Craycroft-1, Wilmot-1
System Alternatives – Exhibit 5: Main-1, Rita-1, Houghton-1
System Alternatives – Exhibit 6: Rita-2, Houghton-2
System Alternatives – Exhibit 7: SR83-1, SR83-2
System Alternatives – Exhibit 8: Barraza-1
System Alternatives – Exhibit 9: Barraza-2
System Alternatives – Exhibit 10: Barraza-3a, Barraza-3b
System Alternatives – Exhibit 11: Barraza-4a, Barraza-4b, Barraza-4c, Barraza-4d, Barraza-4e
Literature – Two Interchange Concepts (Diverging Diamond Interchange and Displaced Left-Turn)
Attachment – Meeting Roster
Attachment – Evaluation Criteria for Alternative Form

I-10, Jct I-19 to SR 83; SR 210, Golf Links Rd to Eastern Terminius, Traffic/Design Planning Meeting Notes (December 20, 2010)

TRAFFIC/DESIGN PLANNING MEETING NOTES

I-10, Jct I-19 to SR 83
Project No. 010 PM 260 H7825 01L
Federal Project No. 010-E(210)A

SR 210, Golf Links Rd to Eastern Terminus
Project No. 210 PM 000 H8260 XXX
Federal Project No. TBD

December 20, 2010

TO: **Meeting Attendees**
Robin Raine, ADOT Tucson District Statewide Project Management, MD T100
Gregory Wisecaver, ADOT Tucson District Regional Traffic Engineer, MD T120
Tom Martinez, ADOT Tucson District Transportation Engineering Specialist, MD T120
Rod Lane, ADOT Tucson District Development / Maintenance Engineer
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Patricia Gonella, Jacobs, 101 N. First Ave., Ste. 3100, Phoenix, AZ 85003

Not in Attendance
Billah Khan, ADOT Roadway Predesign Section, MD 605E
Tim Wilson, ADOT Roadway Predesign Section, MD 605E
Todd Emery, ADOT Tucson District Engineer, MD T100
Delores Crumbacher, ADOT Regional Traffic, MD T120
Paul Baumgardt, ADOT Environmental Planning Group, MD EM02
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Jack Allen, Jacobs, 101 N. First Ave., Ste. 3100, Phoenix, AZ 85003

FROM:
Brad Olbert, Jacobs, 101 North First Avenue, Ste. 3100, Phoenix, Arizona 85003

SUBJECT:
TRAFFIC/PLANNING MEETING NOTES
I-10, Jct I-19 to SR 83
SR 210, Golf Links Rd to Eastern Terminus
I-10 / Barraza-Aviation Pkwy (SR 210)
Feasibility Reports and Environmental Overviews

INTRODUCTION

Jacobs gathered the Traffic/Design Focus Group to discuss the development of system alternatives to address future roadway deficiencies, and the development of evaluation criteria for alternatives.

Potential system wide changes to I-10 and SR 210 discussed in the November 15th meeting were grouped and 9 improvements concepts were developed. 2040 traffic forecasts were generated for all 9 concepts and the results presented to the group. Discussion accompanied the results presentation and the group provided some feedback relative to development of preferred system alternatives.

The criteria to evaluate the system alternatives were discussed. A simplified approach was requested to help the group to provide the information that Jacobs was requesting.

Agencies in attendance were:, ADOT Tucson District, Pima County, City of Tucson, City of South Tucson, and Federal Highway Administration (FHWA). Agencies invited but unable to attend were: ADOT Predesign, Davis-Monthan Air Force Base (AFB), and Pima Association of Governments (PAG).

SUMMARY

Brad Olbert, Jacobs PM, opened the Traffic/Design Planning Meeting with self introduction of the Focus Group attendees and a brief overview of the purpose of the meeting.

SYSTEM ALTERNATIVES (Design Year 2040)

Patrizia Gonella, Jacobs Traffic Modeling Lead, presented two packets of information on the 2040 roadway systems.

The first packet identified the number of lanes for various alternatives listed below. See first attachment.

- A. 2040 I-10 Improvements showing eight through lanes on I-10 from I-19 to Houghton Rd. and four though lanes on I-10 from Houghton Rd to SR 90. SR 210 is shown with six lanes and the RTP connection to I-10 at Valencia Rd.
- B. 2040 I-10 Improvements for A and Reconfigured Traffic Interchanges. SR 210 is shown with six lanes and the RTP connection to I-10 at Valencia Rd.

- C. 2040 New Alvernon Way Connection showing ten lanes on Alvernon, a system interchange at SR 210 and new Diamond TIs at Ajo Way and Irvington Rd.
- D. 2040 New SR 210 Alignment Location 1 which parallels Alvernon Way with a system interchange at SR 210 and directional ramps at I-10 and Alvernon Way. SR 210 is shown with four lanes.
- E. 2040 New SR 210 Alignment Location 2 which follows along the south side of DMAFB with a system interchange at SR 210 and directional ramps at I-10 and Valencia Rd. SR 210 is shown with four lanes.
- F. 2040 New SR 210 Alignment Location 3 which follows along the south side of DMAFB with a system interchange at SR 210, a intersection connection to Valencia Rd. and a connection to I-10 at Craycroft Rd. SR 210 is shown with four lanes.
- G. 2040 New SR 210 Alignment Location 4 which roughly follows along the south side of DMAFB with a system interchange at SR 210, a intersection connection to Valencia Rd. and a connection to I-10 at Wilmot Rd. SR 210 is shown with four lanes.
- H. 2040 New SR 210 Alignment Location 5 which follows along the south side of DMAFB with a system interchange at SR 210, a intersection connection to Valencia Rd. and connections to I-10 at Wilmot Rd. and Kolb Rd. SR 210 is shown with four lanes.
- I. 2040 New SR 210 Alignment Location 6 which follows along the south side of DMAFB with a system interchange at SR 210, a intersection connection to Valencia Rd. and connections to I-10 at Wilmot Rd., Kolb Rd. and Rita Rd. SR 210 is shown with four lanes.

The second packet identified the roadway forecasted traffic volume and levels of service for various alternatives listed above. See second attachment. Comments related to the various alternatives are listed below.

- A. LOS varies between D and F from I-19 to Houghton Rd. LOS varies between C and F between Houghton Rd and SR 90. It was apparent that I-10 should be six lanes east of Houghton Rd. Rural sections of I-10 should be LOS C or better. Additional lanes (more than 8 lanes) may be needed on sections of I-10 between Alvernon Way and Kolb Road.
- B. LOS did not change with the traffic interchange improvements. However, safety and driver expectancy should greatly improve at the TIs between I-19 and Alvernon Way.
- C. 2040 New Alvernon Way Connection showing ten lanes on Alvernon Way appears to work well. I-10 east of Alvernon Way to Wilmot Rd. will need additional lanes.
- D. 2040 New SR 210 Alignment Location 1 which parallels Alvernon Way appears to need additional lanes, plus I-10 east of Alvernon Way to Wilmot Rd. will need additional lanes. Several thought this alternative will not survive public and political input because of the large number of businesses that will need to be removed.
- E. 2040 New SR 210 Alignment Location 2 which follows along the south side of DMAFB with a connection at I-10 and Valencia Rd appears to work well. Try SR 210 extension with six lanes.
- F. 2040 New SR 210 Alignment Location 3 which follows along the south side of DMAFB with an intersection connection to Valencia Rd. and a connection to I-10 at Craycroft Rd. Several thought this alternative will not survive public and political input because of the effect this alternative will have on the community of Littleton and the nearby school.
- G. 2040 New SR 210 Alignment Location 4 which roughly follows along the south side of DMAFB with an intersection connection to Valencia Rd. and a connection to I-10 at Wilmot Rd. Several thought this alternative worked well, especially with the new access to DMAFB. Try SR 210 extension with six lanes.
- H. 2040 New SR 210 Alignment Location 5 which follows along the south side of DMAFB with an intersection connection to Valencia Rd. and connections to I-10 at Wilmot Rd. and Kolb Rd. The added extension to SR 210 did not appear to relieve I-10 but rather served more as a local arterial.
- I. 2040 New SR 210 Alignment Location 6 which follows along the south side of DMAFB with an intersection connection to Valencia Rd. and connections to I-10 at Wilmot Rd., Kolb Rd. and Rita Rd. The added extension to SR 210 appeared to serve more as a local arterial relieving traffic on Valencia Road and a segment of I-10.

For Alternatives C through I SR 210 was increased to six lanes from four lanes between Country Club Rd and Palo Verde Rd. This was an obvious improvement needed for the extension of SR 210 and the connection with Golf Links Road.

Mary Frye asked how many alternatives were going to be continued forward with the Feasibility Study. Patrizia Gonella stated that the alternatives just reviewed will be combined into system alternatives. We were planning to move forward with three system alternatives that appeared to work the best. For instance, Alternatives A and B would be combined with Alternative C to create a system alternative. Another might be Alternatives A and B with E. Other system adjustments we discussed will also be included such as making I-10 six lanes east of Houghton Road and changing the SR 210 extension to six lanes.

Mary Frye pointed out from this point forward the Purpose and Need statement should be refined so that you know what your objective is.

Gregory Wisecaver asked about the area type in the study area and to ensure that I-10 attains LOS C in the rural area. Patrizia Gonella answered that in 2040 it is assumed that the Urban area will reach Houghton Rd. East of SR 83 will remain Rural and in between will become Urban Fringe.

There was a brief discussion about existing Baraza-Aviation Parkway. Construction is scheduled to begin in the next 4 to 5 months on extending the west end about one-half mile to the west of Broadway. Andy McGovern will send us construction plans on the work. The City of Tucson had been discussing internally if the existing intersection at Country Club Rd. is needed. Only about 8,000 vehicles a day use the connection. The intersection at 22nd Street does not have all the turning movements. It functions more like a "T" intersection. The City of Tucson would eventually like to extend the west end of the Baraza-Aviation Parkway to I-10 along St. Marys Road.

Only a few comments came in on the evaluation criteria. In general most of the points made on the sample criteria sheet were good. A list of performance measures for evaluating the impact of transportation improvements was handed out for discussion. It was suggested that the list be formatted to allow a ranking of the points. Ranking the criteria is easier than composing criteria. Jacobs will work on a sheet to rank the criteria for the next meeting.

FUTURE MEETING

The December Progress Meeting has been cancelled due to the Holiday schedule.

The next scheduled meeting is the January Progress Meeting on January 31st.

Enclosures:
Attachment – Evaluated Alternatives
Attachment – Modeling Results of Evaluated Alternatives
Attachment – Meeting Roster
Attachment – Performance Measures for Evaluating the Impact of Transportation Improvements

I-10, Jct I-19 to SR 83; SR 210, Golf Links Rd to Eastern Termini, ADOT-UPRR Coordination Meeting Notes (March 9, 2011)

ADOT-UPRR COORDINATION MEETING NOTES

PROJECT:	**I-10, Jct I-19 to SR 83**
	Project No. 010 PM 260 H7825 01L - Federal Project No. 010-E(210)A
	SR 210, Golf Links Rd to Eastern Termini
	Project No. 210 PM 4 H8260 XXX, Federal Project No. TBD
DATE/TIME:	March 9, 2010 @ 7:30 AM
LOCATION:	ADOT Engineering Building, Right-of-Way Conference Room (Room 301, 3rd Floor)
SUBJECT:	ADOT - Union Pacific Railroad (UPRR) Coordination Meeting
ATTENDEES:	Robert Travis, ADOT Utilities & Rr Engineering; Brad Olbert, Jacobs
	Alexander Popocivi, Union Pacific Railroad; Paul Black, Jacobs
	Freddy Cheung, Union Pacific Railroad; Vanessa Quinto, Jacobs
	Jim Marshall, Union Pacific Railroad

GENERAL SUMMARY:

The ADOT-UPRR Meeting for the I-10, Jct I-19 to SR 83 and Barraza-Aviation Parkway (SR 210), Golf Links Rd to Eastern Termini Feasibility Studies started at 7:30 AM and concluded at 8:10 AM. Brad Olbert, Jacobs Project Manager gave an overview of the project after introductions.

Brad Olbert, Jacobs Project Manager, discussed the general scope of the project and the project limits: I-10 widening to accommodate the projected 2040 traffic volumes and extension of SR 210 to the east connecting I-10 as a congestion reliever for the projected traffic. Brad introduced the project limits on I-10 from its junction with I-19 to SR 83 on the eastern end for the Feasibility Studies phase. The eastern limit will be extended to SR 90 during the Design Concept Report phase.

Paul Black, Jacobs Roadway Project Engineer, provided an update to UPRR representatives on the project progress to date. The three system alternatives were presented and the crossing areas with UPRR were highlighted and discussed. An exhibit illustrating the existing UPRR right-of-way and tracks with the initial concepts for the system interchange at SR 210/Golf Links Rd/Alvernon Way was also provided to facilitate the discussion.

System Alternative I

System Alternative I extends SR 210 to I-10 at the existing Alvernon Way alignment. Results from the traffic modeling for the 2040 traffic projections requires a 5-lane directional facility (10 lanes total) for this alternative (existing Alvernon Way is a 3-lane directional facility). This system alternative proposes a full system interchange at SR 210/Golf Links Rd/Alvernon Way connection to provide continuity of traffic flow. This area is physically constrained with UPRR facilities on the south west quadrant and Davis-Monthan Air Force Base (AFB) on the east; however, the proposed conceptual interchange stays out of the existing UPRR right-of-way (see attached exhibit). The UPRR right-of-way is typically 200-ft wide.

The SR 210 extension will be an elevated facility from its crossing with UPRR facilities south of Ajo Way to its connection with I-10. The existing bridge at Alvernon Way is in place crossing the UPRR facilities and widening will be necessary under this system alternative.

UPRR commented that if the existing bridge needs to be replaced, it has to follow new UPRR guidelines. Jacobs's thoughts on this crossing are to keep the Alvernon Way northbound lanes in place and replace the southbound lanes to keep a normal crown on the future SR 210 facility.

Robert Travis, ADOT-UPRR Liaison, commented that the new UPRR standards requires a vertical clearance of 23-ft, 4-in; however, ADOT requires a clearance of 23-ft, 6-in. Robert referred to the latest UPRR standards: *BNSF Railway-Union Pacific Railroad, Guidelines for Railroad Grade Separation Projects*.

System Alternative II and III

System Alternative II extends SR 210 to I-10 south of Davis Monthan AFB connecting I-10 at Valencia Rd traffic interchange. System Alternative III extends SR 210 to I-10 south of Davis Monthan AFB connecting I-10 at Wilmot Rd traffic interchange. These two alternatives have the same conceptual alignment from the proposed SR 210/Golf Links Rd/Alvernon Way system interchange to the UPRR crossing at Swan Rd. Conceptual alignments are different south of the UPRR crossing.

Alternatives II and III are shown crossing the UPRR facilities at the Swan Rd alignment. Jacobs has not evaluated the vertical profile but this crossing will most likely be an overpass bridge as the roadway has to remain elevated as it approaches Valencia Rd. UPRR prefers an elevated structure to avoid potential conflicts with drainage and other utilities inside the UPRR right-of-way.

Freddy Cheung, UPRR Senior Manager, is mostly concerned with the bridge horizontal span. UPRR requires a clear span for four railroad tracks and a maintenance road on new bridges. Bridge piers and abutments are not allowed in the required clear zone. Required distance between centers of railroad tracks is 20-ft. Required distance between center of track to edge of pier is 25-ft. The maintenance road is part of the 25-ft clearance near the outer tracks.

Freddy Cheung also suggested if the proposed alignment can be more perpendicular to the UPRR tracks to minimize the clear span length for the overpass bridge. Jacobs will review alternatives to make roadway more perpendicular to railroad tracks.

Robert Travis mentioned that 30 to 50 trains travel this line daily.

I-10 Improvements

I-10 crosses the UPRR tracks nears the vicinity of 4th Ave and Park Ave. This is called the UPRR Nogales Subdivision and 10-15 trains per day uses this track. Widening might be necessary on this crossing but Jacobs has not evaluated if widening should take place on the outside or inside lanes. If vertical clearance is an issue, replacement of bridge will be necessary.

Improvements on the Marsh Station traffic interchanges will realign the railroad track and remove the existing railroad bridge as it presents issues with vertical clearance. There are other crossings on the eastern end of the project but details of the crossings were not discussed during the meeting.

Open Discussion

- Site visit: UPRR right-of-way entry permit will be necessary prior to future field visit/survey of existing UPRR facilities. Coordination will be necessary with Robert Travis.

- UPRR Point of Contact: Alexander Popovoci is the UPRR point of contact for improvements in this project. Communication related to UPRR will go through ADOT, Robert Travis to Alexander Popovoci.
- UPRR guidelines for final plans: Robert Travis mentioned that UPRR has some guidelines that should be followed for final design. Robert will provide guidelines to Jacobs.
- UPRR requires a 1000-ft profile of track at the location of the proposed roadway/bridge structure crossing during the final design as they prefer bridge structure be set based upon tangential grades rather than a sag curve.
- Utilities inside the UPRR right-of-way are sometimes not identified in Bluestake. UPRR has a reserved utility phone line for this information. Robert Travis will provide phone number to Jacobs and will also provide rail mile at crossings. Typical utilities in this area are Kinder Morgan, mix volatile products on the south side of the tracks, and communication lines on the north.
- Robert Travis will update the ADOT-UPRR project list with the additional crossings presented under the three system alternatives presented during this meeting.
- Exhibits of the conceptual SR 210/Golf Links Rd/Alvernon Way system interchanges and UPRR right-of-way are attached to these meeting notes.

Signed: Brad Olbert
Brad Olbert, PE, Project Manager

References:

UPRR Website: www.uprr.com

BNSF Railway – Union Pacific Railroad, Guidelines for Railroad Grade Separation Projects, January 24, 2007

KICKOFF MEETING NOTES
I-10, JUNCTION I-19 TO SR 83
Project No. 010 PM 260 H7825 01L
January 27, 2014

TO: Kickoff Meeting Attendees
David Brauer, ADOT Urban Project Management, Project Manager
Scott Beck, ADOT Regional Traffic Engineer
Virgil Coxon, ADOT Chief Surveyor**
William Lyons, ADOT Roadway Engineering Group
Pete Mayne, ADOT ROW Project Management Section Coordinator**
Robin Raine, ADOT Urban Project Management
C.T. Revere, ADOT Tucson District Communications
Andrew Stastny, ADOT Traffic Design**
Ayman Ghadban, ADOT Safford District Utilities
Rod Lane, ADOT Tucson District Engineer
William Knight, ADOT EPG Tucson District
Tom Martinez, ADOT Tucson District Transportation Engineer
Priscilla Thompson, ADOT Tucson District Utilities
Jennifer Grentz, ADOT Community Relations**
Scott Spragne, Arizona Game and Fish Department
Cheri Boucher, Arizona Game and Fish Department**
Kristen Terpening, Arizona Game and Fish Department
Karen Lamberton, Cochise County Transportation Planning
James Baker, Davis-Monthan AFB**
Mike Dawson, EcoPlan Associates Senior Environmental Planner
Sharon Gordon, FHWA Area Engineer
Jack Allen, Jacobs Environmental & Planning**
Brad Olbert, Jacobs Project Manager
Paul Black, Jacobs Roadway Project Engineer
Rolly Cook, Jacobs Programming/Implementation Engineer**
Patricia Gonella, Jacobs Macro Modeling
Shanthi Krishnan, Jacobs Traffic Modeling**
Betsi Phoebus, Jacobs Environmental**
Sandra Thoms, Jacobs Traffic
Priscilla Cornelio, Pima County Director of Department of Transportation
Seth Chalmers, Pima County Traffic Engineering Division Manager
Robert Young, Pima County Transportation System Division Manager
Dennis Donavan, Cochise County Engineer
James Philbin, J2 Engineering**
** Attended via teleconference

Not in Attendance
Leroy Brady, ADOT Roadside Development
Paul Burch, ADOT Pavement Design
Lev Derzhavets, ADOT Roadway Design Support
John Eckhardt, ADOT ROW
Dallas Hammit, ADOT State Engineer's Office
Shajed Haque, ADOT Drainage
Steve Hull, ADOT C&S
Mohamad Jawhar, ADOT Engineering Surveying
Michael Kies, ADOT Assistant Director of Planning and Programming
Megan Kintner, ADOT Intergovernmental Affairs
Michael Klein, ADOT Aeronautics
Steve Beasley, ADOT Urban Project Management
Debbie Mayfield, ADOT Priority Programming Section
Paul O'Brien, ADOT Environmental Planning
Mark Poppe, ADOT Traffic Safety Section
Karim Rashid, ADOT Manager Traffic Design Team 2
Annette Riley, ADOT Roadway Engineering Group, Assistant State Engineer
Karen Williams, ADOT Attorney General's Office Transportation Section
Jim Wilson, ADOT Geotechnical Design Section
Pe-Shen Yang, ADOT Bridge Design Service
Kenneth Potts, ADOT - MPD – Aeronautics Airport Planning Group Manager
Lynn (Ungyo) Sugiyama, ADOT - Trans. Programming
William Downes, ADOT Bridge Group Senior Bridge Designer
Tom Engel, ADOT Safford District Maintenance Engineer
Bill Harmon, ADOT Safford District Engineer
Delores Crumbacher, ADOT Tucson District Transportation Engr. Specialist
Steve Mishler, ADOT Tucson District Project Development
Mick Hont, ADOT Tucson District Asst. DE - Construction
Jerry James, ADOT Tucson District Asst. DE - Operations
Melissa Reuter, ADOT Tucson District Environmental
Ray Schweinsburg, Arizona Game & Fish Department Research Supervisor
John Windes, Arizona Game & Fish Department
Ruben Ojeda, ASLD Right-of-Way Manager
Elizabeth Briones, Border Patrol Assistant Chief Patrol Agent
Jeff Tanner, Border Patrol Supervisory Border Patrol Agent
Hamilton Bradley, City of Benson Director of Public Works/City Engineer
Marcela Fontes, City of South Tucson
Joel Gastelum, City of South Tucson Planning
Mick Jensen, City of South Tucson Planning
Richard Salaz, City of South Tucson Transportation and Flood Control Director
Mary Collins, City of Tucson Assistant to Transportation Director
Andy McGovern, City of Tucson Department of Transportation Eng. Manager
Joseph Doyle, Davis-Monthan AFB 355th Civil Engineer Squadron
Angela Flores, Davis-Monthan AFB 355th Civil Engineer Squadron
Veronica Jankowski, Davis-Monthan AFB 355th Civil Engineer Squadron
Tom Ashbeck, EcoPlan Associates Environmental Planner
David Cremer, FHWA Environmental Coordinator
Jeff Holzmeister, J2 Engineering Drainage Project Manager
Heather Honsberger, Jacobs Public Involvement/Stakeholder Outreach Manager

Vanessa Quinto, Jacobs Roadway & Utilities, Design Engineer
Farhad Moghimi, Pima Assoc. of Governments Executive Director
Cherie Campbell, Pima Assoc. of Governments Assistant Director
Jim DeGrood, Pima Assoc. of Governments Transportation Services Director
Don Freeman, Pima Assoc. of Governments Tech. Services Coordinator
John Liosatos, Pima Assoc. of Governments Senior Transportation Planner
Richard Nassi, Pima Assoc. of Governments Southern Transportation Operations Center
Aichong Sun, Pima Assoc. of Governments
Damon Ballesteros, Pima County Project Manager
John Bernal, Pima County Deputy County Administrator
Ben Goff, Pima County Dep. Dir., Trans Systems
Chuck Huckleberry, Pima County Administrator
Bill Zimmerman, Pima County Regional Flood Control District
Leo Smith, Regional Flood Control District Capital Project Delivery
Randy Heiss, SEAGO Executive Director
Robert McGee, Sun Tran Director of Scheduling
Mary McLain, Sun Tran Asst. General Manager
Jordan Feld, Tucson Airport Authority
Chian-Lee Meng, TY Lin International Associate, Project Manager
Alex Popovici, Union Pacific Railroad
Zoe Richmond, Union Pacific Railroad

FROM:
Brad Olbert, Jacobs Project Manager

SUBJECT:
KICKOFF MEETING NOTES
I-10, Junction I-19 to SR 83
Project No. 010 PM 260 H7825 01L
PHASE I (I-10/SR 210) Feasibility Report and Environmental Overview

INTRODUCTION
The Kickoff Meeting for this project was held at 10:00 AM January 17, 2014 at the ADOT Tucson District Conference Room. The meeting was scheduled to end at 12:00 PM (noon) but it adjourned at 11:30 AM.

The meeting was well represented by agencies interested in improving the I-10 corridor from junction I-19 to SR 83 and improving the Aviation-Barraza Parkway. Agencies include Federal Highway Administration (FHWA), ADOT Engineering, ADOT Tucson District, ADOT Safford District, Pima County, Cochise County, and the Arizona Game and Fish Department. Stakeholders provided critical input for the success of the project.

SUMMARY
David Brauer, ADOT Project Manager opened the meeting at 10:05 AM with a safety moment. Introductions were held for all attendees.

Brad Olbert, Jacobs Project Manager gave an overview of the meeting agenda which was dispersed to all attendees prior to the meeting.

The goals of this study are to identify effective and efficient mobility improvements along the I-10 corridor from the downtown Tucson area towards Vail (SR 83), as well as identify the best alternatives for I-10 and the Barraza-Aviation (SR 210) corridors to carry forward for further evaluation in future Design Concept Report (DCR) Studies.

Phase I of the project included the development of the I-10/SR 210 Engineering Feasibility/Environmental Overview Report. Phase II is comprised of two distinct parts:

- Part 1: preparation of the I-10/SR 210 DCR and Environmental Assessment (EA) from I-19 to SR 83 and 22nd Street to I-10. This covers the urban segment of the corridor.
- Part 2: preparation of the I-10 DCR and Planning and Environmental Linkages (PEL) document from SR 83 to SR 90 (Benson). This covers the rural segment of the corridor.

The I-10/SR 210 Feasibility Report and Environmental Overview were completed in October 2012. This included the presentation of System Alternatives I, II, and IIIc. The I-10/SR 210 Traffic Study was also completed during Phase I of this study, but did not contain the traffic analysis for Alternative IIIc because this alternative was introduced late in the study process. Since System Alternative IIIc was not evaluated at the same level as System Alternatives I and II, this created a biased and unbalanced comparison of alternatives. A traffic study should be completed to the same level for all alternatives considered to provide for a more equitable comparison.

Brad presented the project schedule and emphasized the importance of staying on track since many other projects will be programmed later during Phase II. Highlights are:

- Public Meeting (presented System Alternatives I and II) – Completed October 2011
- Feasibility Report and EO – Completed October 2012
- Feasibility Report and EO Update – completion November 2014
- DCR and Environmental Documents – Begin January 2015

Brad presented the tentative dates for future progress meetings and asked for feedback from the stakeholders. The goal is to establish progress meeting dates so study participants can put them on their calendars early. The tentative dates are:

- March 31, 1-4 PM – PAG Model runs for the System Alternatives
- May 14, 1-4 PM – Third alternative developed and Operational Analysis for Alternatives I & II
- June 25, 1-4 PM – Operational Analysis prepared for Third Alternative

Subsequent to the Kickoff Meeting (2/5/14), Jacobs was notified by PAG that their regional model will not be available for Jacobs to use to update the System Alternatives until the end of February. This will delay the project schedule and the tentative dates listed for future progress meetings. Jacobs will provide updates for the project stakeholders as more information is available.

A project website has been established for the use of the study team (not for public use). This website can be used to download up-to-date project related documents.

- Website: www.jacobsaz.com
- Login: I-10 Corridor
- Password: Empirita

An ADOT website has been set up for the public to get information on the project.

- http://www.azdot.gov/projects/south-central/i-10-and-sr-210-feasibility-study

Brad gave a brief overview of the study team organization, which is listed in the presentation slides provided to meeting attendees.

Brad discussed the key project issues in this study. One issue that needs to be addressed is Pima County desire to see improved access to the Airport / Aerospace / Defense complex south of I-10 and improve mobility west of Kolb Road to the downtown area. Another issue is the Traffic Operations Analysis of Alternatives I and II which will need to be updated using the new PAG 2045 RTP forecasted traffic volumes.

Patrizia Gonella from Jacobs explained the purpose of re-visiting the Traffic Operations Analysis of System Alternatives I and II. The new PAG population projection for the region is approximately 1.4 million residents by 2045. The previously completed traffic analysis was based on a projected 1.8 million residents. Improved model components are also available. This includes thru traffic on I-10, such as trucks, as well as new journey to work data and new future growth allocation data. The Traffic Operational Analysis will be updated to incorporate all of this new information for System Alternatives I and II. An operational analysis will also be conducted for a third alternative that will be discussed later.

Paul Black from Jacobs gave an overview of each of the proposed system alternatives.

System Alternative I:
SR 210 follows the Alvernon Way ROW and ties into I-10 with a system-to-system interchange at the current Alvernon Way interchange
An on-ramp from SR 210 to WB I-10 will be added
SR 210 will be an elevated freeway with four lanes in each direction
I-10 east of the system interchange with SR 210 will need six lanes in each direction
A high voltage transmission line is effected, but there are no other major utility conflicts
There will be some business impacts
Alvernon Way south of I-10 will provide access to Tucson International Airport
Additional R/W is mainly needed for a new interchange at Golf Links/Alvernon Way/SR 210, a new service TI at Ajo Way, and at the new System Interchange for SR 210 and I-10.

System Alternative II:
SR 210 runs close to Davis-Monthan AFB and ties into I-10 with a system-to-system interchange at the current Valencia Road interchange
New ROW will need to be acquired along most of the SR210 alignment
A portion of SR 210 will be depressed along the south side of Davis-Monthan AFB (DMAFB). Away from DMAFB much of SR 210 will be elevated with two lanes in each direction (it will not need to carry Alvernon Way traffic)
I-10 east of the system interchange with SR 210 will need six lanes in each direction
A high voltage transmission line is effected, but there are no other major utility conflicts
There will be many business impacts, and some diminished business access
Poses potential hazmat issues

System Alternative IIIc:

- SR 210 runs close to DMAFB and ties into I-10 with a system-to-system interchange at the current Wilmot Road interchange
- New ROW will need to be acquired along most of the SR 210 alignment
- SR 210 will be a depressed freeway until Valencia Road due to the DMAFB Crash Zone, then it will be elevated to tie into I-10
- No major utilities will be in conflict, but many local utilities will be effected
- SR 210 will cross two floodplains
- I-10 east of the system interchange with SR 210 will need six lanes in each direction
- There will be many business impacts
- Approximately 50 to 60 homes will be impacted by this alternative
- Potential hazmat issues through the industrial area south of DMAFB

System Alternative IV:

- SR 210 follows the Alvernon Way ROW and ties into I-10 with a system-to-system interchange at the current Alvernon Way interchange
- A collector-distributor roadway (C-D) follows I-10 from the SR 210 connection until Kolb Road
- The C-D is intended to separate regional and local traffic to minimize traffic weaving
- Mainline through traffic will stay on I-10 and local traffic will have access to interchanges via the C-D (drivers will be notified of this through signage)
- Mainline I-10 and the C-D will be at the same elevation but separated by a concrete Jersey barrier
- I-10 will have three lanes in each direction and the C-D will have 3 lanes in each direction plus an auxiliary lane
- This is expected to be contained within the existing ROW with the use of retaining walls, however some R/W will be required
- Avoids potential hazmat issues through the industrial area south of DMAFB

A Traffic Operational Analysis will be conducted for Alternative IIIc or Alternative IV, but not both. ADOT provided additional funds to analyze a third alternative. Thus a decision must be made regarding which additional alternative should be analyzed.

Brad opened the session for questions and comments:

Q: Alternative IV seems really great; what are the drawbacks?
A: This alternative will require a wider roadway with additional shoulders plus a concrete barrier adding approximately 30 feet of width in each direction. The additional roadway width translates to additional cost.

Q: Why are there more shoulders with Alternative IV?
A: If you have 6 lanes in each direction but divided into two 3-lane sections, the Jersey barrier between the lanes needs additional inside and outside shoulders on each side. This is more than if you just had 6 lanes next to one another.

Q: How would someone exit at Valencia?

A: Drivers wanting to exit at Valencia, Wilmot, or any other interchange along the CD will need to get onto the CD when it begins. From there they will have standard interchange ramps to access the surface streets.

Q: What would happen to the existing frontage roads?
A: Some frontage road segments will remain in place; while other segments will go away and be replaced with the CD.

Q: Isn't Alternative IV essentially the same as Alternative I but with the CD? Couldn't we apply this CD to Alternative II as well?
A: Yes. This CD could be applied to Alternative II as well.

Q: Why don't we give both Alternative IIIc and Alternative IV to the public to get their input?
A: We don't want to overwhelm the public with too many options. We only have funding to prepare a detailed traffic analysis on one more system alternative. System Alternatives I and II will be carried forward for more evaluation during the DCR stage. This was decided during the previous Feasibility Report. Now we need to decide between System Alternative IIIc and IV for the third alternative to do a more detailed traffic analysis. The feasibility report will be updated with the third alternative and then make recommendations on whether this alternative will be carried forward into the DCR stage and presented to the public for their review and input.

Q: Have you thought about providing overpasses across the freeway for ½ mile streets. A two-lane bridge over I-10 could reduce the traffic volumes on the section line roadways.
A: That is a great comment carry forward into the study.

Q: Would there be signage notifying drivers where to get on the CD?
A: Yes, exactly. Advance signage will be posted indicating that if you want to exit at X, Y, or Z exits, then you need to get on the CD. The center lanes on I-10 are considered to be express lanes.

Q: Would emergency access be provided between I-10 mainline and the CD?
A: Will access points will be provided for emergency vehicles between the mainline and the CD. That is an item that has not been discussed at any length as to the best method to use. A median break concept has been identified for the I-15 project where R/W is very tight. Having generous shoulders for emergency purposes is another.

Q: What if you miss the exit to get on the CD but want to exit within that section?
A: You will have to wait and exit at the next opportunity after the CD. Most people only miss it once and learn from their mistake, especially seasoned truckers.

General Comments:

- ADOT utilities representative indicated that Alternative IIIc would be a nightmare because of all the utility relocations. It would be much easier to deal with one high power transmission line (present with all other alternatives) rather than the many smaller utilities conflicting with Alternative IIIc (fiber, water, sewer, etc.). He said that dealing with all of those smaller utilities would be a nightmare.
- Grades on Alternative IIIc may be an issue with future trucks.
- Arizona Game & Fish Department would like some funding to initiate a wildlife crash study for I-10, especially through the rural area where known wildlife corridors are present.

ACTION ITEM LIST

David Brauer asked everyone to title emails relating to this project with the following subject line

- H7825: I-10, I-19 to SR 83

More information can be added after this in the subject line if desired. David also asked to be copied on any project related emails between one another. The email to contact David Brauer is DBrauer2@azdot.gov

- Comments on the dates for the progress meetings are appreciated.

Signed: Brad Olbert

Brad Olbert, PE, Project Manager

ARIZONA DEPARTMENT OF TRANSPORTATION
205 S. 17th Avenue, Mail Drop 605E
Phoenix, AZ 85007

PROGRESS MEETING NOTES

I-10, JUNCTION I-19 TO SR 83
Project No. 010 PM 260 H7825 01L

JUNE 10, 2014

TO: Progress Meeting Attendees
David Brauer, ADOT Urban Project Management, Project Manager
Scott Beck, ADOT Regional Traffic Engineer
Matt Carpenter, ADOT Planning and Programming**
Shajed Haque, ADOT Drainage**
Mohamad Jawhar, ADOT Engineering Surveying
Pete Mayne, ADOT ROW Project Management Section Coordinator
Robin Raine, ADOT Urban Project Management
Andrew Stastny, ADOT Traffic Design**
Ayman Ghadban, ADOT Safford District Utilities
Emily Dawson, ADOT Tucson District
William Knight, ADOT EPG Tucson District
Rod Lane, ADOT Tucson District Engineer
Steve Mishler, ADOT Tucson District Project Development
Ray Schweinsburg, Arizona Game & Fish Department Research Supervisor
Kristen Terpening, Arizona Game and Fish Department
Mick Jensen, City of South Tucson Planning
Karen Lamberton, Cochise County Transportation Planning**
Mike Dawson, EcoPlan Associates Senior Environmental Planner
Paul Black, Jacobs Roadway Project Engineer
Patricia Gonella, Jacobs Macro Modeling
Shanthi Krishnan, Jacobs Traffic Modeling**
Brad Olbert, Jacobs Project Manager
Betsi Phoebus, Jacobs Environmental**
Sandra Thoms, Jacobs Traffic**
Jamison Brown, PAG Senior Transportation Planner
Aichong Sun, Pima Assoc. of Governments**
Priscilla Cornelio, Pima County Director of Department of Transportation
Robert Young, Pima County Transportation System Division Manager
Tim Bolton, Arizona State Land Department Principal Planner
Davita Mueller, SunTran Planning Analyst
Ana Olivares, Pima County
Song Vong, ADOT Survey Section
Bradley Leonard, ADOT Roadway Engineering Group (in for William Lyons)**

** Attended via teleconference

Not in Attendance
Kenneth Akoh-Arrey, ADOT Drainage Section
David Benton, ADOT Bridge Group
Leroy Brady, ADOT Roadside Development
Paul Burch, ADOT Pavement Design
Chong-Tai Chyan, ADOT Photogrammetry and Mapping
Virgil Coxon, ADOT Chief Surveyor
Barry Crockett, ADOT Contracts and Specifications
John Eckhardt, ADOT ROW
Jennifer Grentz, ADOT Community Relations
Dallas Hammit, ADOT State Engineer's Office
Steve Hull, ADOT C&S
Michael Kies, ADOT Assistant Director of Planning and Programming
Megan Kintner, ADOT Intergovernmental Affairs
Li Vince, ADOT Statewide Project Management Group
William Lyons, ADOT Roadway Engineering Group
Debbie Mayfield, ADOT Priority Programming Section
Paul O'Brien, ADOT Environmental Planning
Scott Orrahood, ADOT
Ashek Rana, ADOT Pavement Design Section
Karim Rashid, ADOT Manager Traffic Design Team 2
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Veronica Jankowski, Davis-Monthan AFB 355th Civil Engineer Squadron
Tom Ashbeck, EcoPlan Associates Environmental Planner
David Cremer, FHWA Environmental Coordinator
Sharon Gordon, FHWA Area Engineer
Jeff Holzmeister, J2 Engineering Drainage Project Manager
Jack Allen, Jacobs Environmental & Planning
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Heather Honsberger, Jacobs Public Involvement/Stakeholder Outreach Manager
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Mary McLain, Sun Tran Asst. General Manager
Jordan Feld, Tucson Airport Authority
Chian-Lee Meng, TY Lin International Associate, Project Manager
Alex Popovici, Union Pacific Railroad
Zoe Richmond, Union Pacific Railroad

FROM:
Brad Olbert, Jacobs Project Manager

SUBJECT:
PROGRESS MEETING NOTES
I-10, JUNCTION I-19 TO SR 83
PROJECT NO. 010 PM 260 H7825 01L
PHASE I (I-10/SR 210) FEASIBILITY REPORT AND ENVIRONMENTAL OVERVIEW

INTRODUCTION

The Progress Meeting for this project was held at 1:30 PM June 10, 2014 at the ADOT Tucson District Conference Room. The meeting adjourned at 2:40 PM.
The meeting was well represented by agencies interested in improving the I-10 corridor from junction I-19 to SR 83 and improving the Aviation-Barraza Parkway. Agencies include ADOT Engineering, ADOT Tucson District, ADOT Safford District, Pima County, Cochise County, City of South Tucson, Pima Association of Governments (PAG), and the Arizona Game and Fish Department. Stakeholders provided critical input for the success of the project.

SUMMARY

David Brauer, ADOT Project Manager opened the meeting at 1:35 PM with a safety moment. Introductions were held for all attendees.
Brad Olbert, Jacobs Project Manager, gave an overview of the meeting agenda which was dispersed to all attendees prior to the meeting.

Brad gave an overview of Jacobs' efforts since the Kickoff Meeting on this project.

- Alternative IIIc has been discontinued and concept development for Alternative IV is underway.
- The PAG model was obtained in February. Some initial bugs needed to be worked out, but it now runs well and duplicates the PAG model output.
- Model has been coded for Alternatives I and II, and Alternative IV will be done this week. This information will then be put into VISSIM to see how the network functions from an operational standpoint.
- Design level mapping for I-10 and SR 210 is underway. Two out of the three flights are complete, and the last flight should be done soon. The project mapping is being supplied by ADOT's Engineering Survey Section. ADOT should have the mapping available by the beginning of next calendar year.

Brad then gave a brief overview of the System Alternatives. He elaborated on the discontinuation of Alternative IIIc and the reasoning behind that decision. System Alternative IIIc did not have any fatal flaws, but it did have many issues that could potentially be expensive unknowns:

- Hazardous material issues south of Davis-Monthan Air Force Base (DM AFB)
- Numerous utility conflicts within local streets that will be crossed
- ROW acquisition from Davis-Monthan Air Force Base
- Alignment passes near areas on DM AFB where explosive ordinance is removed from aircraft

- The alignment route near DM AFB will need to be checked for unexploded ordinance
- Alignment crosses under a major wash near Valencia Road requiring storm flows to be conveyed over the highway

When compared to System Alternatives I and II, Alternative IIIc requires more ROW to be acquired, more businesses and residences to be relocated, and costs over $150 million more to construct. This estimated cost does not include the unknown hidden costs for mediation of hazardous materials, relocation of utilities, and ROW acquisition. Access to Alternative IIIc would be limited to a new TI at Drexel Road and at the I-10 TI.

Brad Olbert said the major point that Pima County desired with the SR 210 connection to I-10 was to greatly improve the access to downtown Tucson. Jacobs introduced Alternative IV as a way to greatly increase access to the downtown by using a collector-distributor concept. Alternative IV follows the same alignment as Alternative I but avoids many of the issues of Alternative IIIc.

Paul Black, Jacobs Roadway Project Engineer, discussed the details of Alternative IV, which will be further analyzed instead of Alternative IIIc. Alternative IV introduces a collector-distributor (CD) which carries local traffic alongside I-10 without interfering with mainline I-10 traffic. Due to the geographic layout of the region, Tucson International Airport and Davis-Monthan Air Force Base create obstacles for commuter traffic that is traveling to and from southeast Tucson and downtown Tucson. Under the current configuration, this commuter traffic must travel on I-10 with regional and truck traffic. This causes weaving on I-10 which results in delays to everyone on I-10.

The CD will run along the outside of the I-10 travel lanes and will be separated from I-10 by a concrete barrier. The CD will have traffic interchanges (TIs) for the major cross streets so all weaving maneuvers done by local traffic will take place on the CD and not impede with the flow of traffic on I-10. This will make that section of I-10 safer, as well as cause the level-of-service (LOS) to improve. Travelers will learn that if they want to exit at any of the TIs between Alvernon Way and Kolb Rd, they will need to get on the CD when it begins.

Southbound SR 210 where it connects to I-10 will tie directly into the eastbound CD. Traffic traveling westbound on the CD will be routed directly to northbound SR 210. There will also be slip ramps for I-10 mainline traffic to get onto and off of the CD around the SR 210 interchange. Where the eastbound CD ends at Kolb Road, the CD will simply merge with I-10 mainline and additional lanes will taper off as necessary. Where the westbound CD begins at Kolb Road, there will be an exit ramp for traffic to get off of I-10 and onto the CD.

The CD is also expandable. As demand requires, the CD can be built out further to the east where there is already plenty of ROW to handle the design.

Alternative IV, with the CD, is naturally a bit wider than the other alternatives due to the additional shoulders, barriers, and retaining walls needed. The ROW needs for this alternative may be greater than the others, but it is still expected to be minimal.

Patrizia Gonella from Jacobs Traffic Planning gave an update of the traffic forecasting assumptions in developing models for the various alternatives. Since the Initial Feasibility Report was completed two years ago, new population projections, improved model components, new journey to work data and new future growth allocation data has become available. The new population projections show a reduction of 400,000 people in the region in 2040.

The study completed back in 2012 indicated the need for more lanes on I-10 mainline and associated ramps than may be necessary with the new projections. The new PAG model causes projected traffic volumes to reduce by 30-60% in some areas for Alternatives I and II, which dramatically improves the LOS for the number of lanes proposed for the earlier study.

Patrizia emphasized the rarity and value of having the model that was developed and analyzed operationally back in 2012 for volumes greater that what is now projected for 2040. This serves as an opportunity for a longer range plan beyond 2040. The feasibility study conducted in 2012 can serve as an ultimate configuration that can be anticipated for need sometime after 2040 when the population increases to 1.8 million. This can prove useful when building for the 2040 configuration with respect to roadway layout alignment and ROW acquisition.

Aichong Sun from PAG indicated that the data given to Jacobs has not been finalized yet and is still considered interim. However, population distribution should not change and any changes should not have a great affect. PAG is still slightly tweaking the model so the final approved numbers will not match the ones in this study, but any variation should be minor.

Brad Olbert indicated that the new numbers obtained from the forecasting model will be coded into VISSIM to see the operational changes associated with the reduction in volumes. There is potential for a reduction in number of lanes both on the mainline as well as on the ramps. The LOS will improve if no geometric changes are made, but there will need to be a balance between improved LOS and reduced cost (i.e. number of lanes).

The next meeting will be held August 12th from 1:00-4:00 PM. This meeting will cover the concept design for Alternative IV, as well as the operational analysis results for Alternatives I, II, and IV.

David Brauer reminded everyone of the project website for the study team. This website can be used to download up-to-date project related documents and has everything on the project from day one until now.

- Website: WWW.JACOBSAZ.COM
- Login: I-10 Corridor
- Password: Empirita

General Comments:

- Rod Lane, ADOT Tucson District Engineer asked a question if anyone had looked into using tolling on either I-10 or the CD roadways as a possible way to raise revenue to construct the project? Mr. Olbert said the funding issue was not a part of our scope of work but there may be some application here.

ACTION ITEM LIST FOR THE NEXT PROGRESS MEETING

- Jacobs will complete the concept design for Alternative IV
- Jacobs will complete the traffic forecasting model for Alternative IV
- Jacobs will conduct the operational analysis for Alternatives I, II, and IV

Signed: Brad Olbert

Brad Olbert, PE, Project Manager

ARIZONA DEPARTMENT OF TRANSPORTATION
205 S. 17th Avenue, Mail Drop 605E
Phoenix, AZ 85007

PROGRESS MEETING NOTES

I-10, JUNCTION I-19 TO SR 83

Project No. 010 PM 260 H7825 01L

August 12, 2014

TO: **Progress Meeting Attendees**

Scott Beck, ADOT Regional Traffic Engineer
Mohamad Jawhar, ADOT Engineering Surveying
Robin Raine, ADOT Urban Project Management
C.T. Revere, ADOT Tucson District Communications
Andrew Stastny, ADOT Traffic Design**
Ayman Ghadban, ADOT Safford District Utilities
Rod Lane, ADOT Tucson District Engineer
Steve Mishler, ADOT Tucson District Project Development
William Knight, ADOT EPG Tucson District
Song Vong, ADOT Survey Section
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Mike Dawson, EcoPlan Associates Senior Environmental Planner
Sharon Gordon, FHWA Area Engineer**
Patricia Gonella, Jacobs Macro Modeling**
Shanthi Krishnan, Jacobs Traffic Modeling
Brad Olbert, Jacobs Project Manager
Betsi Phoebus, Jacobs Environmental**
Priscilla Cornelio, Pima County Director of Department of Transportation
Robert Young, Pima County Transportation System Division Manager
Davita Mueller, Sun Tran Planning Analyst
Shawn Lowery, Arizona Game & Fish Department
Jamison Brown, PAG Senior Transportation Planner
Sandra Thoms, Jacobs Traffic
** Attended via teleconference

Not in Attendance

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Jordan Feld, Tucson Airport Authority
Chian-Lee Meng, TY Lin International Associate, Project Manager
Alex Popovici, Union Pacific Railroad
Zoe Richmond, Union Pacific Railroad

FROM:

Brad Olbert, Jacobs Project Manager

SUBJECT:

PROGRESS MEETING NOTES
I-10, Junction I-19 to SR 83
Project No. 010 PM 260 H7825 01L
PHASE I (I-10/SR 210) Feasibility Report and Environmental Overview

INTRODUCTION

The Progress Meeting for this project was held at 1:30 PM August 12, 2014 at the ADOT Tucson District Conference Room. The meeting adjourned at 3:00 PM.

The meeting was well represented by agencies interested in improving the I-10 corridor from junction I-19 to SR 83 and improving the Aviation-Barraza Parkway. Agencies include ADOT Engineering, ADOT Tucson District, ADOT Safford District, Pima County, Cochise County, City of South Tucson, Pima Association of Governments (PAG), and the Arizona Game and Fish Department. Stakeholders provided critical input for the success of the project.

SUMMARY

Brad Olbert, Jacobs Project Manager opened the meeting at 1:45 PM with a safety moment. Introductions were held for all attendees.

Brad gave an overview of the meeting agenda which was dispersed to all attendees prior to the meeting.

Brad gave an overview of Jacobs' efforts since the last Progress Meeting on this project.
Coding of the PAG regional traffic model with Alternatives I, II, and IV is complete
New lane configuration on I-10 from Kino Parkway eastward has been coded, which includes the reduction of one lane in each direction
The VISSIM traffic operational models for Alternatives I, II, and IV are complete and results are available
Preliminary concept plans for Alternatives I and IV are available
Design level mapping for I-10 and SR 210 is underway. The project mapping is being supplied by ADOT's Engineering Survey Section.

Patrizia Gonella from Jacobs Traffic Planning gave an update of the traffic forecasting assumptions in developing models for the various alternatives. Since the Initial Feasibility Report was completed two years ago, new population projections, improved model components, new journey to work data and new future growth allocation data have become available. The new population projections show a reduction of 400,000 people in the region in 2040 from the 2011 PAG model.

The study completed back in 2012 indicated the need for more lanes on I-10 mainline and associated ramps than may be necessary with the new projections. The new PAG model causes projected traffic volumes to reduce significantly in some areas, which dramatically improves the level-of-service (LOS) for the number of lanes proposed for the earlier study.

Due to the significant reduction in volumes, I-10 mainline was modeled with one less lane in each direction from Kino Parkway and eastward for all alternatives. The new model with the newly modified Alternatives I and II resulted in levels-of-service similar or better than the LOS presented in the previous I-10 Feasibility Report dated 2012. This validates that the lane reduction is an appropriate action to address the reduction in population.

Shanthi Krishnan from Jacobs Traffic Modeling gave an update of the traffic operational analysis efforts. The projected traffic volumes from the 2040 PAG model were utilized to develop a VISSIM model of Alternatives I, II, and IV for the AM and PM peak hours. Measures of effectiveness in terms of LOS were extracted from the VISSIM model. The freeway mainline and ramps were measured by density (passenger cars per mile per lane) while the interchange intersections and immediately adjacent intersections were measured by delay (seconds per vehicle).

Shanthi explained that handouts summarizing the traffic operational analysis were provided to all meeting attendees, and are also available on the project website. There should be eight sheets in each packet, with three total packets (one for each alternative). The first four sheets for any alternative show the projected AADT, AM and PM peak hour volumes, number of lanes, and LOS for the freeway mainline and ramps. The last four sheets show the intersection lane configurations, AM and PM peak hour turning volumes, as well as LOS for the interchange intersections and nearby affected intersections.

Shanthi went over the results of the traffic operational analysis with a summary table. The table shows the worst LOS experienced in a particular segment of the network. For example, in the row for 6th Avenue Ramps it shows LOS B for all alternatives. This means that all ramps associated with the 6th Avenue TI operate at LOS B or better for all alternatives. A few areas are highlighted as problem areas where the worst-case LOS is E or F. Each of these locations will be looked at closely to determine if the LOS is accurate. Some situations may require adjustments to the traffic signal timings to produce better LOS on the approaching ramp. One particular area that is performing poorly in all alternatives is at the Rita Road TI where the WB on-ramp and EB off-ramp operate at LOS E and F. This is a matter of capacity with the high volumes traveling on those single-lane ramps. A second lane has since been added to the design for both ramps. The VISSIM model will be updated to reflect this and the updated results will be presented at the next meeting.

Shanthi emphasized that this is an iterative process of running the VISSIM model to see how the network is operating, then tweaking the geometry to optimize the LOS, then re-running the model with the changes, and so on.

Brad Olbert discussed the I-10 mainline lane configuration for Alternatives I and IV. He pointed out that stretch between the SR 210 and Kolb Road is being modeled with five lanes plus an auxiliary lane in Alternative I, while in Alternative IV it is three lanes on I-10 mainline with three lanes plus an auxiliary lane on the collector-distributor (CD). Alternative IV effectively has one more lane than Alternative I, which does not allow for an unbiased comparison of the alternatives. Therefore, Alternative IV will be re-modeled with one less lane on the CD in order to allow for a more "apples-to-apples" comparison.

Brad gave an overview of the geometric changes being recommended for all alternatives compared to the originally proposed improvements. The number of proposed lanes on I-10 mainline will remain the same from I-19 to Kino Parkway, while one lane will be removed in both directions from Kino Parkway to SR 83.

Increased traffic at the interchanges of Kolb Road, Rita Road, and Houghton Road require modification of the TIs. Kolb Road TI was originally recommended to be a platform diamond TI. It is now being recommended that this interchange be constructed as a diverging diamond interchange (DDI). Brad encouraged those unfamiliar with DDI configurations to research them to understand their operation and associated benefits. DDIs are ideal for high-volume interchanges. They permit free-flow turning movements allowing for two-phase signal operation which reduces delay. This configuration at Kolb Road will allow the utilization of the existing bridge, which will save money compared to the platform diamond TI. The DDI configuration allows the opportunity for bypass through lanes to be constructed as required by traffic demand.

As mentioned in the traffic operational analysis overview, the WB on-ramp and EB off-ramp at Rita Road do not function adequately with the currently proposed single lane ramps. It is recommended that these ramps be increased to two lanes to better serve the high volumes of entering and exiting traffic.

The Houghton Road TI will also experience an increase in traffic compared to the previous model. It is recommended that this interchange be constructed as a DDI to better serve the increased traffic flow. This recommendation will require reconstruction of the bridge, which is currently substandard and needs to be replaced regardless of the proposed interchange configuration.

Brad highlighted the SR 210 in the vicinity of 34th Street and Richey Boulevard. He pointed out that SR 210 is modeled with three lanes in each direction, but this is only possible under the existing Palo Verde Road bridge in the westbound direction if the bicycle lane is removed. He suggested restricting left-turn movements onto Richey Boulevard to minimize delay along SR 210, which may allow for only two lanes in each direction. Brad asked for input and ideas on improving the LOS in this vicinity, and if this proposition is acceptable.

Brad went over the project schedule, which includes completion of the Draft Feasibility Report and EO Update in November 2014. The end of Phase I with the Final Feasibility Report and EO Update are anticipated to be complete in December 2014 or January 2015. Work will begin for the Design Concept Reports and Environmental Documents (Phase II) in January 2015.

The next meeting will be held September 16th from 1:30-3:30 PM. This meeting will be a comment follow-up for the results presented for each alternative. It is strongly encouraged that everyone reviews the provided materials and email any questions or comments to Brad Olbert before that meeting.

Brad Olbert reminded everyone of the project website for the study team. This website can be used to download up-to-date project related documents and has everything on the project from day one until now.

- Website: WWW.JACOBSAZ.COM
- Login: I-10 Corridor
- Password: Empirita

Brad opened the meeting up for general discussion.

Priscilla Cornelio asked what the approval process is for the three alternatives. Robin Raine indicated that the environmental documents and two or three alternatives will be presented to the public. The Environmental

Overview does not go to the board for approval. The stakeholders will need to buy off on the three alternatives. The EIS will need to look at the whole project or part of the project, whichever FHWA decides. Sharon Gordon indicated that David Cremer is the FHWA contact who is going to review this.

Rod Lane asked if this will go to the board if federal funding is used or if this is to be on ADOT's five-year plan. Robin Raine said that it depends on what alternatives go into the DCR, because an implementation plan will be developed with the DCR. Additionally, NEPA documents will need to show a fiscal constraint. It will be hard to program the whole corridor, so it will need to be broken down before it goes into the five-year plan. This will become a roadmap for the future environmental process and will prioritize each project as stand-alone projects. Mike Dawson suggested a programmatic environmental assessment process. Brad Olbert explained that there are items that can be addressed ahead of time such as acquiring ROW and tying down the geometry of the TIs along the corridor. Steve Mishler mentioned that the Houghton Road TI is already in the five-year plan. Priscilla Cornelio mentioned that RTA already has $19 Million of ROW funding programmed for the Barraza-Aviation Parkway.

Brad Olbert indicated that construction cost estimates will be provided for each alternative, but these costs will not include hidden and unknown costs such as ROW acquisition, hazmat mediation, and utility relocation – all of which can be very costly items.

Robin Raine indicated that the stakeholders need to review the material presented and provide feedback to the Jacobs team so that good documents can be taken to the public. Priscilla Cornelio mentioned that she expected Alternative IV to stand out as the best option, but all alternatives are actually very similar in results, and they are all very good options.

Jamison Brown asked if a no-build alternative would be analyzed. Shanthi Krishnan indicated that this was analyzed last time around, and will be updated with the new volumes and presented with all of the findings.

Jamison Brown asked if there was any analysis that shows how much traffic would be reduced on I-10 through downtown Tucson in the vicinity of Grant Road. Brad Olbert and Robin Raine clarified that it is beyond the project study area, which ends at I-19.

ACTION ITEM LIST FOR THE NEXT MEETING

Jacobs will continue fine-tuning the geometry of all alternatives
Jacobs will provide preliminary concept plans for Alternative II
Jacobs will conduct the operational analysis of the no-build scenario
Jacobs will fine-tune the VISSIM models to obtain representative and accurate results
Stakeholders will provide any comments and feedback to Brad Olbert

Signed: Brad Olbert
Brad Olbert, PE, Project Manager

ARIZONA DEPARTMENT OF TRANSPORTATION
205 S. 17th Avenue, Mail Drop 605E
Phoenix, AZ 85007
PROGRESS MEETING NOTES

I-10, JUNCTION I-19 TO SR 83
Project No. 010 PM 260 H7825 01L

September 16, 2014

TO: **Progress Meeting Attendees**
David Brauer, ADOT Urban Project Management, Project Manager
Scott Beck, ADOT Regional Traffic Engineer
Emily Dawson, ADOT Project Development Specialist
Mohamad Jawhar, ADOT Engineering Surveying
William Lyons, ADOT Roadway Engineering Group**
Pete Mayne, ADOT ROW Project Management Section Coordinator**
C.T. Revere, ADOT Tucson District Communications
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Priscilla Cornelio, Pima County Director of Department of Transportation
Heather Ruder, Pima County Traffic Engineering Division Manager
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Davita Mueller, Sun Tran Planning Analyst**

** Attended via teleconference

Not in Attendance

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Paul Burch, ADOT Pavement Design
Virgil Coxon, ADOT Chief Surveyor
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Elizabeth Briones, Border Patrol Assistant Chief Patrol Agent
Jeff Tanner, Border Patrol Supervisory Border Patrol Agent
Bradley Hamilton, City of Benson Director of Public Works/City Engineer
Marcela Fontes, City of South Tucson
Richard Salaz, City of South Tucson Transportation and Flood Control Director
Mary Collins, City of Tucson Assistant to Transportation Director
Andy McGovern, City of Tucson Department of Transportation Eng. Manager
Dennis Donavan, Cochise County Engineer II
James Barker, Davis-Monthan AFB
Joseph Doyle, Davis-Monthan AFB 355th Civil Engineer Squadron
Angela Flores, Davis-Monthan AFB 355th Civil Engineer Squadron
Veronica Jankowski, Davis-Monthan AFB 355th Civil Engineer Squadron
Tom Ashbeck, EcoPlan Associates Environmental Planner
David Cremer, FHWA Environmental Coordinator
Sharon Gordon, FHWA Area Engineer
Jeff Holzmeister, J2 Engineering Drainage
Jack Allen, Jacobs Environmental & Planning
Heather Honsberger, Jacobs Public Involvement/Stakeholder Outreach Manager
Patrizia Gonella, Jacobs Macro Modeling
Vanessa Quinto, Jacobs Roadway & Utilities, Design Engineer
Farhad Moghimi, Pima Assoc. of Governments Executive Director
Cherie Campbell, Pima Assoc. of Governments Assistant Director
Jim DeGrood, Pima Assoc. of Governments Transportation Services Director
Don Freeman, Pima Assoc. of Governments Tech. Services Coordinator
John Liosatos, Pima Assoc. of Governments Senior Transportation Planner
Aichong Sun, Pima Assoc. of Governments
Damon Ballesteros, Pima County Project Manager
John Bernal, Pima County Deputy County Administrator
Ben Goff, Pima County Dep. Dir., Trans Systems
Chuck Huckleberry, Pima County Administrator
Seth Chalmers, Pima County Traffic Engineering Division Manager
Robert Lane, Pima County Traffic Engineering Division Manager
Ana Olivares, Pima County Administrator
Bill Zimmerman, Pima County Regional Flood Control District
Leo Smith, Regional Flood Control District Capital Project Delivery
Randy Heiss, SEAGO Executive Director
Robert McGee, Sun Tran Director of Scheduling
Mary McLain, Sun Tran Asst. General Manager
Jordan Feld, Tucson Airport Authority
Chian-Lee Meng, TY Lin International Associate, Project Manager
Alex Popovici, Union Pacific Railroad
Zoe Richmond, Union Pacific Railroad

FROM:

Brad Olbert, Jacobs Project Manager

SUBJECT:

PROGRESS MEETING NOTES
I-10, Junction I-19 to SR 83
Project No. 010 PM 260 H7825 01L
PHASE I (I-10/SR 210) Feasibility Report and Environmental Overview

INTRODUCTION

The Progress Meeting for this project was held at 1:30 PM September 16, 2014 at the ADOT Tucson District Conference Room. The meeting adjourned at 3:30 PM.

The meeting was well represented by agencies interested in improving the I-10 corridor from the I-10/I-19 junction to SR 83 and improving the Aviation-Barraza Parkway. Agencies in attendance included ADOT Engineering, ADOT Tucson District, ADOT Safford District, Pima County, Cochise County, City of South Tucson, Pima Association of Governments (PAG), and the Arizona Game and Fish Department. Stakeholders provided critical input for the success of the project.

SUMMARY

David Brauer, ADOT Project Manager opened the meeting at 1:35 p.m. Introductions were held for all attendees.

Brad Olbert, Jacobs Project Manager provided a brief safety moment, and then gave an overview of the meeting agenda which was distributed to all attendees prior to the meeting.

Brad gave an overview of Jacobs' efforts since the last progress meeting on this project.

- The VISSIM traffic operational models for Alternatives I, II, and IV were updated by incorporating adjustments at several ramps, control changes to the intersection of Richie Blvd and SR 210, and the addition of a SR 210 WB slip ramp to I-10 change on Alternative IV.
- The VISSIM No Build Alternative was modeled and the results will be presented.
- The preliminary concept for Alternative II is now available for review.
- Adjustment to Alternative IV WB slip ramp is available for review.
- Design level mapping for I-10 and SR 210 continues. The project mapping is being supplied by ADOT's Engineering Survey Section for Phase II (DCR).

Shanthi Krishnan from Jacobs Traffic Modeling gave an update on the traffic operational analysis efforts. The projected traffic volumes from the 2040 PAG model were utilized to develop a VISSIM model of Alternatives I, II, and IV for the a.m. and p.m. peak hours. Measures of effectiveness in terms of LOS were extracted from the VISSIM model. The freeway mainline and ramps were measured by density (passenger cars per mile per lane) while the interchange intersections and immediately adjacent intersections were measured by delay (seconds per vehicle).

Shanthi explained that the VISSIM models for the 2040 No Build Alternative for a.m. and p.m. peak hours were developed. This alternative represents how the existing infrastructure would operate with the traffic volumes projected for 2040. A figure depicting the I-10 mainline LOS for this scenario was presented showing that the western and central portion of the project limits operates at LOS E or F and improves as you move towards the east end.

Shanthi explained that the VISSIM models for Alternatives I, II, and IV were updated with some slight changes to ramps and traffic signal timings. The intersection of SR 210 and Richey Blvd was changed to an unsignalized intersection and the left-turn movement from Richey Blvd onto SR 210 was removed with traffic re-routed onto Alvernon Way. This helped improve the LOS in the vicinity of the intersection and improve traffic progression along SR 210.

Shanthi went over the results of the traffic operational analysis with a summary table. The table shows the worst LOS experienced in a particular segment of the network. For example, in the row for 6th Avenue Ramps it shows LOS B for all alternatives. This means that all ramps associated with the 6th Avenue TI operate at LOS B or better for all alternatives. A few areas identified as problem areas at the last progress meeting are highlighted to indicate where the worst-case LOS was E or F. Each of these locations was looked at closely to determine how to remedy the issue. Many situations simply required adjustments to the traffic signal timings to produce better LOS on the approaching ramp. One particular area that was performing poorly in all alternatives is the Rita Road TI where the WB on-ramp and EB off-ramp operate at LOS E and F. This was a matter of capacity with the high volumes traveling on those single-lane ramps. A second lane has since been added to the design for both ramps and now results in LOS C or better for all alternatives. Now all ramps, TI intersections, and I-10 mainline operate at LOS D or better for all alternatives, which meets the requirements set forth in the ADOT Roadway Design Guidelines (RDG).

Brad pointed out that figures summarizing the updated traffic operational analysis were provided to all meeting attendees, and are also available on the project website. There are figures depicting the projected AADT, a.m. and p.m. peak hour volumes, number of lanes, and LOS for the freeway mainline and ramps. Additionally, the intersection lane configurations, a.m. and p.m. peak hour turning volumes, and LOS for the interchange intersections and nearby affected intersections are shown. Another set of figures shows a summary of a.m. and p.m. peak hour mainline LOS for each alternative. This allows for a quick, side-by-side comparison of the different alternatives.

Shanthi emphasized that this is an iterative process of running the VISSIM model to see how the network is operating, then tweaking the geometry to optimize the LOS, then re-running the model with the changes, and so on. When we first started the VISSIM modeling the top priority was to determine the number of lanes on the mainline to ensure meeting RDG guidelines. The second priority was to make sure the TI ramps were operating at an acceptable level. The next step is to look more closely at the lane configurations at each of the TI intersections. Some lane configuration layouts may have the opportunity to be adjusted to reduce the number of turn lanes.

Paul Black, Jacobs Roadway Project Engineer gave an overview of Alternative II. This alternative routes SR 210 differently than Alternatives I and IV. It ties into I-10 farther to the east between Alvernon and Valencia. Everything east of the Craycroft TI is the same with this alternative as it is in Alternative I.

Paul then went over the diverging diamond interchange (DDI) layout that is being utilized at the Kolb and Houghton TIs. These interchanges have very high volumes of turning movements as well as through-traffic, which is facilitated by a DDI configuration. Paul went over the operations of a DDI and how vehicles would navigate different turning movements. He indicated that the North Carolina Department of Transportation has very good information online about DDI operations and benefits, and he encouraged attendees to look into this by Googling "diverging diamond interchanges".

Karen Lamberton, Cochise County, pointed out that the DDI configuration may be a hard sell to the public. She posed concern on whether the public would be able to figure out how to navigate through one of these interchanges. She also mentioned that there may be possible air quality benefits with this configuration since there is less traffic delay – which would be a good selling point in the City of Tucson. Paul pointed out that DDI configurations are highly channelized with smaller intersections making it easier to negotiate than wide open configurations such as a SPUI interchange or a roundabout.

Mike Dawson, EcoPlan, asked about the reasoning of the new skew layout of Houghton Rd TI and how it will tie into existing Houghton Rd. Paul indicated that this is just a concept and that the new layout does not have to follow this layout. The DCR process will be used to select the appropriate configuration. The new alignment will need to be offset from the existing bridge to maintain traffic during construction of the new alignment.

Scott Beck, ADOT, pointed out that one benefit of the CD road configuration in Alternative IV is there is an accident on I-10 mainline in that section, all traffic can be routed onto the CD.

Paul went over the preliminary construction cost estimates for each of the alternatives. He pointed out that the I-10 construction costs for Alternatives I and II are fairly similar, with Alternative I being approximately 3% higher than Alternative II. The construction cost of Alternative IV is higher than Alternatives I and II for the following reasons:

- The CD road concept requires additional width for separating the CD roadway from the mainline roadway.
- Additional ramps are required between the CD roadways and the mainline roadways.
- The additional width of the total roadway cross section requires additional retaining walls to stay within the existing I-10 corridor.

The construction cost of the SR 210 segment is similar for Alternatives I and IV. They are both more expensive than the construction cost of the SR 210 segment for Alternative II.

Paul emphasized that the cost estimates being shown do not include any right-of-way acquisition, property relocation, utility relocation, or hazardous material remediation. These unknown costs are expected to be higher in Alternative II than Alternatives I and IV, which is important to keep in mind. Additionally, Alternative II requires right-of-way to be acquired from the Davis-Monthan Air Force Base which is a very lengthy process.

David Brauer, ADOT, asked if this project would require an EIS. Mike Dawson said that a programmatic EIS could be done for the whole project but later smaller EAs would look at smaller project segments. Betsi Phoebus, Jacobs Environmental, added that FHWA would ultimately determine the appropriate level of NEPA documentation based on the team's preliminary identification of impacts.

Karen Lamberton asked if ADOT teams with FHWA to plan ahead to purchase ROW for projects like this. She indicated that there are already properties for sale in the area of this project and it might make sense to purchase them when they are openly available rather than later when they are not. Priscilla Cornelio, Pima County, said that it is up to ADOT to decide to take the available RTA money and purchase properties. Betsi Phoebus added that there is risk to early right-of-way acquisition because the alternatives selected for further study and/or the eventual preferred alternative may not include the areas of advanced right-of-way purchase. David Brauer indicated that early acquisitions used to be more common but are not anymore due to potential risks.

Brad Olbert addressed the attendees and explained that when you reduce the number of alternatives that you bring to the public, it tends to reduce confusion. Fewer alternatives also have the potential to simplify the requirements for the environmental process. He mentioned that at the last progress meeting Robin Raine of ADOT Urban Project Management indicated that ADOT would prefer to reduce the number of alternatives brought forward to the DCR stage. Brad pointed out that for each alternative we know a ballpark cost, the LOS results, a gut feeling of social/public feedback, and how well it meets the purpose/needs set forth in the project goals. He emphasized that Alternatives I and IV are very similar to one another, and both are very different than Alternative II.

Priscilla asked if it is okay to narrow our study down to two alternatives, and Mike Dawson indicated that one alternative plus the no build alternative is acceptable. Betsi Phoebus added that until FHWA has the opportunity to determine the appropriate level of NEPA documentation, the project team should consider retaining at least two build alternatives.

Priscilla voiced her concern of eliminating an alternative before going to the public with what we have come up with. Betsi Phoebus indicated that as long as we have comprehensive documentation as to why an alternative was dropped, then that documentation can be used as part of the NEPA alternatives selection process.

David Brauer pointed out that the cost difference between Alternative II and Alternative I or IV will likely reduce as we start looking at things in more detail. There is approximately a 10% difference between Alternatives II and IV now, but that may reduce with the unknown costs factored in.

Paul Black mentioned that Alternative IV helps improve mainline LOS which is beneficial for regional traffic. There are options for phased construction for building the CD system which will allow for sustained use of I-10.

David Brauer mentioned that he would like to drop Alternative I from consideration since it is so similar to Alternative IV but does not meet the purpose and need of the project as well as Alternative IV does. Mike Dawson asked if the CD would be a hard sell to the public. Brad Olbert mentioned that the people of Tucson got a taste of the CD layout on I-10 from I-19 to the Miracle Mile during the reconstruction work where the frontage roads were used for local traffic and the mainline lanes were used as express through lanes with no exits, and that worked out well.

Jamie Brown, PAG, pointed out that he does not feel comfortable making a decision now to eliminate an option. He would like to see a table that summarizes and compares all alternatives based on the business impacts, cost, ROW requirements, air quality impacts, etc. He feels this would help in making an informed decision about eliminating an alternative.

Scott Beck asked why we would throw out Alternative I over Alternative IV. Brad Olbert said that Alternative IV serves the project purpose and need more than Alternative I, and it is also the safer alternative in terms of less weaving maneuvers on the I-10 mainline. Scott thought the $55 million difference was a strong reason to keep Alternative I.

David Brauer reiterated that he would like to eliminate Alternative I to simplify the study efforts. He said that we will be sure to document the alternative and the reasons for dropping it in the Feasibility Study. Priscilla indicated that she would still like to have a public meeting before dropping any alternatives. She said she would feel more comfortable being more transparent to the public on the decisions being made. After the public meeting she said she may even feel comfortable eliminating two of the alternatives. David said that it would be possible to have a public meeting before the completion of the Feasibility Study instead of after.

Brad Olbert brought up the idea of a new method of public outreach other than a traditional public meeting. He said that this process can be set up online where people can visit a webpage and see the project information that would typically be at a public meeting, and they can give us comments through that website. This would be a great method for reaching out to a larger group of people – even people that do not necessarily live in the area but travel often through it.

Brad asked if we would like to move forward with having a public meeting before eliminating an alternative. The general consensus of the room was that yes, a public meeting first is preferred. Brad mentioned that this is where we need to get Sharon Gordon and David Cremer from FHWA involved more.

David Brauer stated that many details need to be worked out in regards to having a public meeting. Since the year is winding down and the holidays are fast approaching, scheduling a public meeting may be difficult. This could be a push for us to try the online public outreach method. Regardless, a public meeting or online public outreach throws a wrench in our schedule, so this is something that we will need to look into and work out.

This was the last scheduled progress meeting, but another one may he held in the future depending on what we decide to do with the public involvement.

Brad Olbert reminded everyone of the project website for the study team. This website can be used to download up-to-date project related documents and has everything on the project from day one until now.

- Website: www.jacobsaz.com
- Login: I-10 Corridor
- Password: Empirita

ACTION ITEM LIST FOR THE NEXT MEETING

- Jacobs will fine-tune the VISSIM models at the traffic interchange intersections
- Jacobs and ADOT will look into the options for some sort of public involvement before eliminating an alternative
- Stakeholders will provide any comments and feedback to Brad Olbert

SIGNED: Brad Olbert

Brad Olbert, PE, Project Manager

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