

## Meeting Notes

**Meeting Date:** September 22, 2009

**Subject:** Commuter Rail System Study – SRT Meeting #2

**In Attendance:**

Kevin Wallace, MAG

Marc Pearsall, MAG

Rick Pilgrim, URS

Tim Baldwin, URS

Matt Carpenter, URS

Jennifer Pyne, URS

David Schwartz, Goodman Schwartz

Megan Casey, Goodman Schwartz

Stuart Boggs, RPTA

Jim Mathien, METRO

Mitch Wagner, MCDOT

Denise Lacey, MCDOT

Bill Leister, CAAG

Ken Galica, City of Avondale

Sean Banda, Town of Buckeye

Mark Thompson, Town of Florence

Matthew Dudley, City of Glendale

Kellee Kelley, City of Maricopa

David Moody, City of Peoria

Lorenzo Barcellone, City of Phoenix Aviation

Connie Randall, City of Phoenix Public Transit

Mark Melnychenko, City of Phoenix

Bob Maki, City of Surprise

Mike Celaya, City of Surprise

Dawn Coomer, City of Tempe

Jeff Martin

### Introduction

Tim Baldwin, MAG Study Team, initiated the meeting by introducing the presentation which followed the agenda as outlined:

- Overall Project Schedule
- Existing and Future Conditions Overview
- Ridership Forecasting
- Vehicle Recommendations
- Maintenance Facility Options
- Next Steps

### Overall Project Schedule

Tim Baldwin reviewed the project progress since the June 30 SRT Meeting. The MAG Study Team has completed its review of existing and future conditions along the rail corridor, completed two rounds of ridership forecasting modeling, and has assessed vehicle technology and maintenance facility options. The Study Team is currently developing cost estimates, is conducting the final round of modeling, and is initiating implementation analysis of system alternatives.

Tim Baldwin also reviewed the overall project schedule, which is currently on schedule, with final reports expected to be completed in January 2010.

## **Existing and Future Conditions Overview**

Tim Baldwin reviewed the map of the System Study Corridors and outlined the existing and future conditions. With respect to demographics, from 2007 to 2030 population and employment increases are expected throughout all corridors ranging from a 20% to 34% increase in population and employment (in the Chandler corridor), to a 103% and 76% increase (Yuma West corridor).

With respect to land use (projected to 2030), the Grand Ave and Yuma West corridors are expected to experience the highest increase in residential land use compared to other corridors, and the Tempe corridor is expected to experience the lowest change in land use.

In examining railroad characteristics, all corridors experience active freight activity, although traffic is lightest along the Yuma West corridor. Existing railroad facilities could affect commuter rail service implementation.

Regarding transit, fixed route transit service currently exists within the Tempe, Chandler and Southeast corridors. Transit service within the Grand and Yuma corridors is expected to improve with planned super-grid regional bus service. Tim explained that these conditions will be used in the analysis for station location and the study will examine integration of a commuter rail system with the existing transit system.

Tim also reviewed a chart showing comparisons with peer cities' recent commuter rail systems, which reveals no correlation between the number of miles of track and ridership figures. Stuart Boggs with RPTA suggested adding a column to the table showing the number of trips per day for each system as an additional comparison with the peer cities.

## **Ridership Forecasting**

Jennifer Pyne, MAG Study Team, presented an overview of the ridership forecasting process. The first step consists of preliminary model runs, which look at maximum service tests. Base model runs are the second step, which begin to look at interlined scenarios. The last step consists of sensitivity test model runs. Once all three steps are complete, a systems analysis and corridor prioritization can take place.

The preliminary model runs have been completed. The results indicated that, in the Grand Ave corridor, the West Wickenburg and Downtown Wickenburg stations were low-performing stations with fewer than 100 daily boardings. In the Yuma West corridor, Arlington station was the lowest-performing station with fewer than 50 daily boardings. As a result of these findings, the Grand Base Scenario was shortened to Wittmann, and the Yuma Base Scenario was shortened to Buckeye.

Jennifer also reviewed a list of base model runs. There are five one-corridor alternatives: Grand Ave (Wittmann to Central Phoenix), Yuma West (Buckeye to Central Phoenix), Southeast (Downtown Queen Creek to Central Phoenix), Tempe (West Chandler to Central Phoenix) and Chandler (Sun Lakes to Central Phoenix). There are also three multi-corridor alternatives in the base model runs: Grand-Yuma-Southeast, Grand-Yuma-Southeast-Chandler, and Grand-Yuma-Southeast-Tempe. The base model runs include 2030 RTPA and RTP improvements, and all assume headways of 30 minutes on-peak and 60 minutes off-peak. The MAG Study Team distributed a list of stations on each corridor with station-to-station travel times.

Jennifer reviewed the inputs and assumptions for each corridor, along with 2030 daily ridership and station boardings (summarized below).

Corridor	Miles	Travel Time	# Stations	Daily Boardings
Grand Ave	36	42 min	8	2,830
Yuma West	31	47 min	9	1,420
Southeast	34	46 min	10	6,450
Tempe	18	29 min	7	950
Chandler	31	50 min	10	2,240

The boardings were also broken down by station location. The Grand Ave daily boardings are 2,830, and show that riders are getting on and off throughout the corridor. Yuma West has a more traditional pattern. The Southeast corridor is the strongest overall. Tempe is the lowest with only 950 daily boardings, and the Chandler pattern is similar to Grand Ave.

The MAG Study Team compared each corridor's daily boardings to peer cities of Dallas, Los Angeles and Seattle using boardings per revenue mile, which allows systems of different lengths to be compared. This comparison shows that the Phoenix-area system is in sync with peer cities, with three corridors above the national average of 1.5 boardings per revenue mile.

Tim Baldwin clarified that the model shows daily boardings in both morning and afternoon.

Densise Lacey, MCDOT asked if the model captures riders from the dropped stations on the Grand Ave and Yuma West corridors who may still drive to the next station to board. Rick Pilgrim, MAG Study Team, answered that the model is a complicated system that takes into account many factors, including those that may drive to a station, use transit or walk from other locations. Marc Pearsall, MAG urged the SRT members to keep in mind that the preliminary model runs are looking at each corridor individually. Once the corridors are interlined in the next runs the results will look different.

Sean Banda, Town of Buckeye asked about the Liberty Station on the Yuma West Corridor. Marc Pearsall said that location was used as a placeholder as requested. Sean explained that a large development will be coming into West Buckeye and that should be taken into account. Kevin Wallace, MAG explained that the model is based on the MAG 2030 Regional Forecast, which was vetted by the MAG Regional Council. Sean Banda said that MAG Forecast is likely not using all the socio-economic and land use development that has been updated in recent years. Tim Baldwin said that all corridors will likely have similar issues, but the MAG Forecast provides a baseline to look at. In an effort to include as much feedback as possible, an additional SRT meeting will be held on October 8 to discuss sensitivity comparisons using land use and other transit services. MAG would prefer not to make isolated changes to the model and suggested that it may be more appropriate to consider some off-model evaluation. Kevin Wallace expressed that any changes to the MAG model data may need to be reviewed by the MAG Regional Council.

Dawn Coomer, City of Tempe expressed surprise at the low demand for the Tempe corridor where it parallels the I-10. Rick Pilgrim explained that the model is overlaid on the Regional Transportation Plan, so any project included in the RTP is included in the MAG model. As a result, commuter rail is estimated as an additional mode of transportation and not a replacement for other modes.

Lorenzo Barcellone, City of Phoenix asked how the station locations were chosen. Jennifer Pyne answered that MAG and URS identified the station locations. Tim Baldwin further explained that the model recognizes station locations as nodes with a half-mile radius, not as a specific location. Marc Pearsall added that the station locations are placeholders based partly on input from the cities. Marc also clarified that the Sky Harbor location was mislabeled as 44<sup>th</sup> St, when it should be 38<sup>th</sup> St.

Tim Baldwin explained that the base model runs stayed within Maricopa County, but that the next run will extend at least to Coolidge in Pinal County.

Mark Melnychenko, City of Phoenix asked whether the model includes any bus or other connections to commuter rail. Rick Pilgrim answered that no new routes were added for connection.

Ken Galica, City of Avondale, asked if the model includes people who may choose transit even if driving is faster. Rick Pilgrim explained that the model looks at cars per household and related income and uses those figures to match propensities in the model.

Rick Pilgrim said that total combined ridership for all corridors was not calculated, but they will look into getting that figure.

Lorenzo Barcellone asked why the Central Phoenix boarding numbers are low. Tim Baldwin answered that the model shows a lot of intra-corridor traveling. Kevin Wallace,

MAG, added that, unlike other peer city regions, the Phoenix area has multiple large employment centers in addition to Downtown Phoenix, which will affect boardings. He also noted that transfers in Central Phoenix are higher than the number of walkers.

Jennifer Pyne continued with the presentation, showing a chart displaying peak and off-peak boardings per revenue mile. There is significantly more on-peak travel in all five corridors.

Mode of access during the peak period travel was broken down by transfers, walkers and drivers for all five corridors and also compared with Seattle's system. Dawn Coomer, City of Tempe stated that she believes the model may be overestimating the walk access in the Tempe corridor.

Mark Melnychenko asked about the transfers, and Kevin Wallace replied that all types of transfers are included, but there is no breakdown between bus, light rail, etc.

Jennifer Pyne reviewed PowerPoint slides showing the peak period mode of access for each station in each corridor. Ken Galica asked what the maximum walking distance is estimated at in the model. Jennifer answered that it is a half mile.

Lorenzo Barcellone asked if bicycles were included in the estimates. Tim Baldwin said that bikes are included related to walking distance. Stuart Boggs, RPTA asked what experience the peer cities have had with bicycles. Tim answered that there is no hard data, just observations. Some systems have ordered special cars to accommodate the bike demand. Jim Mathien, METRO added that it will depend on activity centers; there is higher bike usage in the East Valley. Tim added the numbers can also change with gas prices.

Jennifer Pyne presented the Base Model Run Observations. The Southeast, Grand Ave and Chandler corridors are the strongest and rank well in boardings per revenue mile compared to peer cities. Throughout the System there is heavy peak use and low off-peak use. In multi-corridor scenarios, all corridors except Chandler show an increase in ridership. The Southeast corridor is likely drawing ridership from Chandler. The Grand Ave and Tempe corridors have strong bus and light rail connections.

Overall, the Grand Ave corridor shows good ridership. There is strong ridership throughout the middle of the corridor (Glendale to Downtown Surprise), and the highest boardings take place at the Downtown Glendale and Downtown Surprise stations.

The Yuma West corridor has lower overall ridership than the other corridors. Highest boardings are at the Central Phoenix and Downtown Goodyear stations.

The Southeast is the strongest individual corridor in the system, with the highest boardings at the Downtown Tempe and Gateway-ASU Polytech stations.

The Tempe corridor has the highest boardings at the Downtown Tempe and West Chandler stations.

The Chandler corridor has the highest boardings at the Downtown Tempe and Downtown Chandler stations.

An examination of commuter rail and light rail system-wide in the 2030 base model indicates that light rail boardings will remain stable. This shows that commuter rail is not pulling ridership from light rail but rather attracting new riders.

The next steps in the ridership forecasting process include: base model scenario refinements, interlined model scenarios and sensitivity test model runs, potential future extensions and a Systems analysis and corridor prioritization. Dawn Coomer asked what the criteria will be for prioritization of the corridors. Tim Baldwin said there will be numerous criteria, likely including boardings per revenue mile, results from the interlined model runs and cost-benefit and capital investment analysis. Cost effectiveness will likely be the top criteria, based on primary capital and operating costs. The study team will get a dollar figure per rider and compare that with other cities. Other factors will also be included in the criteria.

Dawn Coomer asked whether the modeling or other process is evaluating land use and economic development components in each corridor. Tim Baldwin answered that that is a quantitative analysis, so traditionally that would not be evaluated. However, the study team is going to do additional testing and look for criteria that have different results. They should have the initial analysis at the next SRT meeting for input.

Mark Melnychenko asked if commuter rail is used for special events traffic. Tim Baldwin answered that in some of the peer cities it has been used a lot for that purpose. The MAG model does not specifically measure that for this system, at least not in the runs completed to date. Rick Pilgrim added that would be another off-model prospect for the sensitivity testing.

Dawn Coomer asked whether relatively low ridership was the result of competition from other transit in the model. Rick Pilgrim replied that competing transit can be examined in the sensitivity tests as well.

Kevin Wallace again suggested an additional SRT meeting (set for October 8) before running the last model. Sean Banda, Town of Buckeye agreed this would be a good step. The Southwest Valley plans are all being updated and they wouldn't want to miss an opportunity on commuter rail because new projects are not being considered. He commented that Brain Rose, who heads transit for Buckeye, has not been contacted at all and that the study is not getting enough input from Buckeye. Kevin Wallace said that the cities/towns along each corridor provided the bulk of the contact information for the appropriate people in each city. As we proceed we will add others to the distribution list to ensure inclusion.

## **Vehicle Recommendations**

Tim Baldwin presented the vehicle technology recommendation. Locomotive hauled coaches (LHCs) are powered by one diesel-electric locomotive engine, which pulls the train in one direction and pushes the train in the other. A cab car with operating controls is put on one end of the train and a locomotive at the other end. LHCs can run with 2 to 12 cars with a seating capacity of 140 passengers in each double-deck passenger car. LHCs are Federal Railroad Administration-compliant, meaning they meet federal requirements for crashworthiness and can share tracks with freight trains and operate concurrently with freight traffic. LHCs are used extensively in commuter rail systems throughout the US using off-the-shelf proven technology.

Tim Baldwin presented information on LHC clean diesel technology. There are new EPA clean diesel standards. The Maryland Area Regional Commuter (MARC) Rail System introduced new fleets of “green” locomotives that can reduce emissions over current fleet. Several commuter rail systems throughout the US are testing the use of alternative fuels.

Ken Galica expressed interest in cost-sharing with other cities for the vehicle purchase. Tim Baldwin said there will be some opportunities to do so in Seattle, Dallas and others. Florida’s system is selling cars as they scale back their service, so purchasing used cars may also be an option.

Tim Baldwin said the engines on the LHCs have the same noise levels as other locomotives, where most (about 90%) of the noise comes from the horns.

Lorenzo Barcellone asked if the cost estimates require a second track. Tim Baldwin replied that they do in some places. The rail team is examining options for passing and working with freight operations in an effort to look at a real cost.

## **Maintenance Facility Options**

Tim Baldwin presented information on commuter rail maintenance facility (CRMF) options. A CRMF facility would repair, maintain, clean, fuel and store commuter rail vehicles. A facility near downtown Phoenix would make the most sense with so many corridors in the system.

There is also a need for layover facilities that are smaller than a maintenance facility. These would be used for vehicle storage and minor vehicle cleaning and inspection. Layover facilities at the end of the line would store at most half of the fleet so they are ready for the morning runs. They could also be used at other points along the corridors.

Several potential locations for layover facilities were shown on the system map. These facilities are being taken into account in the cost estimating work being done.

### **Next Steps**

The next steps for the study are to: complete the final round of model runs, complete preliminary capital and operating cost estimates, conduct implementation analysis and screen and prioritize alternative system corridors.

The next regularly scheduled System Review Team (SRT) meeting is Monday, November 16, 2009 at 1:30 pm.

A special SRT meeting will be held on Thursday, October 8, 2009 at 9:00 am to discuss modeling.