
Final Report

**RPTA Park-and-Ride
Reprioritization Study**

Prepared for

**REGIONAL PUBLIC
TRANSPORTATION AUTHORITY**



Prepared by



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1. Introduction

It is difficult to overstate the importance of adequate passenger facilities in creating a successful transit network. Limited-stop services such as freeway express buses are dependent upon the availability of park-and-rides to ensure passenger access to the service. The lack of adequate parking facilities could result in low ridership or passenger trespassing through “hide-and-ride” where passengers park their vehicles in unauthorized private parking lots or residential neighborhoods. Most importantly, the uncoordinated implementation of passenger facilities and services can impact the public’s perception of the regional transit system and prevent the system from reaching its maximum operating potential.

The Regional Transportation Plan (RTP), which was adopted by the Maricopa Association of Governments (MAG) Regional Council in 2003, and which is funded by an extension of the county-wide half-cent sales tax passed by Maricopa County voters in 2004, identifies 13 regional park-and-ride lots to be developed over the twenty-year life of the plan. The Park-and-Ride Re-prioritization Study is an effort to ensure that implementation of RTP capital facilities is aligned with the phasing of supergrid, express bus, and arterial BRT bus service operations that they will support. Specifically, the objectives of this effort are to develop implementation priorities for the 13 regional park-and-ride facilities identified in the RTP and funded by Proposition 400. The study updates the recommendations of the 2001 MAG Park & Ride Plan, which was developed prior to adoption of the RTP and passage of Proposition 400.

In addition to the primary goal of re-prioritizing the 13 park-and-ride lots, the Park-and-Ride Re-prioritization Study also describes the Valley’s overall park-and-ride network and makes recommendations to facilitate implementation.

2. Project Process

To determine the appropriate implementation schedule for the park-and-ride lots funded by the Public Transportation Fund (PTF), the project team reviewed existing planning documents, ongoing planning projects from RPTA and its member agencies, and MAG to examine the following:

- Planned implementation of regionally and locally funded transit services and facilities.
- Transportation infrastructure: Current and programmed road and freeway improvements.
- System Connectivity: Identify which routes will be using each park-and-ride facility.

In addition to reviewing documentation relevant to transit implementation, the project team gathered input from public agencies through group and face-to-face meetings, as described below.

TAG Meetings

To examine the assumptions made during the project and allow input to the process, a Technical Advisory Group (TAG) for the project was formed. The TAG consisted of representatives from each of the member cities that were allocated funding for a park-and-ride facility in the RTP. In addition to the cities, representatives from Maricopa County Department of Transportation, MAG, Arizona Department of Transportation, and Valley Metro Rail were invited to participate in the TAG.

A kickoff meeting was held with the TAG in January 2006; three TAG meetings followed in August 2006, October 2006, and March 2007. The project was on hold during the period in which the RTP Evaluation took place (see section 2.1). To ensure coordination between the Park-and-Ride Re-prioritization Study and a related study, the Freeway Express Bus/BRT Operations Plan, TAG meetings for the two projects were held jointly in October 2006 and March 2007. This was done to ensure that the planning assumptions and subsequent implementation recommendations were coordinated.

Meetings with Individual Cities

In addition to the TAG meetings, the consultant team met with representatives from each of the cities individually. The purpose of these meetings was to understand local conditions and needs, particularly with regard to local transit projects and local land costs. At each of these meetings, the participants discussed current park-and-ride status, trends in land costs, and the local jurisdiction's preferred solutions and park-and-ride timing.

2.1 Reconciliation with 2007 Regional Transportation Plan Evaluation

The transit element of the RTP provides an overview of the planned regional public transportation services and infrastructure improvements through the year 2025. The 2007 Regional Transportation Plan Evaluation ("2007 RTP Evaluation") was undertaken by a separate consultant to examine the assumptions made regarding operations and capital infrastructure in the RTP transit element and the associated Transit Life Cycle Program (TLCP).

To ensure consistency with the findings of this baseline-setting study, the project team reviewed the findings and recommendations contained in the final report of the 2007 RTP Evaluation. With a few exceptions, the Park-and-Ride Re-prioritization Study endorses the findings and recommendations of the 2007 RTP Evaluation: Where the Park-and-Ride Re-prioritization Study differs from the 2007 RTP Evaluation, the differences are noted in the text.

3. Findings & Recommendations

3.1 Revised Implementation Schedule

In general, this study supports the implementation suggested in the 2007 RTP Evaluation. However, several changes reflect updated information and are described in the findings and recommendations below.

Finding: Several changes affecting the implementation of the PTF-funded park-and-ride lots

1. The "Cactus/101" park-and-ride lot was previously swapped in priority with the "Scottsdale Road/101" park-and-ride lot. Therefore, the implementation schedule should be updated to reflect that.
2. The park-and-ride facility at Peoria/Grand has been delayed until 2023, and is now located at Cactus/Loop 101 in Peoria.
3. The park-and-ride lot previously located at Northern/Loop 303 in Glendale will now be located at Arrowhead Mall, and will be implemented in 2013 as a parking structure.

Recommendation: *Revise implementation schedule for park-and-rides*

The implementation schedule should be updated to reflect the changes above, as shown in Table 1.

Table 1: Revised schedule of park-and-ride implementation

	Facility location (estimated)	Jurisdiction	Year of Construction
1	Happy Valley/I-17	Phoenix	2009
2	Scottsdale Rd/101	Scottsdale	2009
3	Price/202 ("Tumbleweed" site at McQueen/Germann)	Chandler	2009
4	Grand/Surprise	Surprise	2008
5	Country Club/US 60	Mesa	2011
6	East Buckeye	Buckeye	2011
7	Bell Rd./101 ("Arrowhead" site at mall)	Glendale	2013
8	Glendale/Grand	Glendale	2013
9	Camelback/101	Phoenix	2015
10	Laveen/59th Ave	Phoenix	2016
11	Elliot/I-10	Phoenix	2017
12	Val Vista/202	Gilbert	2018
13	Cactus/101 (West loop of 101)	Peoria	2023

A map of the park-and-ride facilities funded by the public transportation fund (PTF) is shown in Figure 1.

A list of services associated with each park-and-ride lot is shown in Appendix I. In some cases, a shared-use or other temporary facility may be required for express bus or bus rapid transit services that begin operating before park-and-ride facilities are fully constructed.

3.2 Park-and-ride Capital Costs and Funding

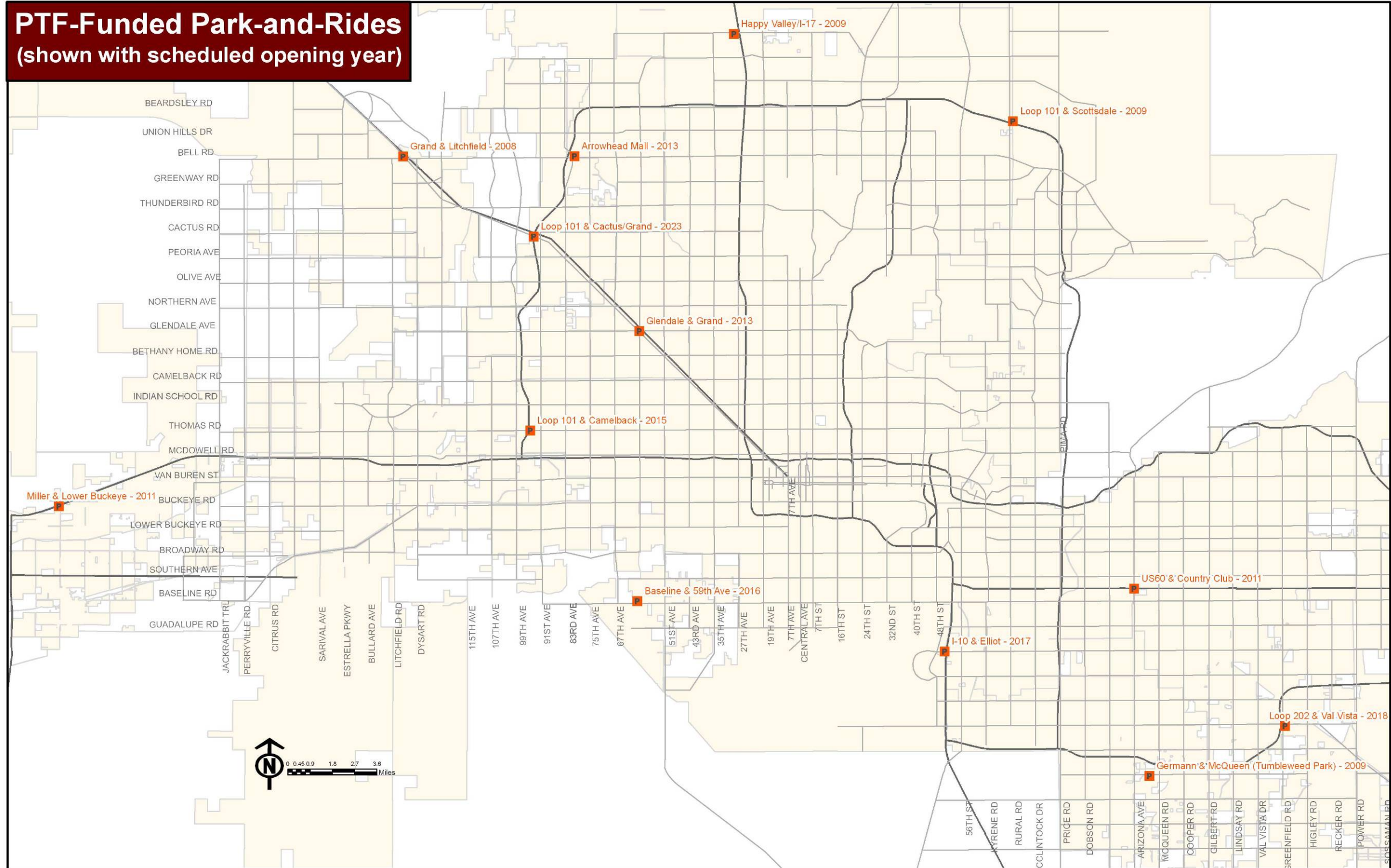
The 2007 RTP Evaluation recommended that a fixed amount of funding be allocated per park-and-ride facility, as follows: "The capital cost for park-and-ride facilities should be a flat per unit investment, adjusted annually for inflation, with a PTF funding limit designated per facility. Under this recommendation, communities would be responsible for any costs over the ceiling."¹

Based on the assumptions made in the Transit Life Cycle Program, the amount allocated per park-and-ride lot is approximately \$4.5 million (in \$2008).² This funding cap is per-facility, regardless of size or design. The \$4.5 million in PTF funding is to be used for pre-design (i.e., site selection and environmental review), design, land acquisition, and/or construction. Local jurisdictions will be responsible for operations and maintenance costs associated with the park-and-ride lot.

¹ See 3.2.3.5, finding 35, of 2007 RTP Evaluation Final Report II.

² The funding contribution per facility is \$3,766,000 in \$2002; this figure has been inflated to \$2008 using an annual inflation rate of 3%. The more precise amount is \$4,496,801, which is rounded to \$4.5 million. The funding contribution from the PTF will be some combination of federal and regional funding. The proportions of regional and federal funding may vary from facility to facility, and the federal funding contribution may actually be 0% on some specific projects. For more information on PTF funding and funding mixes, please contact RPTA.

Figure 1 Park-and-Rides funded by PTF



3.3 Valley Park-and-Ride Network

The Valley's current regional park-and-ride network consists of eight dedicated facilities and many shared-use facilities. The opening of the Central Phoenix/East Valley light rail will add eight more park-and-ride lots to the system, and several more express bus or bus rapid transit park-and-ride lots are under construction. With the PTF-funded facilities, the Valley will have a complete network of park-and-ride facilities, with every freeway having at least one park-and-ride. The map in Figure 2 shows the funding status, as of November 2007, of various proposed park-and-ride lots in the Valley.

Finding: *Spacing of park-and-ride facilities*

In several locations around the Valley, park-and-ride facilities are in close proximity of one another. The spacing reflects, in part, the region's development patterns and freeway system routing. This situation seemed especially likely at locations where park-and-ride sites were near jurisdictional boundaries. On the west loop of the 101, for example, park-and-rides are planned at roughly four-mile intervals in Glendale, Peoria, and Phoenix (Figure 3). On the north loop of the 101, the 101/Scottsdale Rd. site and a potential site at Desert Ridge (in Phoenix) would be less than four miles apart (see Figure 4).

There are no regionally developed guidelines for park-and-ride spacing, and, indeed, closely-spaced park-and-ride facilities are not inherently detrimental to the system, especially where park-and-rides may serve different transit modes or travel needs. For example, an express bus may fill completely at a single point-of-origin park-and-ride and continue to its destination without stopping at other facilities. Park-and-rides on the Central Phoenix/East Valley light rail line are spaced roughly every mile, in some locations. The planned regional transit system consists of a combination of connector (suburb-to-suburb) and express (suburb-to-downtown) routes. While an express route may be negatively impacted by multiple stops, a connector route may actually be enhanced by multiple stop opportunities to serve a greater range of trip needs. In any case, it is important to recognize the effect that multiple stops have on transit operations and efficiency.

Recommendation: *Consider the regional transit network when implementing park-and-ride facilities*

Any community or agency planning on implementing a park-and-ride facility with funding from the Public Transportation Fund (PTF) must, within the Project Assessment Report (PAR), show the context in which the new park-and-ride will operate, including the effect on transit network operations and ridership.

Figure 2 Valley Park-and-Ride Facilities

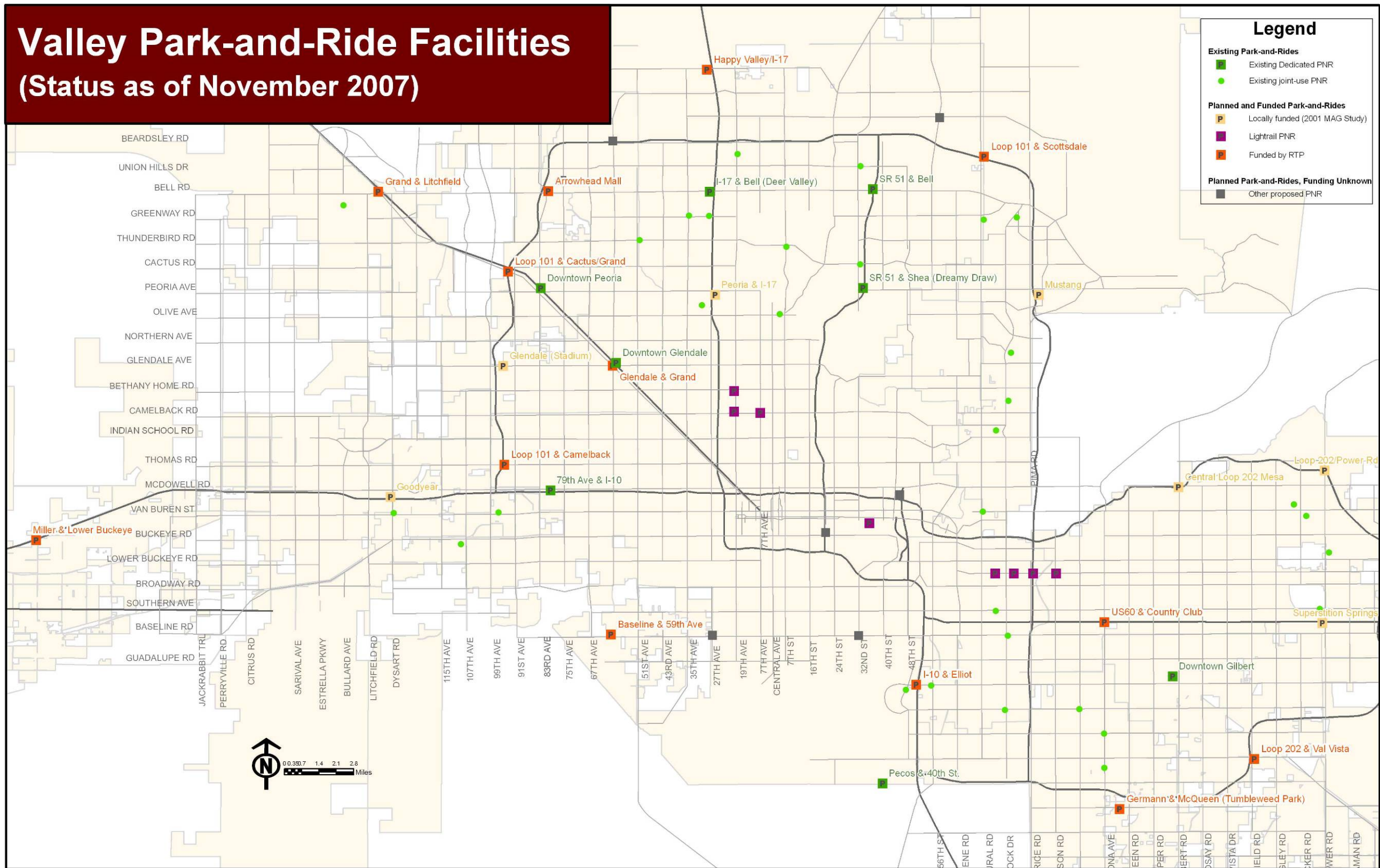


Figure 3 West Loop 101 Spacing

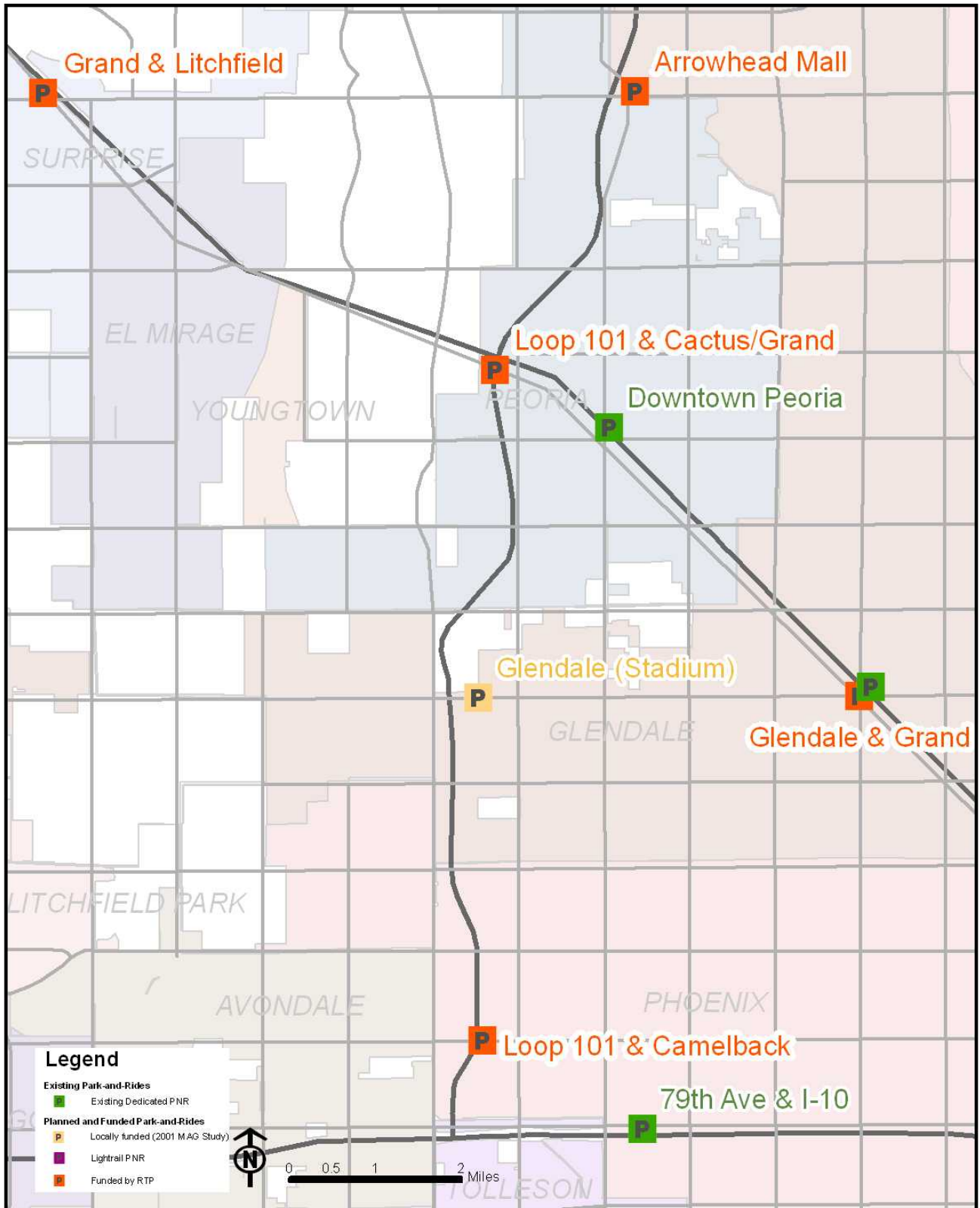
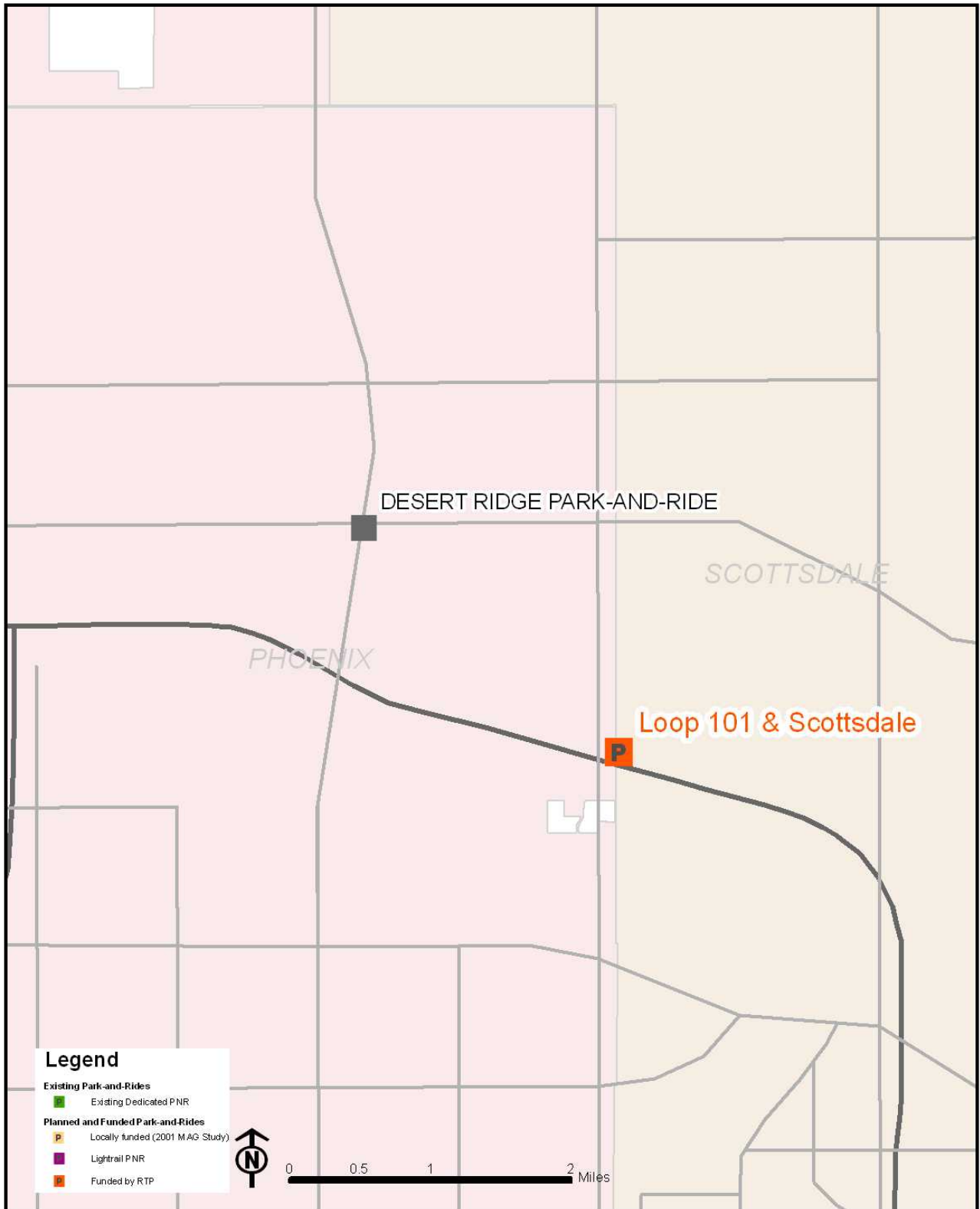


Figure 4 North Loop 101 Spacing



3.4 Land Availability & Cost

Finding: A clear concern that many participants expressed throughout the project was the rapid development that has occurred around the Valley in recent years and the resulting escalation in land prices. The recent downturns in the regional and national housing markets resulting from sub-prime mortgage defaults have slowed land development. This development slowdown may provide local jurisdictions with some breathing room as they work to secure land for park-and-ride facilities. Several local jurisdictions expressed the desire to act quickly and purchase available land in likely locations to avoid losing the opportunity altogether; either because of higher costs or because the land is developed. At the same time, project participants do not wish to bypass the federal environmental process and, thereby, risk the loss of federal funding. In addition, local jurisdictions each have varying policies regarding the purchase of land for future development.

Recommendation 1: *Regional park-and-ride site selection/environmental clearance process*

To facilitate the early purchase of land for future park-and-ride development without bypassing the federal environmental process, a regional park-and-ride site selection and environmental review study is recommended. The proposed study would follow the federal site selection and environmental processes.

Recommendation 2: *Allow advance purchase and construction of park-and-ride facilities at any time*

If a local jurisdiction is able to fund the land purchase, construction costs, and ongoing operations and maintenance costs of park-and-ride facilities, it may do so at any time, regardless of the implementation schedule proposed in section 3.1.

A community may request that its regional funding reimbursement be advanced as well, which would allow the RPTA and affected jurisdictions to take advantage of current real estate and construction costs. This strategy provides an opportunity for communities to secure available parcels sooner, which is increasingly more important for communities with established development. It could result in an overall financial benefit to the PTF, but could also result in the need to issue bonds for project financing. The process defined by TLCP Guiding Principle 2 must be followed when amending the scope or timing of any PTF-funded park-and-ride facility.

Recommendation 3: *Explore alternative means of securing space for park-and-ride facilities*

Other models of providing park-and-ride facilities exist and communities should explore these options for park-and-ride development. Partnering with the development community may allow the development of a dedicated park-and-ride in a new residential area. Another option includes joint-use or joint development, where the parking use is complementary; such as at churches, shopping malls, office complexes, or public recreation spaces. In this instance, leveraging private investment with public dollars could allow for the development of parking structures rather than surface lots. Parking structures can provide additional parking capacity over what could be provided by a surface lot on the same parcel.

Please note that any agency should consider Federal Transit Administration regulations when purchasing land if federal funds will be applied for any point.

4. Conclusion

The Regional Transportation Plan and Proposition 400 identified funding for 13 regional park-and-ride lots to support transit operations. The Park-and-Ride Re-prioritization Study provides recommendations to ensure that park-and-ride implementation are aligned with operational requirements, especially regarding express bus and bus rapid transit needs. The Park-and-Ride Re-prioritization also describes issues concerning the Valley's overall park-and-ride network and makes recommendations to facilitate implementation.

APPENDICES

Appendix I: Express bus or bus rapid transit services associated with regional park-and-ride facilities

Facility Location (approximate)	Jurisdiction	Year of Construction (FY)	High-capacity Services present	Start (FY)
Happy Valley/I-17	Phoenix	2009	I-17 RAPID	already operating
			Black Canyon Freeway Connector	2016
			Anthem Express	2018
			North I-17 Express	2022
Scottsdale Rd/Loop 101	Scottsdale	2009	Surprise-Scottsdale Express	already operating
			East Loop 101 Connector	2009
			Pima Express	2013
			Rural/Scottsdale BRT	2014
Price/202 ("Tumbleweed" site - McQueen/Germann)	Chandler	2009	Arizona Ave BRT	2011
			East Loop 101 Connector	2009
			Santan Express	2018
Grand/Surprise	Surprise	2008	Surprise-Scottsdale Express	already operating
			Grand Avenue BRT	2013
			Loop 303 Express	2023
Country Club/US 60	Mesa	2011	Apache Junction Express	2011
			Arizona Avenue BRT	2011
			Superstition Freeway Connector	2012
			Superstition Springs Express	2019
East Buckeye	Buckeye	2011	Papago Express	2009
			Buckeye Express	2015
Bell Rd./101 (Arrowhead Mall site)	Glendale	2013	Arrowhead-Downtown Phoenix Express	already operating
			Northwest Valley Express	2009
Glendale/Grand	Glendale	2013	570	already operating
			Grand Ave BRT	2013
Camelback/101	Phoenix	2015	I-10 East RAPID	already operating
			Arrowhead-Downtown Phoenix Express	already operating
			Northwest Valley Express	2009
			Peoria Express	2014
Laveen/59th Ave	Phoenix	2016	South Central Ave BRT - Route A	2015

Facility Location (approximate)	Jurisdiction	Year of Construction (FY)	High-capacity Services present	Start (FY)
Elliot/I-10	Phoenix	2017	I-10 East RAPID	already operating
			Ahwatukee Connector	2017
			540	already operating (ends 2017)
Val Vista/202	Gilbert	2018	Santan Express	2018
			Chandler Blvd Arterial BRT	2024
Cactus/101 (west loop)	Peoria	2023	Arrowhead-Downtown Phoenix Express	already operating
			Peoria Express	2014
			Grand Ave BRT	2013

Appendix II: Facility cost and local and regional funding requirements

The table below presents a cost estimate to implement a regional park-and-ride lot based on two park-and-ride projects that were recently constructed in the Valley, both of which were roughly 500 spaces in size. This cost information is provided for information only. Actual project costs may vary substantially, and depend on location, local land costs, facility size, and design preferences.

Task	Cost (\$2008)
Site selection study & environmental documentation	\$ 240,000
Land	\$ 2,900,000
Final design	\$ 500,000
Construction of park-and-ride lot	\$ 6,100,000
Construction of off-site street improvements	\$ 1,500,000
Construction management	\$ 650,000
TOTAL	\$ 11,890,000

Implementation timeline & costs

An estimated timeframe for the development of a park-and-ride is two to four years, with the following task breakdown:

Site selection and environmental review: 1 – 1½ years

Land acquisition: 3 – 6 months

Design: 6 – 9 months

Construction: 1 year

Actual timeframes for park-and-rides may vary based on land availability, environmental mitigation requirements, number of parking spaces, and type of design/construction procurement utilized.

Appendix III: 2007 RTP Evaluation Park-and-Ride Implementation Schedule

	Facility location (assumed)	Jurisdiction	Year of Construction
1	Happy Valley/I-17	Phoenix	2009
2	Cactus/101 ("Mustang" site at 101/Shea)	Scottsdale	2009
3	Price/202 ("Tumbleweed" site at McQueen/Germann)	Chandler	2009
4	Grand/Surprise	Surprise	2008
5	Country Club/US 60	Mesa	2011
6	East Buckeye	Buckeye	2011
7	Peoria/Grand	Peoria	2013
8	Glendale/Grand	Glendale	2013
9	Camelback/101	Phoenix	2015
10	Laveen/59th Ave	Phoenix	2016
11	Elliot/I-10	Phoenix	2017
12	Val Vista/202	Gilbert	2018
13	Loop 303	Glendale	2023