

# 1.0 INTRODUCTION

## 1.1 FOREWORD

In November of 2001, the voters of the City of Glendale passed a one-half-cent sales tax to fund a variety of transportation projects throughout the city. The plan for improvements was developed as part of the City of Glendale Transportation Plan and included in the Transportation Element of the General Plan which was approved by the voters of Glendale. This plan was developed with the assistance of a 61-member committee appointed by the City Council with representation from throughout Glendale. The committee was referred to as the Citizens Advisory Committee for Transportation Issues, or CACTI. The tax is to continue indefinitely and is projected to generate \$600 million in revenue by 2025. A large number of projects are expected to be constructed in the first few years to “catch up” with the explosive growth that occurred in the 1990’s that propelled Glendale to be the fourth largest city in Arizona with a population in excess of 242,000.

Northern Parkway is one of these longer-term needs that the city plans to implement over the next 10 to 20 years. Northern Avenue improvements were first suggested by members of CACTI during the development of the plan. Members of CACTI were concerned that the existing planned freeway and arterial system would not meet the needs of increased east/west travel across the West Valley. The Paradise Parkway, proposed as part of the original regional freeway program in 1985, was dropped from the program due to funding constraints and adverse impacts to existing developed areas. CACTI members suggested improvements to an appropriate east/west arterial corridor in Glendale which could result in a “parkway” with wider setbacks, more non-vehicular amenities, additional carrying capacity, and a higher degree of access control. The result of this planning issue became the Northern Parkway, which is planned to be developed as a high-capacity arterial street. This report provides documentation of the development of the concept for Northern Parkway.

A Design Concept Report (DCR) was prepared for the Northern Parkway and published in October 2003. This concept was developed through a multi-agency task force including representatives from Glendale, Peoria, El Mirage, Maricopa County Department of Transportation (MCDOT), Flood Control District of Maricopa County (FCDMC), Arizona Department of Transportation (ADOT), Maricopa Association of Governments (MAG), and Luke Air Force Base (AFB). The concept was developed based upon the initial idea of a “super street” which would have grade-separated intersections (GSI) at the major cross streets and traffic signals at some minor streets.

The Northern Parkway concept was included in the Regional Transportation Plan (RTP) adopted by MAG in November 2003. This plan became the basis for Proposition 400 passed by a county-wide vote in Maricopa County in November 2004. Approval of this ballot measure extends the

county-wide one-half-cent sales tax for another 20 years. Together with state and federal highway trust funds plus a 30 percent local match, funds for Northern Parkway appear to be available.

In September 2005, the voters of Peoria passed a transportation sales tax of 0.3 percent for transportation projects in Peoria. This sales tax along with general obligation bonds would provide funding for Northern Parkway.

The Northern Parkway is also included in the adopted Maricopa County Major Streets and Routes Plan, Revised September 2004. It is shown as an “enhanced arterial (Future)” on Map 8 of county document.

The draft DCR (July 31, 2008) was a major update to the one prepared in 2003. The earlier DCR (October 1, 2003) was prepared with input from public meetings held February 12, 2003 and July 10, 2003. The draft DCR effort began after the approval of Proposition 400 and involved the same stakeholders as before. A management committee comprised of high-level staff from Glendale, Peoria, Maricopa County and El Mirage and other stakeholders met every month and directed the process that led to the draft DCR. Technical representatives from the stakeholder agencies also met monthly to coordinate work and provide technical support to the management committee. An agency scoping meeting was conducted in February of 2005 and a public scoping meeting followed on June 1, 2005. A community open house was held on December 8, 2005 to obtain public comments and special neighborhood meetings were held between January 2006 and March 2006. A draft EA was completed in September 2009 and a public hearing followed in October 2009. This final DCR is consistent with the EA and includes updates to the cost estimate that resulted from a FHWA cost estimate review conference held in June 2009.

## **1.2 PROJECT LOCATION AND SETTING**

Northern Avenue is one of the many west-east section-line arterials that cross the once agricultural Salt River Valley. Northern Avenue lies near the geographic center of the existing urbanized area comprised of Phoenix, Scottsdale, Glendale, and several West Valley cities and towns. Northern Avenue extends from SR 51 in Phoenix westward to Perryville Road, a distance of 24.5 miles. In the central portion of the urban area, Northern Avenue lies 6 miles north of I-10 and 8 miles south of SR 101L/Agua Fria Freeway (Loop 101). Figure 1-1 illustrates the geographic setting of the project.

The portion of Northern Avenue addressed in this study report is the approximately 12 miles from SR 303L/Estrella Freeway (Loop 303) on the west to US 60 (Grand Avenue) on the east. East of Grand Avenue, Northern Avenue is a fully developed five-lane urban arterial with extensive residential and commercial development abutting the roadway. West of SR 303L, Northern Avenue is a rural two-lane roadway serving large lot residential development.

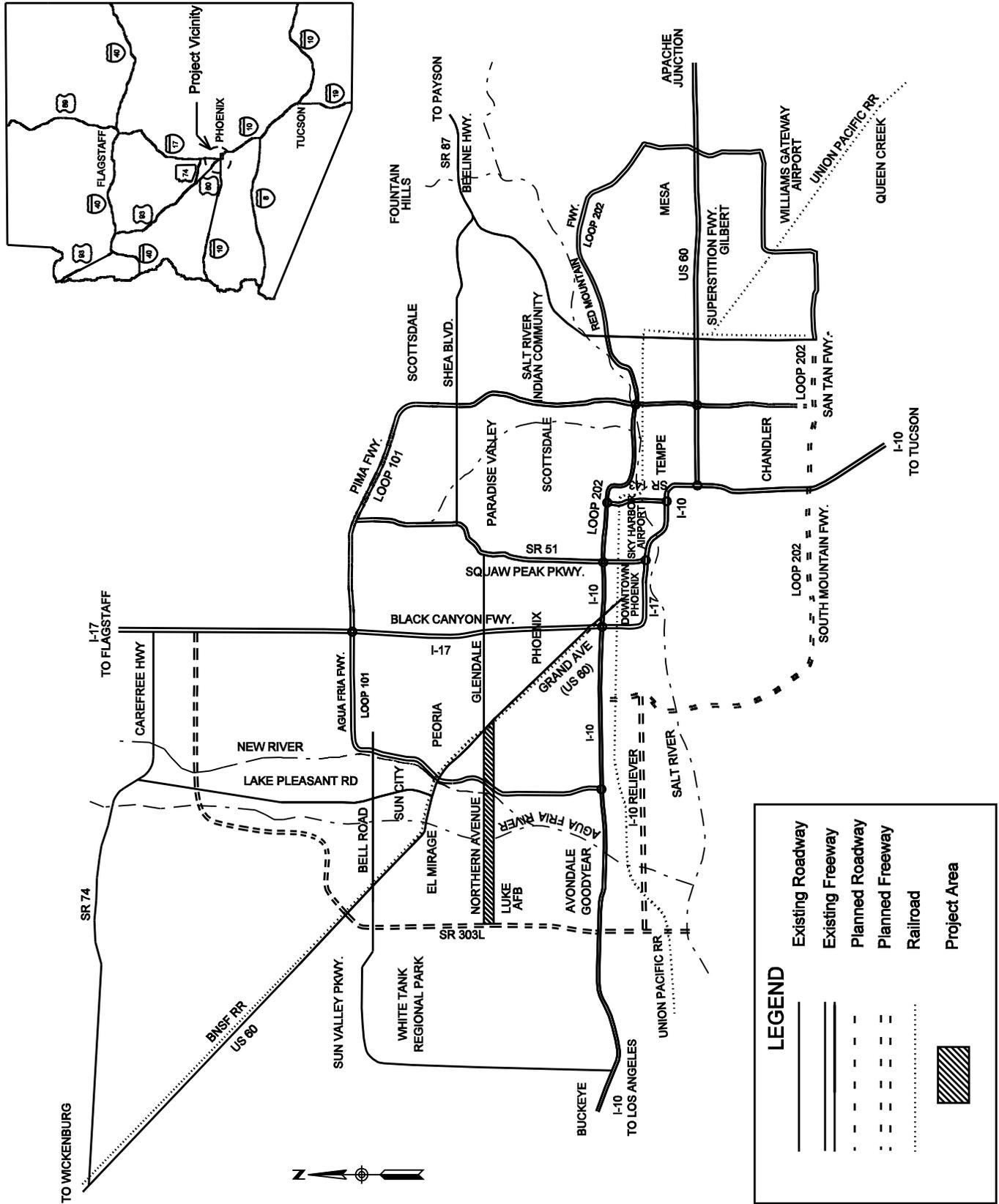


FIGURE 1-1  
PROJECT VICINITY MAP

Figure 1-2 illustrates the project limits and general corridor area. The two-lane roadway section extends east of SR 303L to 112<sup>th</sup> Avenue and widens to a 5-lane section east of 112<sup>th</sup> Avenue to Grand Avenue.

From 71<sup>st</sup> Avenue westward to approximately 115<sup>th</sup> Avenue, Northern Avenue is the boundary between the cities of Glendale and Peoria. From 115<sup>th</sup> Avenue to west of Dysart Road (2 miles), Northern Avenue is the boundary between the cities of Glendale and El Mirage. Between Litchfield Road and Reems Road, Luke AFB borders Northern Avenue on the south and the Falcon Dunes Golf Course (affiliated with Luke AFB) is on the north. Luke AFB is within the City of Glendale. The Glendale Municipal Planning Area encompasses the largely unincorporated area bounded by Peoria Avenue on the north, Camelback Road on the south, Perryville Road on the west, and the City of El Mirage and the Agua Fria River on the east.

### **1.3 DESCRIPTION OF THE PROJECT**

The Northern Parkway will extend approximately 12 miles from Loop 303 to US 60 (Grand Avenue) (see Figure 1-3). The connection to Loop 303 will be located along the Butler mid-section line between Northern Avenue and Olive Avenue. A system interchange has been planned as part of the Loop 303 project. The Northern Parkway project begins at the existing location of Sarival Avenue. The planned roadway extends eastward to Litchfield Road and then curves southward to the Northern Avenue alignment at Dysart Road. Northern Avenue would remain 0.5-mile south of Northern Parkway from Sarival to 0.5-mile east of Litchfield Road. From this point Northern Parkway is planned to replace Northern Avenue all the way to Grand Avenue except for the segment between 103<sup>rd</sup> Avenue and 91<sup>st</sup> Avenue. In that 1.5-mile section, Northern Avenue will remain to provide access to Loop 101 and to the commercial properties on either side of Loop 101. Northern Parkway will be on a separate free-flow “bypass” aligned to the south of Northern Avenue. From 103<sup>rd</sup> Avenue to 99<sup>th</sup> Avenue and from Loop 101 east ramps to 91<sup>st</sup> Avenue, eastbound and westbound Northern Avenue traffic will be separated by the bypass roadway. The existing Northern Avenue will become the new three-lane westbound Northern Avenue while a new roadway on the south side of the bypass roadway will provide three eastbound lanes. Northern Avenue under Loop 101 will be widened to accommodate three through lanes and two left-turn lanes in each direction.

One of the major features of Northern Parkway are the GSI’s at the north-south arterials. GSI are planned at Sarival Avenue (east ramps only), Reems Road, Litchfield Road, Dysart Road, El Mirage Road, 103<sup>rd</sup> Avenue, 93<sup>rd</sup> Avenue (west ramps only), 91<sup>st</sup> Avenue (east ramps only), 83<sup>rd</sup> Avenue, and 75<sup>th</sup> Avenue. Northern Parkway will be free flow at each of these locations and the north-south arterial street will have a signalized intersection with the ramps to and from the parkway.

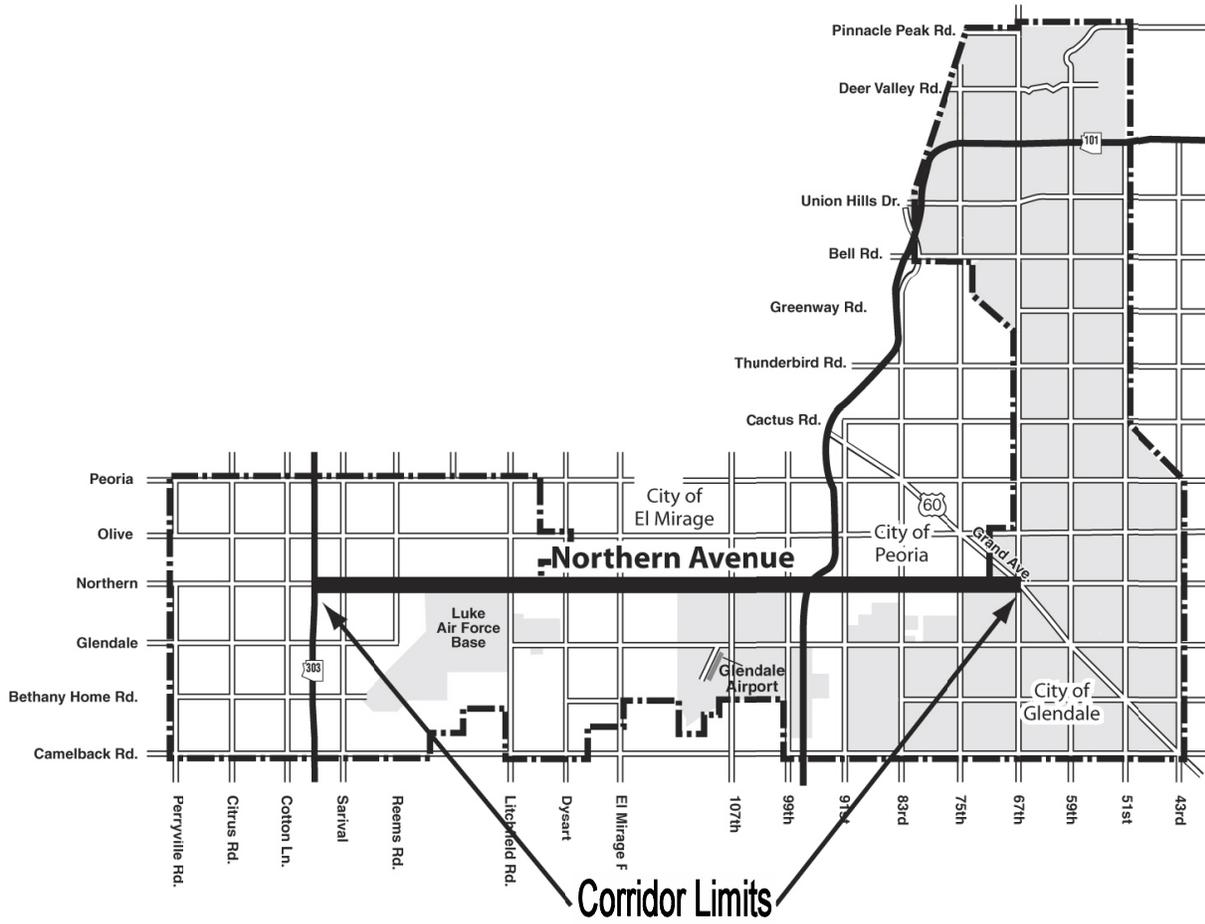
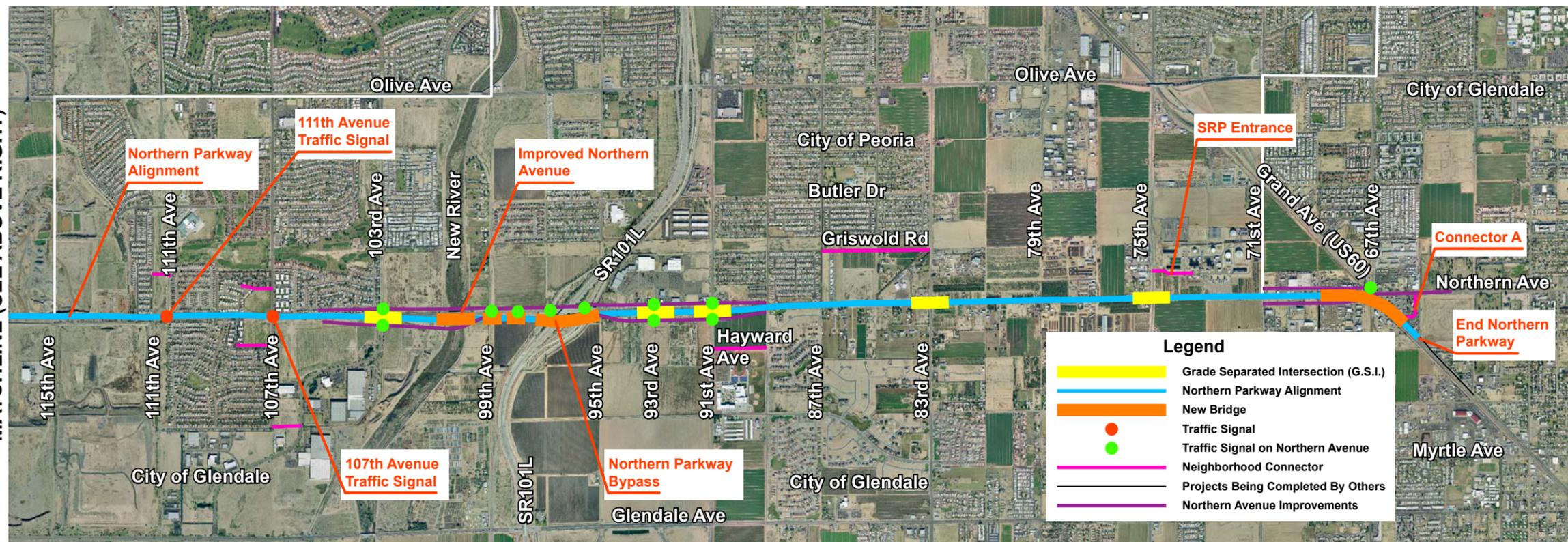


FIGURE 1-2  
PROJECT LIMITS



Legend	
	Grade Separated Intersection (G.S.I.)
	Northern Parkway Alignment
	New Bridge
	Traffic Signal
	Traffic Signal on Northern Avenue
	Neighborhood Connector
	Projects Being Completed By Others
	Northern Avenue Improvements

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FIGURE 1-3  
OVERVIEW OF THE NORTHERN PARKWAY CONCEPT

In addition to the GSI, grade separations would be provided at the BNSF Webb Spur (near 143<sup>rd</sup> Avenue), 99<sup>th</sup> Avenue, 97<sup>th</sup> Avenue, Loop 101 (bypass) and at Grand Avenue and the parallel BNSF tracks (flyover).

Northern Parkway would be fully access controlled from Loop 303 to west of 115<sup>th</sup> Avenue. Frontage Roads and additional connector roads are planned between Dysart and El Mirage roads to accommodate truck traffic in this industrial area. Full access control will also be provided on the parkway in the bypass section from 103<sup>rd</sup> Avenue to 91<sup>st</sup> Avenue. On the remainder of the parkway, access will be limited to right turn on and off the parkway. A barrier or raised curbed median will be provided on the parkway throughout its length except at the signalized intersections of 111<sup>th</sup> and 107<sup>th</sup> avenues. New right-turn access points will be managed to minimize the number and to locate them in the safest places.

Northern Parkway will have three continuous lanes in each direction. Auxiliary lanes will be provided between the on and off ramps for the GSI. Paved shoulders will be provided on the outside and inside edges of the travel lanes from Sarival to 112<sup>th</sup> avenues. Curbs, gutters and sidewalks will be provided for most of the remainder of the parkway except the bypass segment from 103<sup>rd</sup> Avenue to 91<sup>st</sup> Avenue.

A direct flyover connection is proposed to link Northern Parkway to the southeast leg of Grand Avenue. The flyover will be from the median of Northern Parkway to the median of Grand Avenue and will consist of a single lane in each direction separated by a concrete median barrier. The “flyover” structure will divide eastbound and westbound Northern Avenue traffic from 71<sup>st</sup> Avenue to Grand Avenue. Three lanes for westbound traffic will be provided along the current Northern Avenue while three new eastbound lanes will be provided on the south side of the flyover structure. The eastbound and westbound Northern Avenue roadways will reunite at Grand Avenue. An additional 4<sup>th</sup> lane in each direction at Grand Avenue would be provided to accommodate high traffic demand at this intersection. Left turns at the Northern/Grand intersection will be eliminated. Most left turns can be made via a right turn and use of the 67<sup>th</sup> Avenue overpass and connector roadways. The southeast Grand Avenue to eastbound Northern left turn would be accommodated by having the left-turning traffic pass through the intersection with the through traffic and then make a left turn southeast of the intersection at a proposed traffic signal and new connector road that would link back to Northern Avenue along the 65<sup>th</sup> Avenue alignment east of Grand Avenue.

A new bridge is planned at the Agua Fria River to replace the existing river bottom crossing. A new bridge will be needed at New River to accommodate the bypass alignment and another bridge at the New River will be required to accommodate the new eastbound Northern Avenue roadway.

Between 115<sup>th</sup> Avenue and 103<sup>rd</sup> Avenue, traffic signals at 111<sup>th</sup> Avenue and 107<sup>th</sup> Avenue will be provided to facilitate neighborhood access. These signals would have left-turn phases for Northern Parkway traffic. No left turns would be permitted anywhere other than at these two signals. Four neighborhood connector streets would be constructed to aid restoration of access to all the neighborhoods. Curbs, gutters, sidewalks, street lighting, and landscaping will be provided.

Connector streets are also proposed east of 91<sup>st</sup> Avenue to improve access to neighborhoods and businesses. One is for Rovey Estates subdivision located south of Northern Avenue and east of 89<sup>th</sup> Avenue, another connects 87<sup>th</sup> and 83<sup>rd</sup> avenues north of Northern, and one for the SRP Agua Fria Generating Station east of 75<sup>th</sup> Avenue.

The project will require extensive utility relocation particularly to accommodate the GSI from 103<sup>rd</sup> to 75<sup>th</sup> avenues. A major El Paso Natural Gas Company (EPNG) facility at 109<sup>th</sup> Avenue will also require relocation to accommodate the widening. The off-site drainage system will require substantial upgrading to provide 10-year storm protection and to replace several existing detention basins that will be removed to accommodate the wider street.

## **1.4 PURPOSE AND NEED FOR PROJECT**

### **1.4.1 Need for the Project**

The Glendale CACTI and the Northern Parkway Management Committee identified the following needs for the proposed transportation facility. This project is needed to serve population growth, improve travel time, provide regional connectivity, improve regional facility spacing, provide a crossing at the Agua Fria River, improve west-east traffic flow, implement regional plans, reduce crash rates, reduce congestion, and improve emergency response times.

### **1.4.2 Serve Population Growth**

According to MAG, the area west of the Agua Fria River in the West Valley is one of the fastest-growing areas of the Phoenix metropolitan area. Rapid population growth due to land development is occurring in this area and is expected to continue. Population within the regional study area, as detailed in Table 1-1, is expected to grow from about 652,219 residents in 2005 to over 899,150 residents by 2030, an increase of nearly 38 percent or approximately 250,000 more people. In addition, employment within the study area is expected to grow from 161,365 in 2005 to 378,646 in 2030, an increase of approximately 220,000 or 135 percent. The western portion of the study area in the vicinity of SR 303L as shown in Figure 1-4 (RAZ 233, 254, 255, 265 in Table 1-1) is expected to have the most significant growth, with an increase of 175 percent from 74,906 in 2005 to 206,421 in 2030, which is a total of approximately 130,000 more people. The existing limited regional and arterial road network of two-lane roadways is unlikely to serve the transportation needs associated with anticipated future growth west of the Agua Fria River

adequately, ultimately resulting in an increase of traffic congestion from population and employment growth.

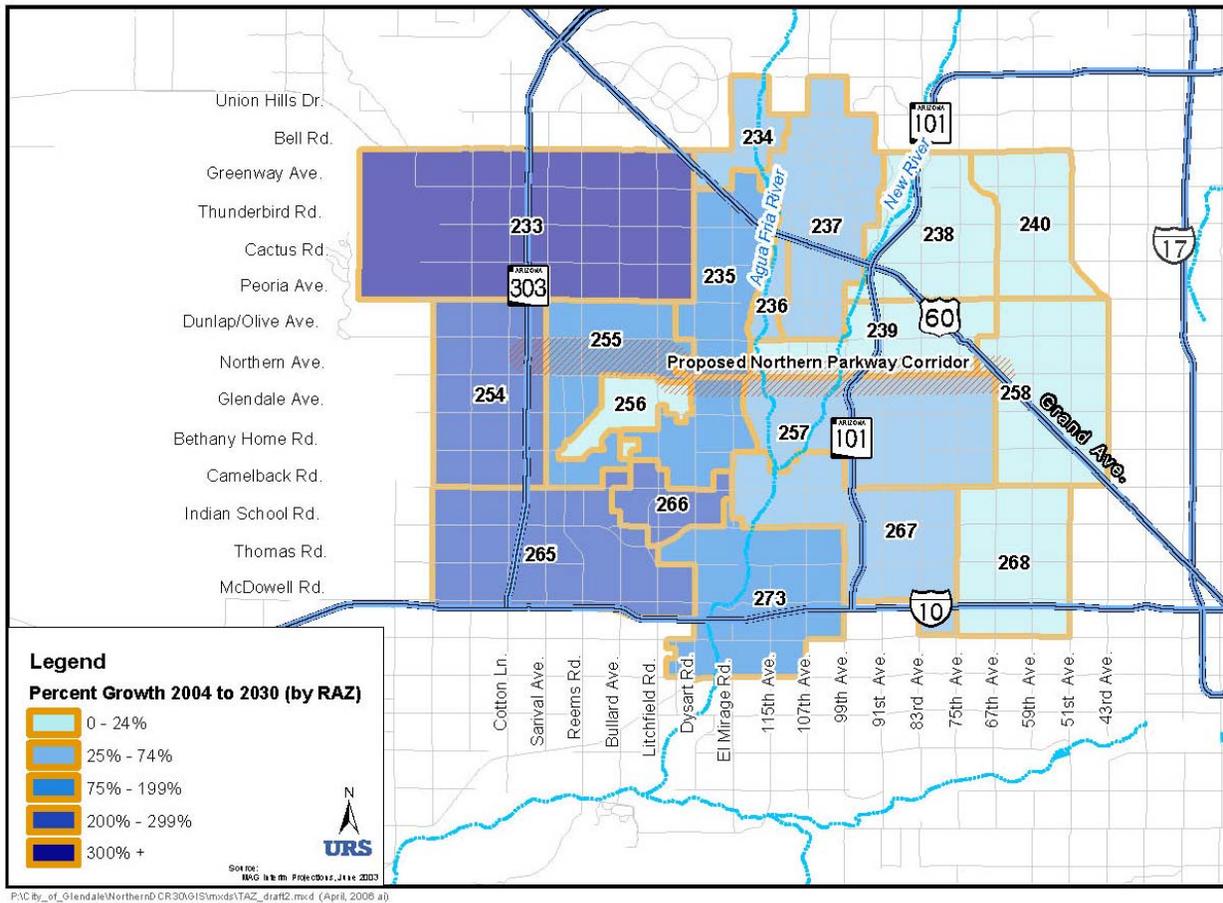
**Table 1-1 Regional Population Growth Projections**

Community	RAZ	Year 2005		Year 2010		Year 2020		Year 2030	
		Population	Employment	Population	Employment	Population	Employment	Population	Employment
Surprise	233	41,695	6,731	75,830	14,056	102,885	29,411	116,743	44,049
	234	9,557	2,491	11,224	2,966	14,458	3,392	14,761	3,318
<b>Subtotal</b>		<b>51,252</b>	<b>9,222</b>	<b>87,054</b>	<b>17,022</b>	<b>117,343</b>	<b>32,803</b>	<b>131,504</b>	<b>47,367</b>
El Mirage	235	31,935	2,858	34,819	5,001	38,620	9,276	38,717	11,528
Youngtown	236	6,011	1,657	6,820	1,667	7,275	1,988	7,359	2,042
Maricopa County	237	34,140	10,438	34,169	10,329	34,549	10,367	35,066	10,392
Peoria	238	54,417	16,477	57,589	19,940	61,436	25,181	62,288	25,001
	239	34,614	9,189	38,059	14,194	42,558	19,469	47,271	23,202
<b>Subtotal</b>		<b>161,117</b>	<b>40,169</b>	<b>171,456</b>	<b>51,131</b>	<b>184,438</b>	<b>66,281</b>	<b>190,701</b>	<b>72,165</b>
Glendale	240	46,030	16,834	46,882	21,586	48,103	22,147	48,558	22,002
	254	3,761	440	10,478	3,620	22,832	15,704	23,375	21,250
	255	11,225	1,904	14,793	2,874	18,254	7,918	21,252	9,619
	256	4,058	8,707	4,059	8,705	4,060	8,697	4,061	8,713
	257	41,944	12,039	49,777	19,155	62,376	36,817	64,906	43,250
	258	100,440	29,650	102,511	38,209	106,432	40,671	106,709	42,361
<b>Subtotal</b>		<b>207,458</b>	<b>69,574</b>	<b>228,500</b>	<b>94,149</b>	<b>262,057</b>	<b>131,954</b>	<b>268,861</b>	<b>147,195</b>
Goodyear	265	18,225	6,760	28,582	11,053	40,060	19,968	45,051	24,466
Litchfield Park	266	6,787	1,710	8,587	2,405	10,305	3,200	10,510	4,280
Phoenix	267	65,053	8,846	74,160	13,902	83,905	21,047	85,461	26,320
	268	93,685	14,646	98,189	17,775	100,854	19,026	101,551	19,696
<b>Subtotal</b>		<b>183,750</b>	<b>31,962</b>	<b>209,518</b>	<b>45,135</b>	<b>235,124</b>	<b>63,241</b>	<b>242,573</b>	<b>74,762</b>
Avondale	273	48,642	9,988	58,880	16,448	65,440	27,274	65,511	37,157
<b>Total</b>		<b>652,219</b>	<b>161,365</b>	<b>755,408</b>	<b>223,885</b>	<b>864,402</b>	<b>321,553</b>	<b>899,150</b>	<b>378,646</b>

**Source:** Maricopa Association of Governments Socioeconomic Projections of Population, Housing and Employment by Municipal Planning Area and Regional Analysis Zone, May 2007. This report is based on 2005 census survey and projections are based on the latest version of each member agency's land use plan. The projections are subject to change.

**Note:** RAZ = Regional Analysis Zone. A RAZ is an area within a Municipal Planning Area (MPA). Maricopa Association of Governments defines an MPA as an "area of planning concern for a municipality and is based upon its anticipated future corporate limits" (Maricopa Association of Governments 2007).

**Figure 1-4 Population Growth**



An improved transportation system is important to create economic vitality for local, regional, state, and national economies. With such population and employment projections, like those projected in Table 1-1, there would be a need to provide regional transportation facilities to help attract development that would support the regional, state, and national tax base used to provide public services.

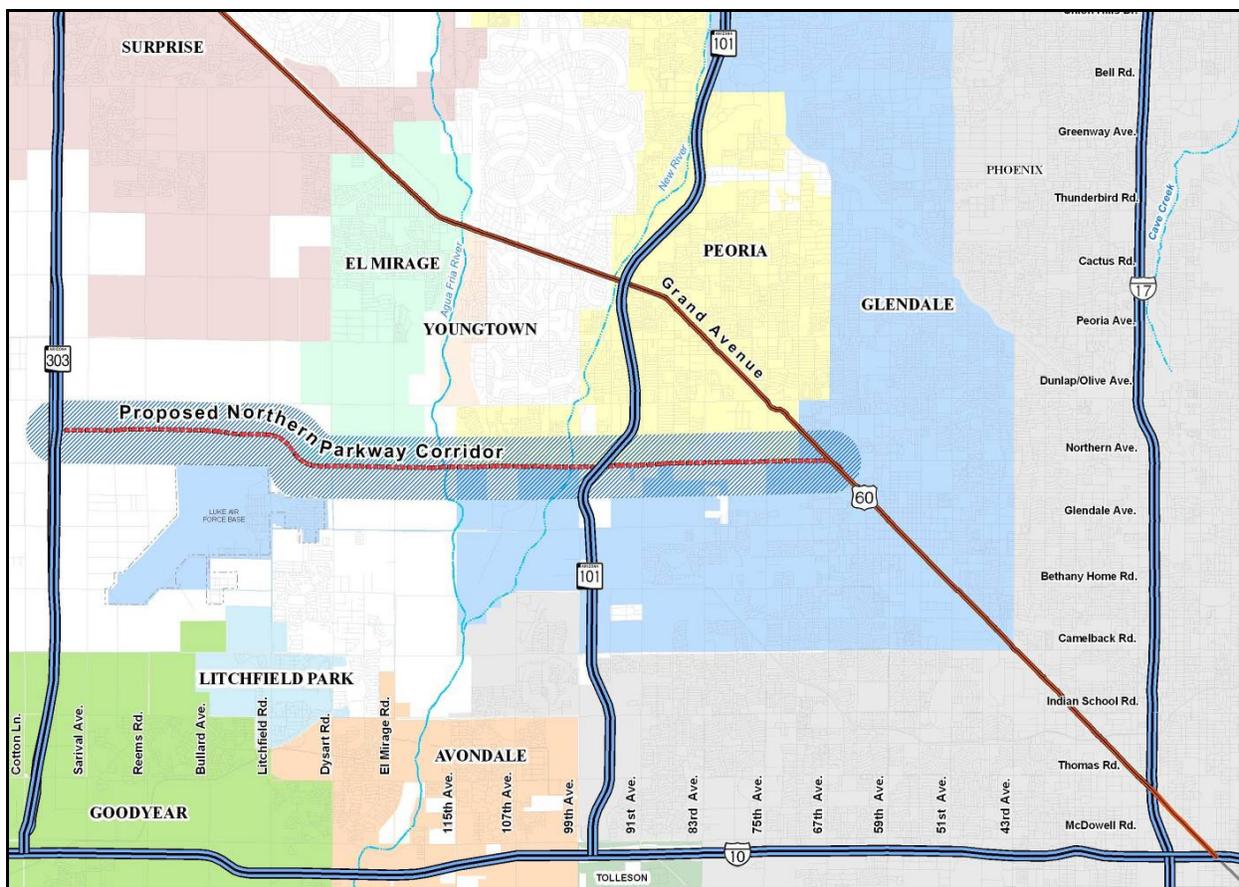
### 1.4.3 Improve Travel Time

The regional north-south highways of SR 303L and US 60 are approximately 12.5 miles apart along the Northern Avenue corridor. If no roadway improvements were made, with no access control and existing signals remaining, the average speed along the project corridor in 2030 would be 19.3 mph and it would take motorists 42 minutes during peak hours to travel from SR 303L to US 60. The travel time needs to be improved to accommodate population and employment projections.

### 1.4.4 Provide Regional Connectivity

Due to population growth projections, a high-capacity west-east corridor will be needed to connect with major routes, thereby providing a continuous high-capacity, higher-speed system that offers better traffic circulation throughout the entire region. Currently, interim SR 303L and SR 101L provide for regional north-south travel in the West Valley while US 60 is a diagonal route providing connection to destinations in the northwest valley (see Figure 1-5). Without improved west-east regional connectivity to those state routes, congestion would occur on Northern Avenue at SR303L, SR 101L, and US 60, and the adjacent arterial street system in the overall area would become congested.

Figure 1-5 Regional Connectivity



### 1.4.5 Improve Regional Facility Spacing

Improvements in regional transportation facility spacing are needed to improve traffic flow based on future population growth projections. One of the benefits of well-spaced regional high-capacity routes within the study area would be reduced traffic on parallel arterials so those roads could serve their dual function of providing access to major land uses and accommodating moderate vehicle commutes (4 to 5 miles long). The Transportation Research Board (Circular

E-C019) suggests freeway spacing of 4 to 6 miles in urban areas while MAG suggests 3 to 6 mile spacing for regional roads.

#### **1.4.6 Provide Agua Fria River Crossing**

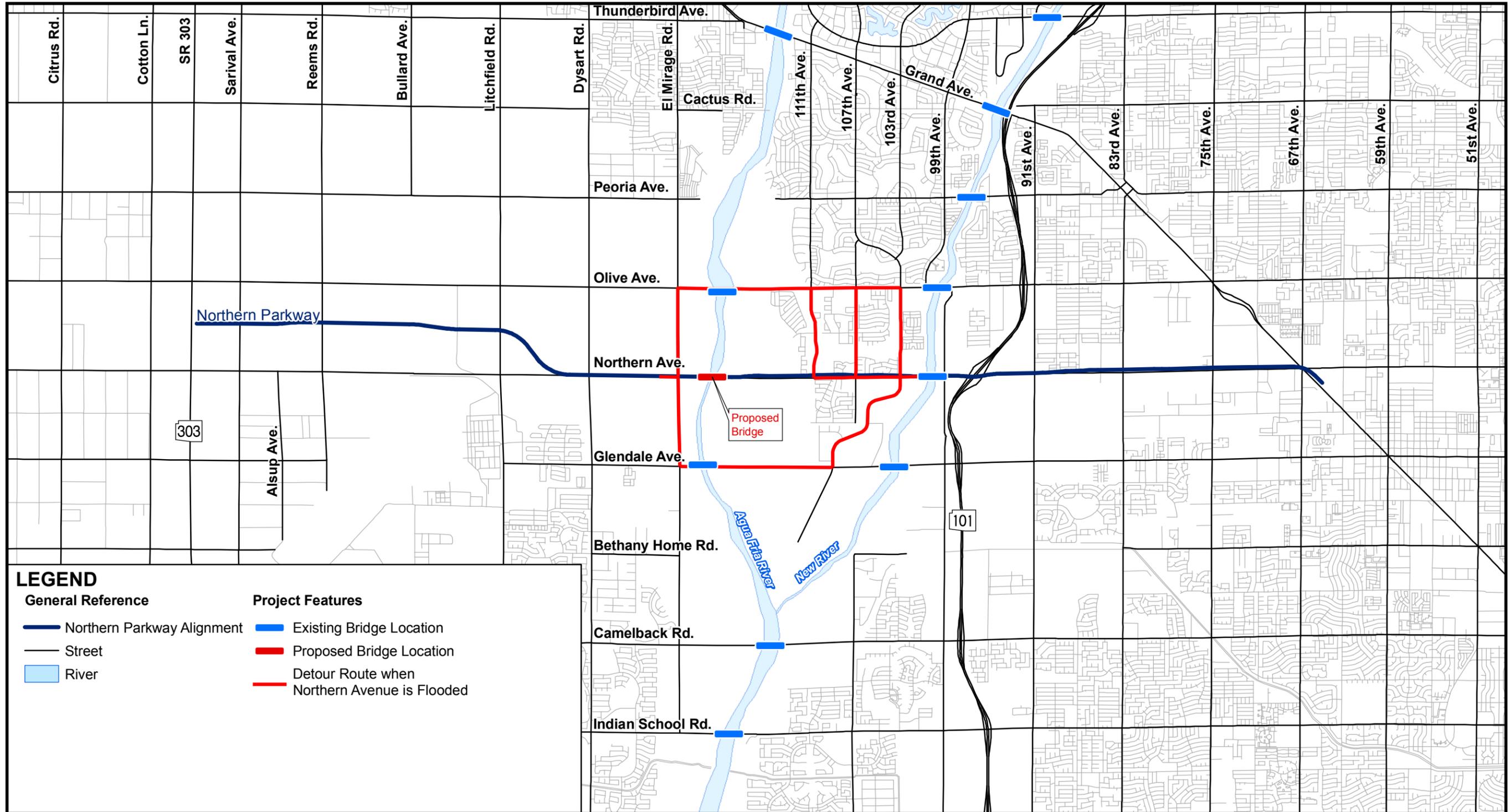
The Agua Fria River crosses Northern Avenue east of El Mirage Road. The existing road crossing consists of two dip sections. During storm events, the dip crossings are closed due to flooding. This presents a major obstruction to traffic movement. During the last five years, there have been five closures averaging 2.8 days per closure, according to MCDOT maintenance staff. Closures are problematic because emergency vehicle response time may be delayed.

In the 8 miles between Indian School Road and Thunderbird/Grand, there are five bridges, including the bridge at Indian School Road and at Grand Avenue (see Figure 1-6). With the large population increase expected west of the Agua Fria River, additional bridge crossings are needed to ensure safe, reliable access at all times. When Northern Avenue is closed due to flooding, eastbound and westbound traffic must be diverted one mile north to Olive Avenue or one mile south to Glendale Avenue. Based on projected 2030 traffic volumes, these arterial streets would become gridlocked during closure of Northern Avenue at the Agua Fria River.

#### **1.4.7 Improve East-West Street Traffic Flow**

In the 12 miles between I-10 and Bell Road, there are only five west-east arterials that are continuous between Loop 303 and Grand Avenue: McDowell Road, Indian School Road, Camelback Road, Northern Avenue, and Olive Avenue (see Figure 1-7). This limits the east-west traffic capacity in the region. Consequently, traffic on these arterials, and especially Bell Road, experiences a high degree of congestion and delay during peak travel times. A higher capacity road is needed to supplement this limited arterial network, to serve both current and future travel demand.

A free flow east-west route that can accommodate a large amount of traffic is needed to compensate for the limited street network. Luke AFB, Agua Fria River, New River, and Sun City are barriers to east-west travel in the area (see Figure 1-7). As a result, there are limited continuous routes in the region and limited opportunities to travel on continuous streets resulting in traffic congestions on the few continuous roads.



**LEGEND**

**General Reference**

-  Northern Parkway Alignment
-  Street
-  River

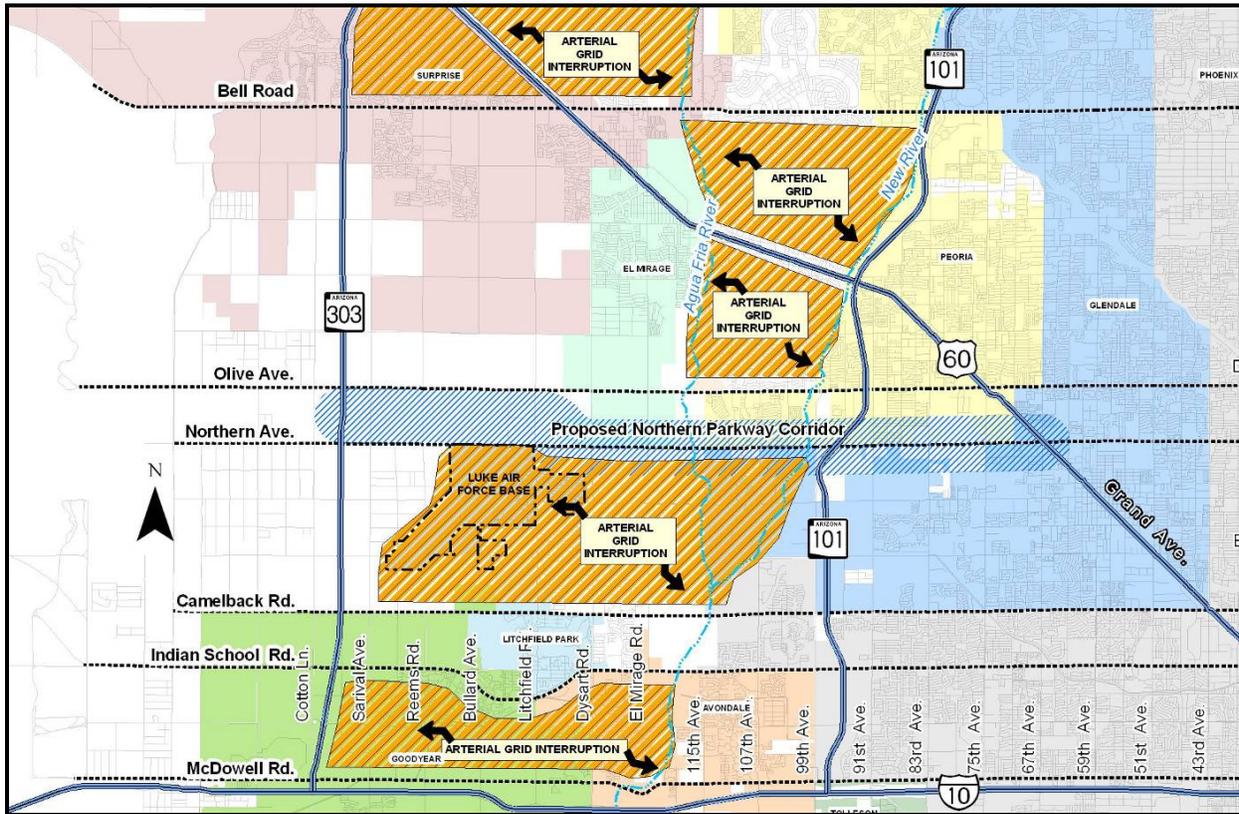
**Project Features**

-  Existing Bridge Location
-  Proposed Bridge Location
-  Detour Route when Northern Avenue is Flooded

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FIGURE 1-6  
Agua Fria River Crossings

**Figure 1-7 Disconnected System**



### 1.4.8 Implement Regional and Local Plans

Various regional plans have been prepared to meet the needs of improving traffic flow in the West Valley, which are awaiting implementation. These plans include the following:

- A major roadway corridor along Northern Avenue is included in Glendale’s adopted Transportation Plan. As the basis for approving a one-half-cent sales tax, the Glendale Transportation Study was submitted to the voters of Glendale in 2001 and was approved, thus providing local funding for the project as well as other projects defined in the program.
- The voters in Peoria approved a sales tax issue in November 2005 to help fund the project and other projects in Peoria.
- The new facility is included in the Maricopa County Major Streets and Routes Plan.
- The new facility is also included in the comprehensive performance-based RTP prepared by MAG. Northern Avenue is shown in the RTP as a “new/improved arterial” that would provide major capacity improvements and new connections for the regional arterial street network. The RTP (MAG 2004) provides a vision for the regional transportation system,

addressing freeways and other highways, streets, transit corridors, airports, bicycle and pedestrian facilities, freight facilities (rail routes), demand management, system management (including intelligent transportation systems), and safety in Maricopa County through fiscal year 2026. The RTP is the result of a major planning effort initiated in 2001 and completed in late 2003, when it received unanimous support from the Transportation Policy Committee and approval from the MAG Regional Council. The RTP is funded through a variety of funding sources including the half-cent sales tax extension provided by Proposition 400, which was approved by Maricopa County voters in November 2004. Northern Parkway has been designated to receive a portion of the RTP's federal funding allocation.

### 1.4.9 Reduce Crash Rates

Based on projected population growth, crash rates would likely increase if there are no improvements to the current transportation system. It is estimated that as the area continues to develop there would be 24 traffic signals on Northern Avenue if the Northern Parkway improvements were not constructed. Alternative 1 would reduce this number to two while Alternatives 2 and 3 eliminate all traffic signals for through Northern Parkway traffic. Typical arterials with frequent points of access, traffic signals placed 0.25 to 0.5 mile apart, and two-way left-turn lanes typically have high rates of vehicle crashes and collisions. Table 1-2 shows a correlation between the number of signals and crash rates. Basically, the more signals in place, the more crashes will occur on a typical arterial. If there are less than 2 signals per mile, the number of crashes per million vehicle miles traveled (VMT) is around 3. If there are more than 6 signals per mile, the number of crashes triples. Based on this information, and taking into account projected traffic growth and that all three build alternatives would reduce the number of traffic signals for through traffic compared to the No Build Alternative, the Northern Parkway improvements would likely decrease the probable crash rate from the no build condition for the design year of 2030.

Also, building grade separated intersections and eliminating direct driveway access eliminates vehicle conflicts and also has the potential to significantly reduce accident rates compared to the no build condition. In addition, installing median barriers or raised medians are proven measures that can reduce traffic accident rates.

**Table 1-2 Signal Spacing and Crash Rates**

Signals per Mile	Crashes per Million VMT
Under 2	3.53
2 to 4	6.89
4 to 6	7.49
6 +	9.11

Source: "Benefits of Access Management," FHWA Document Number FHWA-OP-03-066

## **1.5 CHARACTERISTICS OF THE CORRIDOR**

### **1.5.1 Jurisdictional Boundaries**

The general corridor area including the jurisdictional boundaries is shown in Figure 1-8. The proposed project abuts the cities of Glendale, Peoria, and El Mirage and passes through considerable unincorporated Maricopa County. The existing Northern Avenue is on the southern boundary of Peoria and El Mirage and therefore, by regional agreement, the roadway is the responsibility of those cities along their boundaries.

Neighborhoods surrounding the corridor are served by several school districts (see Figure 1-9). The Glendale Elementary School District and Glendale Union High School District serve areas east of 83<sup>rd</sup> Avenue and south of Northern Avenue and east of 71<sup>st</sup> Avenue on both sides of Northern Avenue. The Peoria Unified School District serves the area north of Northern Avenue west of 71<sup>st</sup> Avenue, and both sides of Northern Avenue west of 83<sup>rd</sup> Avenue to 115<sup>th</sup> Avenue. The Dysart Unified District serves areas on both sides of Northern Avenue from 115<sup>th</sup> Avenue to the 151<sup>st</sup> Avenue alignment, where the Agua Fria School District assumes service to the areas south of Northern Avenue, while the Dysart District continues to service areas north of the roadway. As can be seen from the figure, there are no public schools immediately adjacent to Northern Parkway.

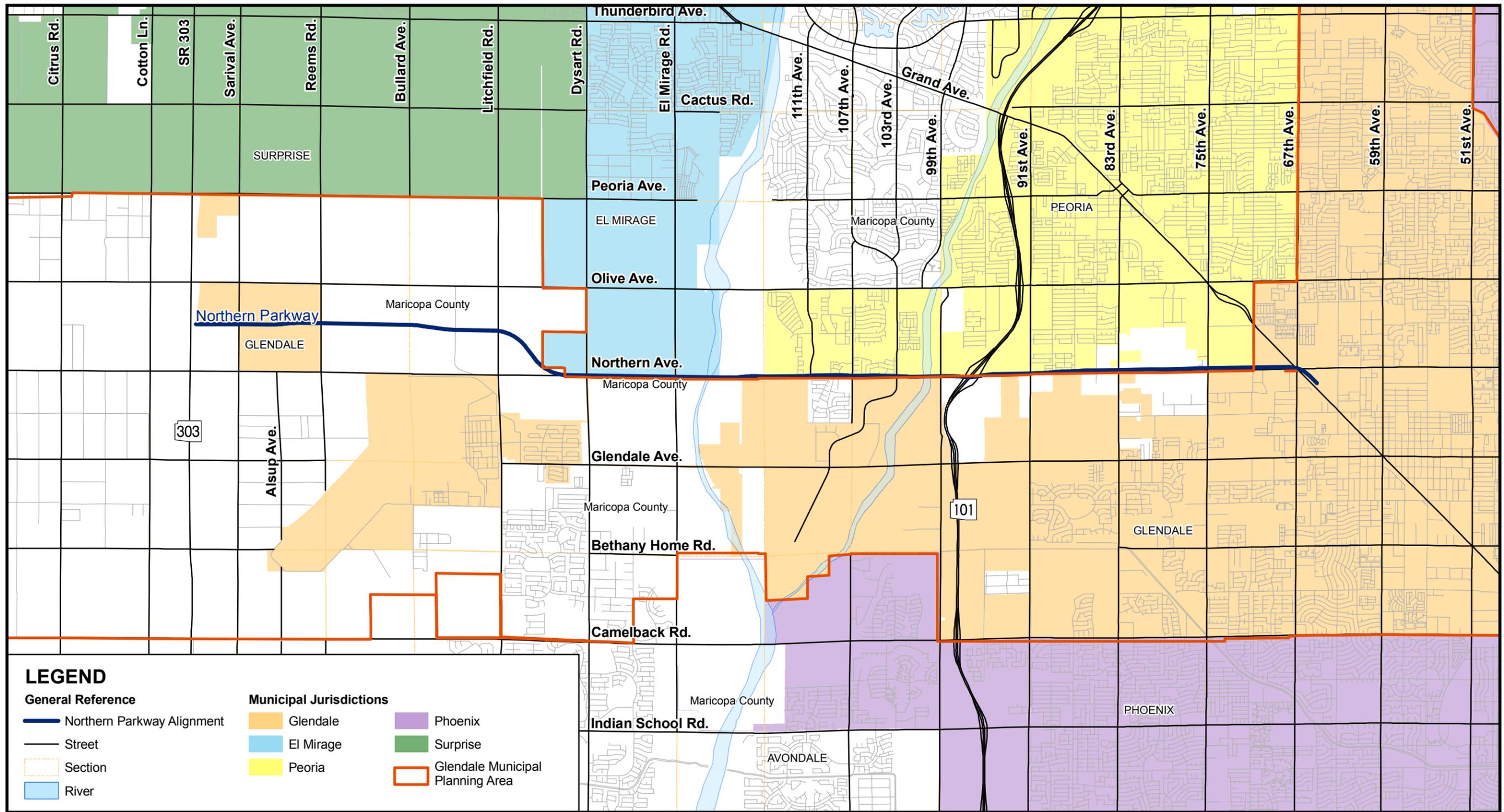
### **1.5.2 Existing Land Uses**

#### **Grand Avenue to 83<sup>rd</sup> Avenue**

Figure 1-10 provides a more detailed view of the existing land uses along the Northern Avenue project corridor. The eastern end of the corridor between Grand Avenue and 83<sup>rd</sup> Avenue is primarily industrial uses with some agricultural uses mixed in. Major industries include the Salt River Project (SRP) Agua Fria Generating Station, Eaton Industrial Park, Rovey Dairy, Holly Asphalt, Smurfit-Stone Corporation – Container Division, KBI Lumber, and Alliance Lumber.

#### **83<sup>rd</sup> Avenue to Loop 101**

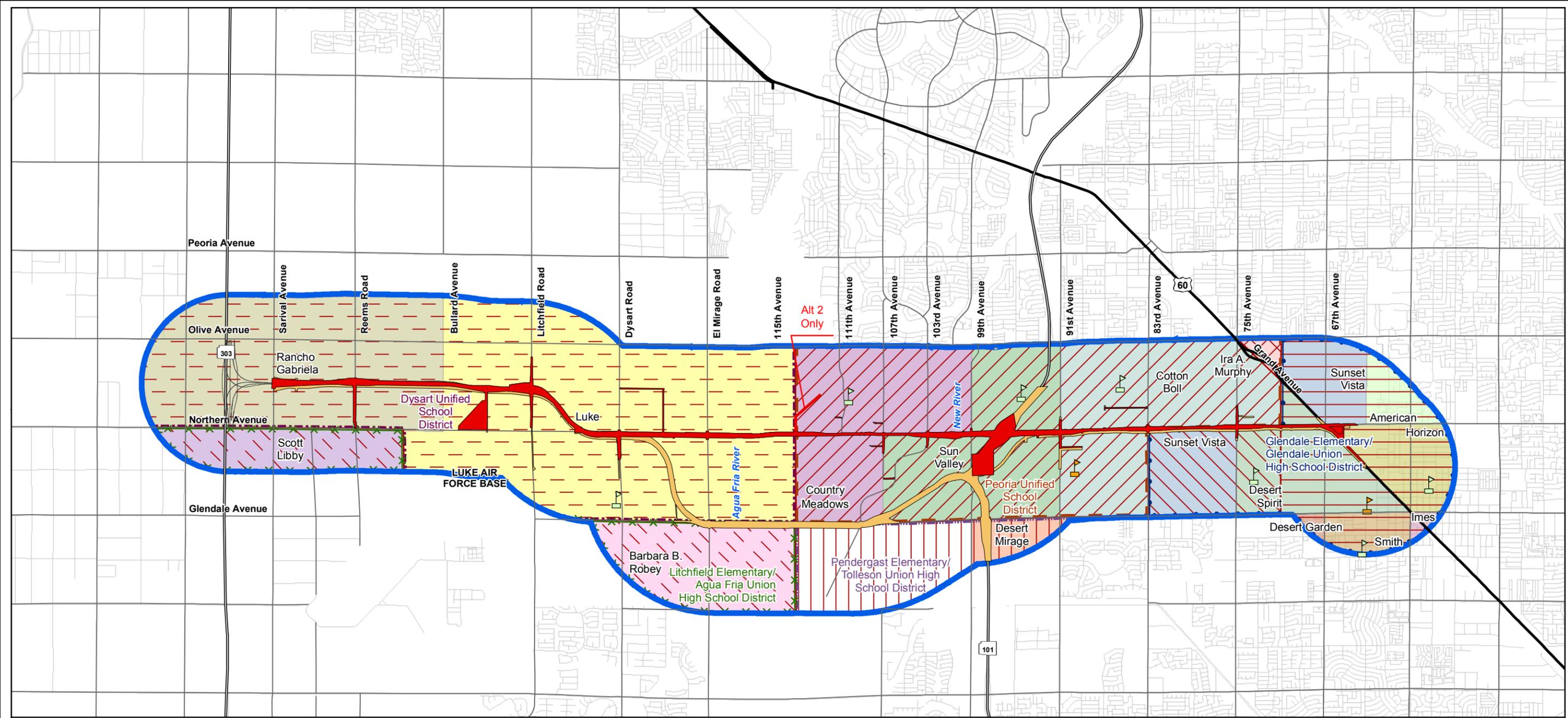
There are several residential neighborhoods on the north side of Northern Avenue between 87<sup>th</sup> and 91<sup>st</sup> avenues including Summersett Village and Meadowood. There are several single-family homes on large lots along the south side of Northern Avenue between 79<sup>th</sup> and 87<sup>th</sup> avenues. Rovey Farms Estates has been developed within the last five years, and it lies south of Northern Avenue and between 87<sup>th</sup> Avenue and 89<sup>th</sup> Avenue. The Peoria Crossing commercial “power center” occupies the area north of Northern Avenue between 91<sup>st</sup> Avenue and SR 101L while south of Northern Avenue is still being farmed in this section of Northern Avenue.



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FIGURE 1-8  
Municipal Jurisdictional Boundaries

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**Legend**

Alternatives 1 and 2	<b>School Districts</b>	Copper Canyon	Peoria	American	Desert Spirit	Scott Libby	Interstate/U.S. Highway State Highway Arterial Road Local Road
Alternative 3	Dysart Unified School District	Glendale	Raymond S. Kellis	Barbara B. Robey	Horizon	Smith	
Study Area	Glendale Elementary/ Glendale Union High School District	Independence	Shadow Ridge	Cotton Ball	Imes	Sun Valley	
Elementary School	Litchfield Elementary/ Agua Fria Union High School District	Millennium		Country Meadows	Ira A. Murphy	Sunset Vista	
High School	Pendergast Elementary/ Tolleson Union High School District			Desert Garden	Luke		
	Peoria Unified School District			Desert Mirage	Rancho Gabriela		

Source:  
Base: ALRIS 1997-2008, MAG 2000

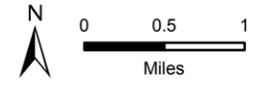


FIGURE 1-9  
School Boundary Map

# Existing Land Use Map

## Northern Parkway

Figure 1-10

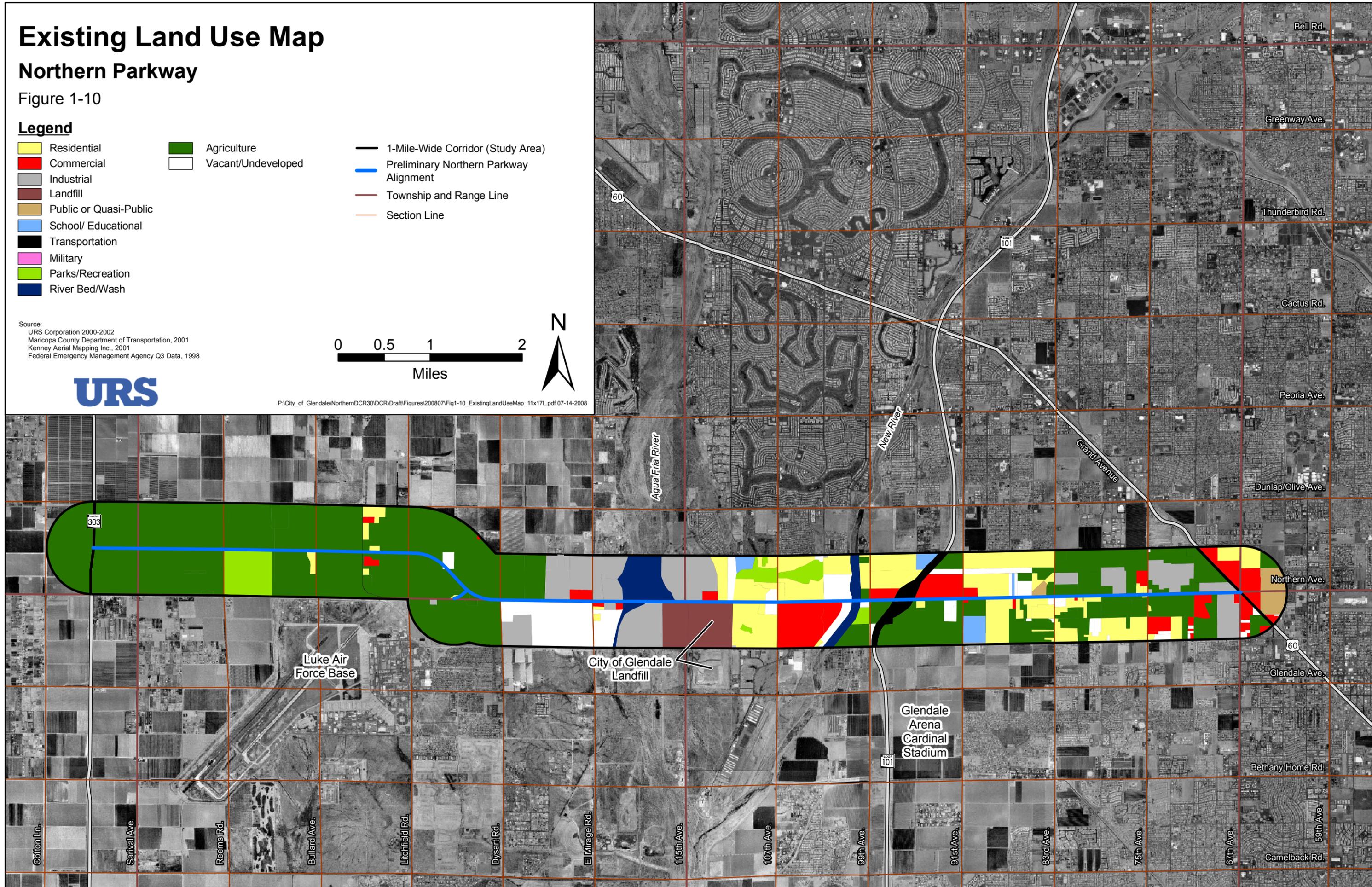
### Legend

- |  |  |  |
|--|--|--|
|  Residential            |  Agriculture        |  1-Mile-Wide Corridor (Study Area)      |
|  Commercial             |  Vacant/Undeveloped |  Preliminary Northern Parkway Alignment |
|  Industrial             |  |  Township and Range Line                |
|  Landfill               |  |  Section Line                           |
|  Public or Quasi-Public |  |  |
|  School/ Educational    |  |  |
|  Transportation         |  |  |
|  Military               |  |  |
|  Parks/Recreation       |  |  |
|  River Bed/Wash         |  |  |

Source:  
URS Corporation 2000-2002  
Maricopa County Department of Transportation, 2001  
Kenney Aerial Mapping Inc., 2001  
Federal Emergency Management Agency Q3 Data, 1998



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The Jobing.com Arena (Phoenix Coyotes hockey) has been constructed south of Glendale Avenue and east of Loop 101. The Westgate commercial area associated with the arena has been completed. Cabela's Sporting Goods has just been completed just north of Glendale Avenue and across from Westgate. The University of Phoenix Stadium (Arizona Cardinals football) is located just south of the arena. There are large parcels of undeveloped land just to the north of Glendale Avenue and extending to Northern Avenue on both sides of Loop 101. Anchored by the arena and stadium, and having good access to Loop 101, this large area is poised to be developed into intense urban uses. It is anticipated that traffic generated by the arena, stadium, and surrounding commercial areas will use Northern Parkway, 99<sup>th</sup> Avenue, future 93<sup>rd</sup>/95<sup>th</sup> Avenue, and 91<sup>st</sup> Avenue as routes to events in this area.

### **Loop 101 to Agua Fria River**

Between SR 101L and 99<sup>th</sup> Avenue, Parke West, a new commercial shopping area, is under development on the north side of Northern Avenue. Near New River there is some large acre residential development to the north, and developed residential subdivisions also north of Northern Avenue and Parke West. Between New River and Agua Fria River, there are substantial residential subdivisions on both sides of Northern Avenue interspersed with undeveloped parcels. The subdivisions include Country Meadows Unit 4, Country Meadows Townhouses, Country Meadows Estates, Suncliff Units 4 and 5, Country Meadows Units 9 and 10 and Country Meadows Condos Unit 2. The Glen Harbor industrial park is on the south side of Northern Avenue between 103<sup>rd</sup> Avenue and 107<sup>th</sup> Avenue. A Coca Cola Bottling Plant has recently been completed in this park and is adjacent to Northern Avenue. West of the residential areas, Glendale operates a municipal landfill on the south side of Northern Avenue.

The area near the Agua Fria River is used mostly for sand and gravel mining. These mining operations change the topography considerably in this area.

### **West of Agua Fria River**

West of the Agua Fria River, the corridor is mostly agriculture with the following exceptions. There is a large RV and mini storage operation on the northwest corner of Northern Avenue and El Mirage Road. West of the storage facility, Hansen Pipe has recently completed a major fabricating facility on the north side of Northern Avenue and approximately midway between El Mirage Road and Dysart Road. An area of large lot residential sites is located 0.25-mile to 0.5-mile west of Litchfield Road. These homes are accessed by 143<sup>rd</sup> Avenue from Olive Avenue.

Luke AFB is on the south side of Northern Avenue between Litchfield Road and 0.5 mile east of Reems Road; and the Falcon Dunes Golf Course (associated with Luke AFB) occupies one-quarter of a section on the north side of Northern Avenue east of Reems Road. Luke AFB is a major traffic generator in the area with 9,200 employees.

The World Wildlife Park is on the south side of Northern Avenue near SR 303L. There are plans to expand the wildlife park to the east and create the main entrance and parking area near the intersection of Northern Avenue and Sarival Avenue.

### 1.5.3 Planned New Development

There are approximately 15 development projects being planned along Northern Parkway as summarized in Table 1-3.

**Table 1-3 Planned New Development**

Description	Location
Equipment Rental Facility	E of 70 <sup>th</sup> Avenue, south side
Prevention Pest Control Facility	SE corner of 71 <sup>st</sup> Avenue
Northern Gateway Commerce Park	SW corner of 71 <sup>st</sup> Avenue
Northern Oaks Commerce Center	SE corner of 73 <sup>rd</sup> Avenue
Residential/Commercial	SE corner of 83 <sup>rd</sup> Avenue
Commercial	NE corner of 87 <sup>th</sup> Avenue
Residential	SE corner of 87 <sup>th</sup> Avenue
Glendale Self Storage	W of New River, south side
Office/Retail	SE corner of 103 <sup>rd</sup> Avenue
Office/Retail	SW corner of 103 <sup>rd</sup> Avenue
Calabria (mixed-use)	S side from Dysart to El Mirage Road
Employment	SW corner of Dysart Road
Woolf Industrial Park	Reems Road to 143 <sup>rd</sup> Avenue, both sides
Woolf Crossing (residential)	Sarival to 0.25-mile west of Reems, both sides
Woolf Crossing (commercial)	Loop 303 to Sarival, both sides

Woolf Crossing is planned west of Reems Road to Loop 303 and straddles the Northern Parkway alignment along the Butler Drive mid-section line. Many of the developments listed in the above table are currently inactive.

### 1.5.4 Existing Roadway Characteristics

Northern Avenue from Loop 303 to west of 112<sup>th</sup> Avenue is a two-lane rural roadway with traffic signals at Loop 303, Litchfield Road, Dysart Road and El Mirage Road. At 112<sup>th</sup> Avenue, the road has been widened on the north side as part of subdivision improvements. From 111<sup>th</sup> Avenue to 103<sup>rd</sup> Avenue, Northern Avenue is a five-lane urban section including a continuous left-turn lane. Traffic signals at 107<sup>th</sup> Avenue, 103<sup>rd</sup> Avenue, and 99<sup>th</sup> Avenue have recently been completed. Between 103<sup>rd</sup> Avenue and Loop 101, Northern Avenue is a four-lane section. At Loop 101, Northern Avenue is widened as part of the Loop 101 improvements to include two through lanes and a left-turn lane in each direction. Traffic signals are located at the Loop 101 ramps and Northern Avenue. East of Loop 101, Northern Avenue is a five-lane urban section as a result of a MCDOT roadway improvement project completed in 2000. Traffic signals are located at 93<sup>rd</sup> Avenue, 91<sup>st</sup> Avenue, 83<sup>rd</sup> Avenue, 75<sup>th</sup> Avenue, and at Grand Avenue.

### 1.5.5 Planned Functional Classifications

The Glendale Transportation Plan designates Northern Avenue as a super street west of Grand Avenue, with six through lanes and a planned right-of-way of 130 feet. Peoria’s General Plan designates Northern Avenue as an arterial roadway with up to six lanes and a right-of-way width of 130 feet. El Mirage’s General Plan designates Northern Avenue as a major arterial. MCDOT classifies Northern Avenue as an Enhanced Arterial which they define as a roadway that operates between an expressway and a principal arterial. It would have six lanes and 130 feet of right-of-way.

The functional classification for north/south roadways intersecting the proposed Northern Parkway were identified from the general plans for Glendale, Peoria, and MCDOT. The Findings are presented in Table 1-4.

**Table 1-4 Intersecting Street Functional Classifications**

Street	Glendale	Peoria	MCDOT
Sarival Avenue	Arterial	–	Minor Arterial
Reems Road	Arterial	–	Minor Arterial
Litchfield Road	Major Arterial	–	Principal Arterial
Dysart Road	Major Arterial	–	Principal Arterial
El Mirage Road N	–	–	Principal Arterial
El Mirage Road S	Arterial	–	Minor Arterial
115 <sup>th</sup> Avenue	–	Collector	Minor Arterial
107 <sup>th</sup> Avenue N	–	Minor Arterial	Minor Arterial
103 <sup>rd</sup> Avenue N	-	Collector	-
103 <sup>rd</sup> Avenue S	Arterial	–	Minor Arterial
99 <sup>th</sup> Avenue N	–	Minor Arterial	Principal Arterial
99 <sup>th</sup> Avenue S	Major Arterial	–	Principal Arterial
91 <sup>st</sup> Avenue N	–	Major Arterial	Principal Arterial
91 <sup>st</sup> Avenue S	Major Arterial	–	Principal Arterial
83 <sup>rd</sup> Avenue N	–	Major Arterial	Principal Arterial
83 <sup>rd</sup> Avenue S	Major Arterial	–	Principal Arterial
75 <sup>th</sup> Avenue N	–	Major Arterial	Principal Arterial
75 <sup>th</sup> Avenue S	Arterial	–	Principal Arterial

### 1.5.6 Related Planned Road Improvements

There are several improvements that are under way or in the planning process that closely relate to the proposed Northern Parkway. The principal projects are described below and represent the status of the projects as of October 2009.

**Grand Avenue:** In the past four years, eight grade separations have been constructed along Grand Avenue between Loop 101 and I-17. Near Northern Avenue the projects include a grade separation for 67<sup>th</sup> Avenue over Northern Avenue/Grand/Burlington Northern Santa Fe (BNSF)

Railroad, a grade separation for Olive over 75<sup>th</sup>/Grand/BNSF Railroad, and Grand underpass at Glendale Avenue/59<sup>th</sup> Avenue.

Other projects along Grand Avenue will upgrade Grand Avenue to a limited expressway status.. The City of Glendale developed a separate DCR in 2003 to further upgrade, and provide access control and beautification of Grand Avenue (Grand Avenue Limited Expressway Design Concept Study for the Glendale Area, December 4, 2003). The result will be an enhanced arterial along Grand Avenue that will serve in part as the continuation of the high capacity street concept envisioned for Northern Parkway. Accordingly, an enhanced connection between Northern Avenue and Grand Avenue is part of the Northern Parkway concept.

MAG completed an updated Major Investment Study for Grand Avenue in 2006. Proposed in this study are additional grade separations for Bethany Home Road at Grand/51<sup>st</sup> Avenue, Grand Avenue at Indian School Road/35<sup>th</sup> Avenue, and Grand Avenue at McDowell Road/19<sup>th</sup> Avenue. The concept also includes an increase in access control and beautification in the Glendale portion of Grand Avenue. These improvements are part of the MAG RTP with funding for access control and beautification improvements for Grand Avenue from Loop 101 to McDowell scheduled for Phase 1 (2006 to 2010) while the grade separations are planned for Phase 4 of the RTP (2021 to 2026). The Phase 1 improvements from Northern to Glendale avenues include land acquisition, utility undergrounding, streetlights, median closures, right-turn lanes, driveway closures, and landscaping. The Phase 1 project is currently under final design with construction anticipated to begin in the spring of 2011.

**SR 303L:** The existing Loop 303 roadway located between Sarival Avenue and Cotton Lane consists of a two-lane controlled access highway from Indian School Road to Grand Avenue. Recently, a new four-lane interim roadway was completed from south of Indian School Road to McDowell Road where SR 303L transitions to Cotton Lane.

The SR 303L – I-10 to US 60 DCR has been completed by MCDOT to improve Loop 303 to a full urban freeway. Loop 303 from I-10 to US 60 is in the current RTP and through the Proposition 400 funding program is scheduled for construction in Phase 2 (2011 to 2015). Development of plans to connect Northern Parkway to Loop 303 were coordinated during the concurrent preparation of the separate DCRs. The Northern Parkway Loop 303 system interchange is included in the SR 303L DCR. The responsibility for Loop 303 shifted from MCDOT to ADOT in July 2006. ADOT has begun the final design for this important freeway with construction in ADOT's 5-year program in FY 2012 and 2013.

**Olive Avenue:** Olive Avenue is a parallel roadway to Northern Avenue and is located one mile north of Northern Avenue. On March 28, 2003, MCDOT released an access control and corridor improvement study for Olive Avenue from the White Tank Regional Park to Dysart Road. Olive Avenue is designated a Road of Regional Significance and a Principal Arterial. It is planned to

ultimately provide six lanes of traffic; however, these improvements are not in the current 5-year MCDOT TIP.

East of Dysart Road, Olive Avenue passes through the cities of El Mirage, Peoria, and Phoenix and is a five-lane arterial 68 feet curb to curb. Intersection improvements are planned at 103<sup>rd</sup> Avenue and Olive by MCDOT, and MCDOT is planning to study possible improvements to the Olive Avenue Agua Fria River Bridge.

**SR 101L:** SR 101L (also known as Loop 101 and the Agua Fria Freeway) is a six-lane freeway that crosses Northern Avenue between 91<sup>st</sup> and 99<sup>th</sup> avenues. There is an existing diamond style interchange at Northern Avenue with Loop 101 elevated over Northern Avenue. ADOT has long-term plans to widen Loop 101 to include one high-occupancy vehicle (HOV) lane in each direction in the median and one additional general purpose lane in each direction on the outside of the existing lanes. These improvements are part of the MAG RTP with the HOV lane construction from I-10 to US 60 in Phase 3 (2016 to 2020) and the general purpose lane addition in Phase 4 (2021 to 2026). The HOV lane construction is designed as a design-build project that is scheduled to begin in January 2011 and take 2 years to complete.

**El Mirage Road:** MCDOT has recently completed a DCR for El Mirage Road from Northern Avenue to Bell Road. Improvements to El Mirage Road from Northern Avenue to Jomax Road including a grade separation at Grand Avenue are included in the MAG RTP. The improvements on El Mirage Road are phased beginning in 2013 with completion scheduled for 2019 per the MAG Arterial Life Cycle Program. With a proposed connection to Loop 303, El Mirage Road is planned to be a major north-south route in the area.

**99<sup>th</sup> Avenue:** The City of Peoria has plans to extend 99<sup>th</sup> Avenue across New River and connect directly with existing 99<sup>th</sup> Avenue north of Olive Avenue. 99<sup>th</sup> Avenue will be widened to a five-lane section from Northern Avenue to Olive Avenue. This improvement project is listed in 2028 in the Peoria Transportation Needs Study.

**91<sup>st</sup> Avenue:** The City of Peoria has plans to improve 91<sup>st</sup> Avenue from Northern Avenue to Olive Avenue according to their Transportation Needs Study. The improvements include widening 91<sup>st</sup> Avenue to three lanes in each direction and a raised median. These improvements are planned for 2017 and 2018 according to the Peoria study.

**83<sup>rd</sup> Avenue:** Improvements to 83<sup>rd</sup> Avenue from Northern Avenue to Olive Avenue are planned by the City of Peoria. Improvements consist of constructing a five-lane section. The Peoria Transportation Needs study shows the construction in 2031.

### **1.5.7 Other Related Planned Improvements**

**New River Multi-Use Path:** The City of Glendale is planning to construct the New River multi-use path from Northern Avenue to Bethany Home Road within the next five years. The path begins on the north side of Northern Avenue east of the New River and ramps down into the river channel and crosses under the existing Northern Avenue bridge and proposed bridges to the south.

**Agua Fria Linear Recharge Project:** The Sub-Regional Operating Group (SROG) with sponsoring cities of Glendale, Mesa, Phoenix, Scottsdale, and Tempe, and in partnership with the Bureau of Reclamation is proposing a linear recharge system along the Agua Fria River from Indian School Road to Bell Road. The Agua Fria Linear Recharge Project is a proposed groundwater replenishment project. The purpose of the current phase of the project is to investigate the possibility of using high quality reclaimed water from the 91<sup>st</sup> Avenue Wastewater Treatment Plant (WWTP) to replenish the aquifer. Reclaimed water from the WWTP will be piped north along the river or along El Mirage Road and discharge into the river at various locations. A 90-inch pipe is planned to cross Northern Parkway, and a discharge location is just south of Northern Avenue. Construction is anticipated in the years 2010-2012.

## **1.6 PRIOR STUDIES AND SUPPORTING DOCUMENTS**

There are several supporting documents to this Final DCR for Northern Parkway as well as documents previously produced that will supplement this DCR. A list of these documents and their current status is provided as follows:

- Final Design Concept Report for Northern Parkway, Volumes 1 and 2, October 1, 2003
- Northern Parkway Final Environmental Assessment, April 26, 2010
- Northern Parkway Draft Drainage Report, November 17, 2006
- Northern Parkway Draft Traffic Analysis Report, July 31, 2008
- Northern Parkway Preliminary Geotechnical and Pavement Design Report, May 2007