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Northern Parkway

Final Design Concept Report
Executive Summary

Federal Project No. STP-MMA-0(034)N

Partner Agencies:
- City of Peoria
- City of El Mirage
- Maricopa County
- City of Glendale

Northern Parkway

Executive Summary

The Northern Parkway is a planned regional transportation facility that extends approximately 12 miles from SR 303L (Estrella Freeway or Loop 303) to US 60 (Grand Avenue) and will replace Northern Avenue for a portion of this distance. The project was first conceived by the Glendale Citizens Advisory Committee for Transportation Issues (CACTI) in 2001 during the preparation of the Glendale Transportation Plan. Since then, it was included in ballot initiatives for funding and approved by the voters in Glendale in 2001, Proposition 400 county-wide vote in 2004, and Peoria voters in 2005. The project is included in the Regional Transportation Plan (RTP) prepared by the Maricopa Association of Governments (MAG), the Maricopa County Major Streets and Routes Plan, the Glendale Transportation Plan, and in the Glendale General Plan Amendment (December 21, 2005).

A committee was formed comprised of staffs from Glendale, Peoria, Maricopa County, El Mirage, Arizona Department of Transportation (ADOT), and Luke Air Force Base (AFB). A Design Concept Report was prepared and published in 2003. Since that time, and with the regional funding approved through Proposition 400, a revised and updated Draft Design Concept Report was prepared (July 31, 2008). In cooperation with the Federal Highway Administration (FHWA), an Environmental Assessment is being prepared for the project so that federal funds may be used for the project.

The proposed Northern Parkway will be an enhanced arterial street. The enhanced arterial street has grade-separated intersections (GSI) at major cross streets to eliminate the major traffic signals on Northern Parkway (see Figure 1). The ultimate roadway would have approximately twice the traffic-carrying capacity of a typical arterial and would enable traffic to average speeds of 45 miles per hour (mph) as compared to typical arterials with average speeds between 25 and 35 mph. Northern Parkway would provide a much-needed higher speed, higher-capacity east-west route in the central portion of the West Valley where no freeways are planned. Interstate 10 (I 10) is 6 miles to the south, and SR 101L/Agua Fria Freeway (Loop 101) (east-west portion) is 8 miles to the north. The Northern Parkway will link central Glendale and southern Peoria to the rapidly developing far West Valley.

Figure 1. Prototype Grade Separated Intersection

Selection of the Northern Avenue Corridor

Northern Avenue is one of only a few continuous east-west streets from Grand Avenue to Loop 303. It is strategically located on the boundary between Glendale and the cities of Peoria and El Mirage. It is equidistant between I 10 and Bell Road, and it lies near Luke AFB. There is less existing urban development adjacent to Northern Avenue than other streets. The Northern Parkway, when combined with eight recently constructed grade separations on Grand Avenue and three more planned (at 51st Avenue, 35th Avenue, and 19th Avenue), will create a new, high-capacity corridor, connecting the West Valley area of the Phoenix metropolitan area (West of I 10) from Loop 303 to central Phoenix. Several alternative corridor alignments were identified and evaluated between Glendale and Olive Avenues. The Northern Avenue corridor shifting to the Butler Drive mid-section line west of Dysart Road was found to be the best overall alignment.

Purpose and Need for Northern Parkway

The Northern Parkway Management Committee built on work by the Glendale CACTI group and confirmed the following needs for Northern Parkway:

- Serve population growth in the West Valley.
- Improve travel time between SR 303L and US 60 (Grand Avenue).
- Provide regional connectivity to other regional facilities in the area including SR 303L, SR 101L, and US 60.
- Improve regional facility transportation spacing in the area as it develops.
- Provide an additional Agua Fria River bridged crossing to ensure safe, reliable access at all times to the growing area west of the Agua Fria River.
- Improve east-west street traffic flow by providing a free flow route that can accommodate a large amount of traffic to compensate for the limited street network.
- Implement regional and local plans to improve traffic flow in the West Valley.
- Reduce accident rates by reducing the number of traffic signals and access points.

Alternatives Considered

Many options were considered along the 12-mile corridor to best meet the purpose and need for Northern Parkway. These options were combined over the 12-mile corridor to form four alternatives as follows:

- Alternative 1 – Northern Avenue Alignment Option 1 (with two traffic signals)
- Alternative 2 – Northern Avenue Alignment Option 2 (no traffic signals)
- Alternative 3 – Southern Alignment
- No Build Alternative

Proposed Concept

Alternative 1 was determined to meet the purpose and need the best. An important feature of the preferred Northern Parkway concept is the inclusion of 10 Grade Separated Intersections (GSI) at north-south arterials. At GSI locations, Northern Parkway would be elevated over the intersecting arterial, which remains at grade except for Litchfield Road. The GSI would allow Northern Parkway to be free flow at these locations. The ramp connections from/to the parkway would have a signalized intersection with the arterial.

Northern Parkway is proposed to have three continuous through lanes in each direction plus an auxiliary lane between GSIs connecting an on-ramp from one GSI to the off-ramp of the next GSI. A concrete barrier median will be provided throughout most of the project (Sarival Avenue to 112th Avenue and on all GSI) but some areas will have a landscaped median (112th to 103rd avenues and between the GSI's at 91st, 83rd, and 75th). Figure 1 illustrates an elevated GSI. Figure 2 provides an overview of the proposed 12-mile long project.

Loop 303 Connection. A fully directional free flow "T" interchange has been proposed for Northern Parkway at Loop 303. The interchange is anticipated to be a part of the Loop 303 project and built by ADOT so its costs are not included in this study. The interchange is located at the mid point between Northern and Olive Avenues at the Butler Drive mid-section location.

Sarival to Dysart. The Northern Parkway project begins at the Sarival Avenue section line and continues eastward along the Butler Drive alignment to Litchfield Road. It would then swing south to the Northern Avenue alignment at Dysart Road and continue along this alignment to US 60 (Grand Avenue). Northern Parkway will be fully access controlled from Loop 303 to 115th Avenue. Full shoulders will be provided along with a median barrier. A drainage channel will be constructed along the northern side of the parkway to intercept offsite overland flows and to convey the storm runoff to various outfalls. Some of these facilities would be jointly funded by the Flood Control District of Maricopa County (FCDMC).

Working with Luke AFB, the Butler Drive alignment was chosen to move Northern Parkway away from the north end of the runways. In addition, special design features were incorporated into the Litchfield Road GSI. Litchfield Road will be constructed below ground so that the height of the bridge structure for the parkway over Litchfield Road will be lower than other GSI structures for Northern Parkway.

Dysart to 115th Avenue. Frontage roads are planned between Dysart Road and El Mirage Road to accommodate expected truck traffic from the developing industrial uses. In addition, alternative access streets are planned at 127th Avenue and Butler Drive.

A major new bridge is planned at the Agua Fria River at the existing dip crossing area. A master plan for channelizing the river has been prepared by FCDMC and its implementation is dependent upon participation by the sand and gravel extraction operations in the general flood plain area. Timing for the bridge construction is planned to coincide with the river channelization. If an agreement is not achieved, the Northern Parkway partners would

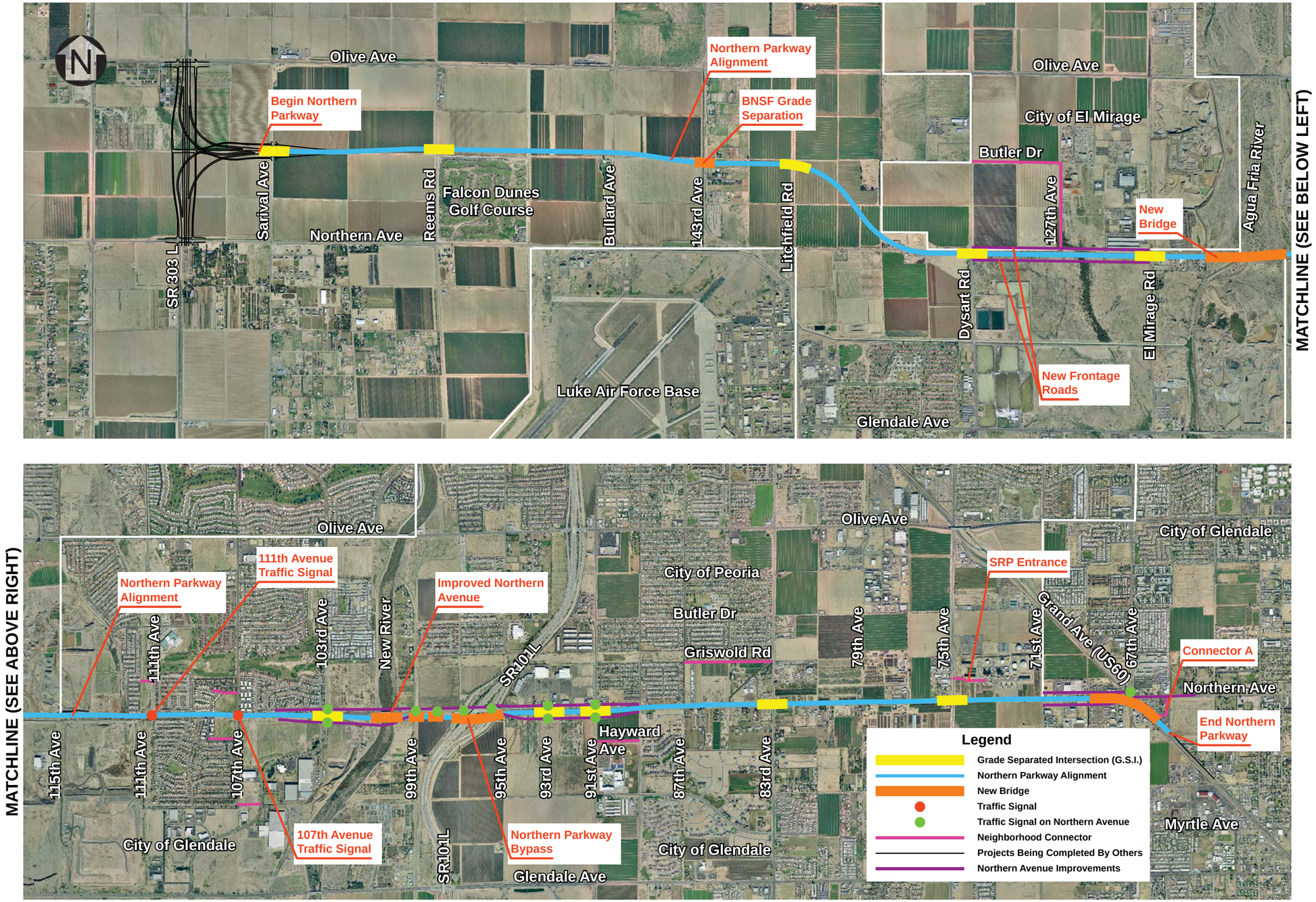


Figure 2. Overview of Preferred Northern Parkway Concept

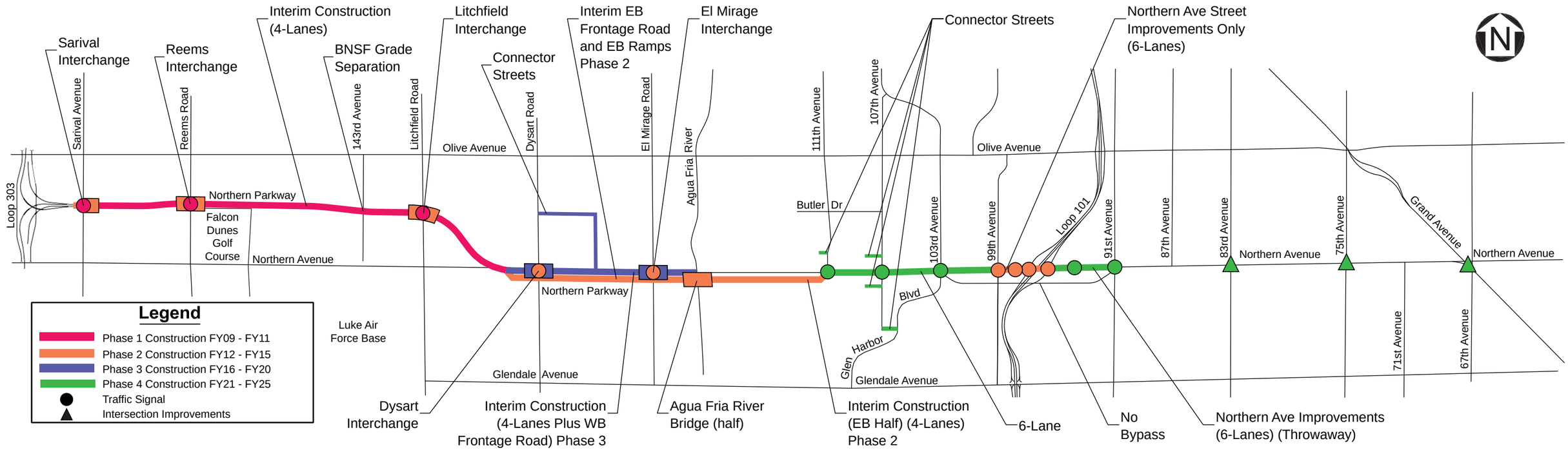


Figure 3. Funded Phasing Plan (2009-2025)

cost share with FCDMC to channelize a portion of the river and build the bridge.

115th Avenue to 103rd Avenue. From 115th to 103rd avenues, traffic signals at 111th and 107th avenues would be provided to facilitate neighborhood access. The signals would have left-turn phases for Northern Parkway traffic. No left turns would be permitted anywhere on the parkway other than at these two signals. Four neighborhood connector streets would be constructed in this segment to aid restoration of access to all the neighborhoods. Curbs, gutters, sidewalks, street lighting and landscaping would be provided. After these improvements are completed, studies would be undertaken to address any additional improvements that may be needed to meet the needs of the neighborhoods and the motoring public.

103rd Avenue to 91st Avenue. Between 103rd and 91st avenues, a unique configuration was developed that includes maintaining a portion of Northern Avenue to provide access to properties and to Loop 101. A separate fully access controlled bypass would be provided for Northern Parkway that will be aligned to the south of Northern Avenue. The bypass would be elevated over 99th Avenue, 97th Avenue, Loop 101, 93rd Avenue, and 91st Avenue and depressed under 103rd Avenue. It will have three lanes in each direction plus an auxiliary lane between the ramps.

The existing Northern Avenue between 103rd and 99th and between Loop 101 east ramp intersection and 91st Avenue will be modified so that eastbound traffic would be accommodated on a new 3-lane roadway south of the bypass while the westbound traffic would use the existing Northern Avenue modified to allow 3 through lanes.

Between 99th Avenue and the east ramps of Loop 101, Northern Avenue will be widened to 3 lanes in each direction plus and dual left turn lanes. Northern Avenue not the bypass would be used to access Loop 101 . The bypass will carry at least half of the future east-west traffic so that the widened Northern Avenue at Loop 101 can accommodate the remainder of the traffic.

91st Avenue to 71st Avenue. From 91st Avenue to 71st Avenue, Northern Parkway will replace Northern Avenue. GSI are planned at 83rd and 75th avenues. No signals are planned on Northern Parkway in this section. Three neighborhood connector streets are planned to restore full access: (1) for Rovey Estates to 91st Avenue; (2) between 87th and 83rd avenues 0.25 mile north of Northern; and (3) for the Salt River Project (SRP) Agua Fria Generating Station. Curbs, gutters, sidewalks, street lighting and landscaping would be provided.

Grand Avenue Connection. At US 60 (Grand Avenue), a direct flyover ramp is planned to connect the west leg (Northern Parkway) to the southeast leg of Grand Avenue. Eastbound traffic on Northern Parkway can use this flyover to move uninterrupted to Grand Avenue. The reverse movement can also be made on this flyover. The flyover would be in the median of Northern Parkway and of Grand Avenue. Improvements to the intersection of Grand Avenue and Myrtle Avenue near downtown Glendale will be needed to accommodate the increased traffic on Grand Avenue expected from Northern Parkway.

Function/ROW/Utilities. Northern Avenue will continue eastward from the beginning of the Grand Avenue flyover (71st Avenue) to connect with Grand Avenue at the signalized intersection as it does today. Northern Avenue would be widened at the intersection to provide four through lanes in each direction and a westbound right-turn lane. All left turns at this intersection would be prohibited but be accommodated by the existing or planned connector streets.

Northern Parkway is planned as a major traffic thoroughfare so that bicycles and local bus service are discouraged along this roadway. Parallel routes are available.

The right-of-way required for the planned Northern Parkway varies from 435 feet on the western portion where a drainage channel is required to a minimum of 140 feet between GSI on the eastern end. The eastern portion GSI are designed to fit in 255 feet of right-of-way. Glendale and Peoria are actively preserving right-of-way as development plans are presented or hardship cases arise.

Construction of Northern Parkway preferred alternative will require the relocation of approximately 28 houses and 9 businesses.

The project would require extensive relocation of utilities to accommodate the GSI. The utilities will be located along the ramp connectors associated with the GSI. A major natural gas facility at 109th Avenue will require relocation and it is conceptually planned to close a portion of 109th Avenue to provide a place for this relocation.

Cost/Funding

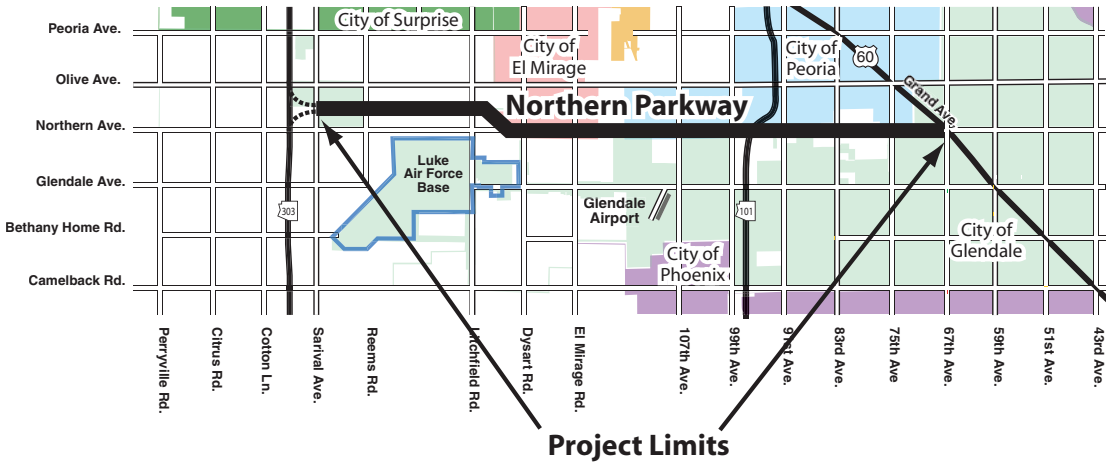
Based on recent unit prices, construction of the Northern Parkway is projected to cost a total of $496.8 million (2009 dollars). Engineering cost is estimated to be $39.87 million (2009 dollars) and right-of-way is estimated at $76.1 million (2009 dollars) for a total project cost of $612.6 million. The inflated cost estimate based on construction being complete in 2035 would range from $973 million to $1.051 billion.

The Northern Parkway is included in the MAG RTP as a Arterial Life Cycle Program (ALCP) project. The regional funds provided through Proposition 400 would provide a maximum 70 percent of the project cost or the set reimbursement budget established in the RTP whichever is less. The local match would be provided by Glendale, MCDOT, Peoria, and El Mirage. The regional funds are identified as federal STP-MAG funds in the ALCP. The current cost estimate ($612.6 million) exceeds the amount set in the 2008 ALCP ($229.208 million in 2009 dollars) plus local match ($98.2 million in 2009 dollars) and other funding ($15.9 million in 2009 dollars) so completion of the final stages of the Northern Parkway may require additional funding or be completed after the current RTP.

Schedule

The completion of Northern Parkway is phased in the MAG RTP. The RTP has $59.908 million earmarked for Phase 1 (2009 to 2011); $83.871 million in Phase 3 (2016 to 2020) and $85.429 million in Phase 4 (2021 to 2025). These funds are in 2009 dollars. A construction phasing plan has been reviewed and accepted by the Northern Parkway Executive committee for the funded portion of the project (see Figure 3). In the first phase, at grade interim construction is planned from Sarival Avenue to Dysart Road including ultimate right-of-way for this portion of the parkway. The interim improvements consisting of 2 lanes in each direction are extended to 112th Avenue in Phase 2 along with GSI at Sarival Avenue, Reems Road, and Litchfield Road plus the Agua Fria River half bridge. Additional GSI would be constructed in Phase 3 including Dysart Road and El Mirage Road. Improvements to Northern Parkway from 112th Avenue to 103rd Avenue are included in Phase 4 along with Northern Avenue street improvements from 103rd to 91st avenues. Interim intersection improvements at Northern Avenue and 91st, 83rd, 75th and Grand avenues are also included in Phase 4. Construction of other improvements between Loop 101 and Grand Avenue, the Northern Parkway bypass from 103rd to 91st avenues, and ultimate improvements from Loop 303 to Loop 101 would occur after 2025.

Public and Agency Involvement

In 2002, a committee was formed to begin the development of the concept for the Northern Parkway. A design concept report was published in October 2003. After passage of Proposition 400, the committee was reformed as the Northern Parkway Executive Committee. Voting members (partners) of this committee consist of El Mirage, Glendale, MCDOT, and Peoria. Non voting members include ADOT, MAG, Luke AFB, and FCDMC.

Public meetings specifically addressing the Northern Parkway were held in February and July 2003 and in June and December 2005. An agency scoping meeting was held in February 2005. Meetings with individual neighborhoods were held in January through March 2006.