3

How detailed are the designs of the action alternatives?

The level of design when discussed in the context of freeway design is typically addressed in percentages. For example, "100 percent plans" imply the engineering is complete and a contractor can begin freeway construction based on the plans. Any value less than 100 percent indicates that engineers and designers are still formulating design features of the project.

The action alternatives studied in a DEIS must have sufficient design and engineering completed for ADOT to:

- **know the proposed action could be constructed**
- **allow analysts to meaningfully assess and compare impacts that would occur from any of the action alternatives**
- **allow determinations to be made about the proposed action**

At the same time, the level of design should not (for use in the DEIS) inhibit engineers and designers from making minor changes later in the project development process that could lead to optimized performance, project savings, and/or impact reductions.

ALTERNATIVES STUDIED IN DETAIL

NO-ACTION ALTERNATIVE

The No-Action Alternative is included for detailed study in accordance with NEPA requirements to compare beneficial and adverse impacts of the action alternatives with those benefits and consequences (adverse impacts) of not proceeding with one of the action alternatives. The No-Action Alternative would not extend SR 202L (Santan Freeway) west of I-10 (Maricopa Freeway); however, it would include all other projects included in the RTP. Traffic on the existing segment of SR 202L (Santan Freeway) as well as along I-10 would need to use existing Interstate and Regional Freeway and Highway System facilities or the local street network. As described in Chapter 1, *Purpose and Need*, regional traffic volumes are projected to increase substantially (vehicle miles traveled [VMT] are projected to nearly double between 2010 and 2035), and the No-Action Alternative would not alleviate projected increases in traffic volumes and congestion on the Interstate and regional freeway systems nor on the local street network by the design year 2035. Implementation of the No-Action Alternative would result in:

- ➤ further difficulty in gaining access to adjacent land uses
- ➤ increased difficulty in gaining access to Interstate and regional freeway systems from the local arterial street network
- ➤ increased levels of congestion-related impacts
- ➤ continued degradation in performance of regional freeway-dependent transit services
- ➤ increased trip times and higher user costs

Impacts of the No-Action Alternative are described in Chapter 4, *Affected Environment, Environmental Consequences, and Mitigation*. They are appropriately presented in that chapter to facilitate a comparison of impacts with the action alternatives.

Further, as described in Table 3-9, an important link in the Regional Freeway and Highway System would not be constructed, thereby resulting in increased congestion on completed segments of the Regional Freeway and Highway System. The No-Action Alternative would be inconsistent with MAG and local jurisdictions' long-range planning and policies. For example, both SR 30 and ARS would need to be reassessed in terms of purpose and need and logical termini and be reanalyzed in terms of traffic performance. The No-Action Alternative would not adequately serve transit opportunities because it would preclude future development of HOV lanes, express bus service, and park-and-ride lots adjacent to the proposed action.

The No-Action Alternative would not satisfy the purpose and need of the proposed action (refer to Chapter 1, *Purpose and Need*). Identification of the No-Action Alternative as the Selected Alternative would not preclude a project similar to the proposed action from being proposed.

ACTION ALTERNATIVES

This section presents freeway alternatives studied in detail in the DEIS. It describes design, operational, and cost characteristics of each action alternative to the extent possible, given the level of design conducted for each of the action alternatives (see sidebar regarding design detail, on this page). The same design concepts, principles, standards, and assumptions were applied to all action alternatives.

Horizontal and Vertical Alignments

Figures 3-20 through 3-25 illustrate horizontal and vertical alignments (or profiles) of the action alternatives. The following text supports the information depicted in the figures.

Western Section

In the Western Section, alignment descriptions for the action alternatives begin at their western terminus with I-10 (Papago Freeway) and proceed east to the common point among all action alternatives. Table 3-11 presents additional data pertaining to the Western Section action alternatives (see page 3-48).

W59 Alternative (Preferred Alternative)

Horizontal Alignment: The W59 Alternative would connect to I-10 (Papago Freeway) with a system traffic interchange, which would replace the existing service traffic interchange at 59th Avenue and would convert the existing 59th Avenue to two-lane northbound and southbound frontage roads approximately between Van Buren Street and the RID canal. From I-10 (Papago Freeway), the W59 Alternative would proceed south along the eastern side of 59th Avenue, crossing Roosevelt and Van Buren streets, then shift to the western side, crossing the UPRR tracks and Buckeye Road before making a slight western shift approximately ⅓ mile north of Lower Buckeye Road. The W59 Alternative would then travel south, crossing Lower Buckeye Road, Broadway Road, the Salt River, and Southern Avenue before making a slight shift to the east. The W59 Alternative would continue south, approximately ¼ mile west of 59th Avenue, and would cross Baseline and Dobbins roads. It would continue south and then make a curve transition from the southern to the southeastern direction to cross Elliot Road and connect with the E1 Alternative at the point common to all action alternatives on an alignment parallel and adjacent to the Community boundary.

Vertical Alignment: Beginning at a new system traffic interchange with I-10 (Papago Freeway) at 59th Avenue, the W59 Alternative would start as an elevated facility. The alternative's vertical alignment would be a rolling profile, passing over all arterial streets, railroad tracks, canals, and the Salt River (for additional information, see sidebar on the facing page discussing the rolling profile). Between these features, the W59 Alternative would descend toward the existing grade. All arterial streets would remain at their existing elevations, with minor variations. South of the Salt River, the profile would pass over Southern Avenue, Baseline Road, the Laveen Area Conveyance Channel, Dobbins Road, and Elliot Road before connecting to the E1 Alternative.

W71 Alternative

Horizontal Alignment: The W71 Alternative would proceed from a new system traffic interchange with I-10 (Papago Freeway) at 71st Avenue to the south-southeast, crossing Roosevelt Street, Van Buren Street, and the UPRR tracks before turning to the southwest, crossing

Buckeye Road at approximately 71st Avenue. In its southwestern direction, the W71 Alternative would curve around the western side of Santa Maria Middle School, crossing Lower Buckeye Road approximately ¼ mile east of 75th Avenue. South of Lower Buckeye Road, the W71 Alternative would continue to the south, crossing Broadway Road, the Salt River, and Southern Avenue. Just north of Baseline Road, the W71 Alternative would begin the curve transition to the southeastern direction and would cross Baseline Road, the Laveen Area Conveyance Channel, Dobbins Road, and Elliot Road on an alignment parallel and adjacent to the Community boundary. The W71 Alternative would connect with the E1 Alternative at a point common to all action alternatives.

Vertical Alignment: The W71 Alternative would begin as an elevated facility at its system traffic interchange with I-10 (Papago Freeway) and continue as a rolling profile that would pass over all arterial streets, railroad tracks, canals, and the Salt River. Between these features, the W71 Alternative would descend toward the existing grade. All arterial streets would remain at their existing elevations, with minor variations. South of the Salt River, the profile would pass over Southern Avenue, Baseline Road, and the Laveen Area Conveyance Channel. The profile would then dip below the existing grade approximately 10 feet at Dobbins Road (which would be elevated to pass over the freeway). The W71 Alternative would then rise above the existing grade and pass over Elliot Road before connecting to the E1 Alternative.

W101 Alternative and its Options

Horizontal Alignment: Unlike the W59 and W71 Alternatives, the W101 Alternative, as studied in the DEIS, has three horizontal alignment options (see Table 3-10).

Vertical Alignment: The options associated with the W101 Alternative would all have similar vertical alignments. Generally, while the horizontal alignment of SR 101L (Agua Fria Freeway) would be modified beginning at Thomas Road, its vertical alignment would match its existing condition. SR 101L (Agua Fria Freeway) would continue to travel along the existing grade and cross over I-10 approximately 25 feet aboveground.

South of I-10, the W101 Alternative and its Options would have a rolling vertical alignment that would pass over all arterial streets, railroad tracks, canals, and the Salt River. As with the other action alternatives, between these features, the W101 Alternative would descend toward the existing grade. All arterial streets would remain at their existing elevations, with minor variations. South of the Salt River, the profile would pass over Southern Avenue, Baseline Road, and the Laveen Area Conveyance Channel. The profile would then dip below the existing grade approximately 10 feet at Dobbins Road (which would be elevated to pass over

Table 3-10 Horizontal Alignments, W101 Alternative and Options, Western Section

Alternative Option[a]	Horizontal Alignment Description	I-10[b] Connection Comments
W101 Alternative Western Option	The Western Option would proceed from a new system traffic interchange with I-10 (Papago Freeway) and SR 101L[c] (Agua Fria Freeway) in a southerly direction across Roosevelt Street, Van Buren Street, UPRR[d] tracks, Buckeye Road, and Lower Buckeye Road before transitioning to an east-southeasterly direction. After crossing 91st Avenue just south of Broadway Road, the Western Option would head southeasterly to cross the Salt River, Baseline Road, the Laveen Area Conveyance Channel, Dobbins Road, and Elliot Road on an alignment parallel and adjacent to the Gila River Indian Community boundary. The Western Option would connect to the E1 Alternative at the point common to all action alternatives.	Each alignment option (Western, Central, or Eastern) for the W101 Alternative would connect to I-10 (Papago Freeway) at the I-10/SR 101L (Agua Fria Freeway) system traffic interchange. For each option, the connection would be made by partially reconstructing the existing traffic interchange or by fully reconstructing the interchange. One design difference between the Partial Reconstruction and Full Reconstruction variants of any of the options relates to horizontal alignment of a segment of the proposed action. The Partial Reconstruction variant would cross approximately 230 feet west of the existing interchange location; the Full Reconstruction variant would cross approximately 700 feet west of the existing interchange location (*W101 Alternative, Partial Reconstruction or Full Reconstruction of the Existing System Interchange Memorandum,* 2006).
W101 Alternative Central Option	The Central Option would proceed from a new system traffic interchange with I-10 (Papago Freeway) and SR 101L (Agua Fria Freeway) in a southerly direction along the same alignment as the Western Option until just south of Van Buren Street. South of Van Buren Street, the Central Option would turn to the southeast, crossing the UPRR tracks and Buckeye Road, and then turn south after crossing 91st Avenue. Prior to reaching Broadway Road, the Central Option would turn to the southeast across Broadway Road. The Central Option would then follow the same alignment as the Western Option until connecting with the E1 Alternative at the point common to all action alternatives.	
W101 Alternative Eastern Option	The Eastern Option would proceed from a new system traffic interchange with I-10 (Papago Freeway) and SR 101L (Agua Fria Freeway) in a southerly direction along the same alignment as the Western Option until just south of Van Buren Street. South of Van Buren Street, the Eastern Option would turn to the southeast, crossing the UPRR tracks, Buckeye Road, 91st Avenue, Lower Buckeye Road, 83rd Avenue, and Broadway Road. South of Broadway Road, the Eastern Option would follow the same alignment as the Western Option until connecting with the E1 Alternative at the point common to all action alternatives.	

[a] Each W101 Alternative option would require SR 101L (Agua Fria Freeway) realignment for approximately 1.25 mile between Thomas Road and Interstate 10 (Papago Freeway).
[b] Interstate 10
[c] State Route 101L (Loop 101)
[d] Union Pacific Railroad

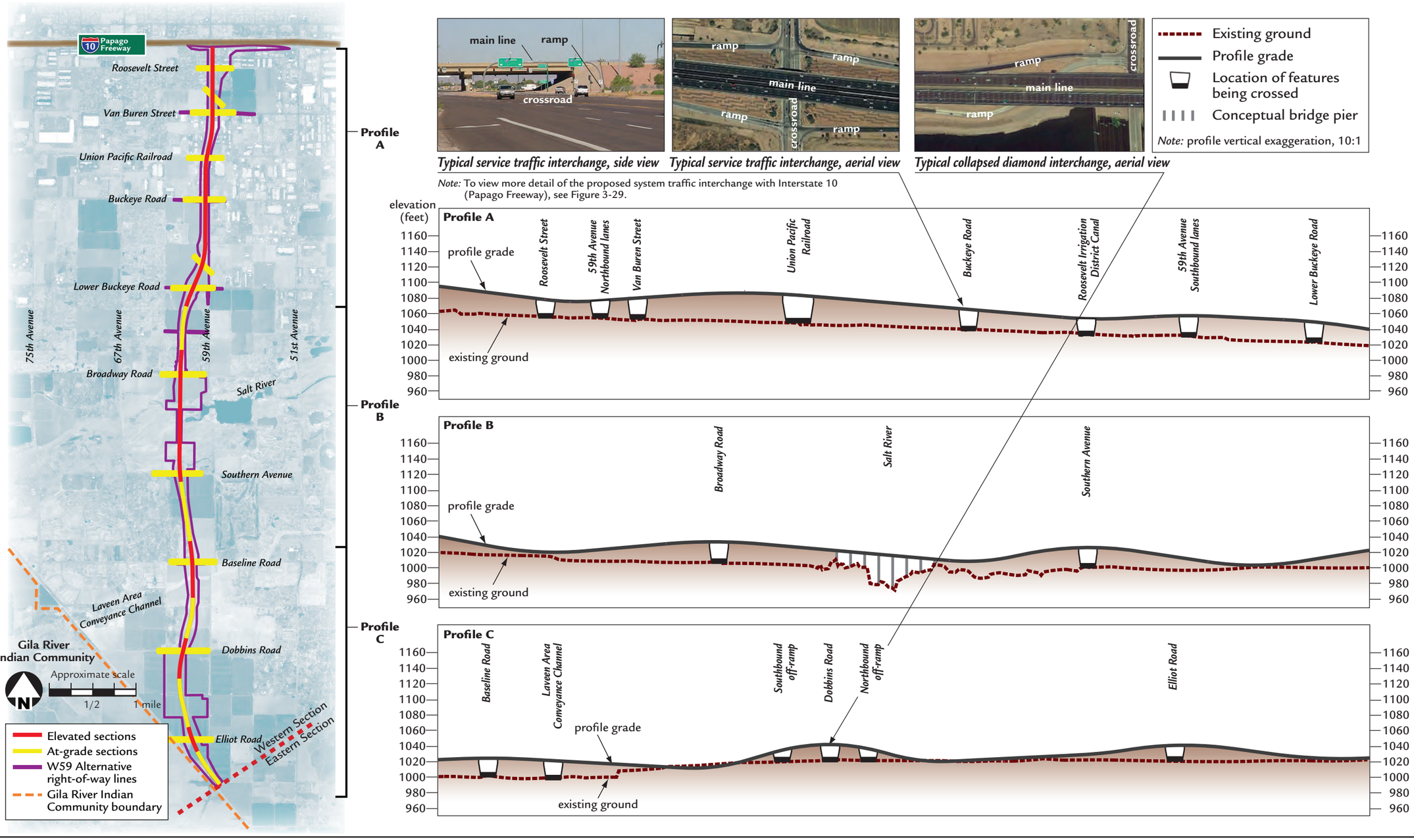
Why use a rolling profile?

The use of the "rolling" profile is evident in other existing freeways in the MAG region. Good examples of the profile can be seen on portions of SR 101L (Agua Fria and Pima freeways). The concept can:

- **be cost-effective**
- **balance costs associated with the export and import of fill materials**
- **provide operational benefits because it is a common feature on the region's freeways and drivers are, therefore, familiar with it**

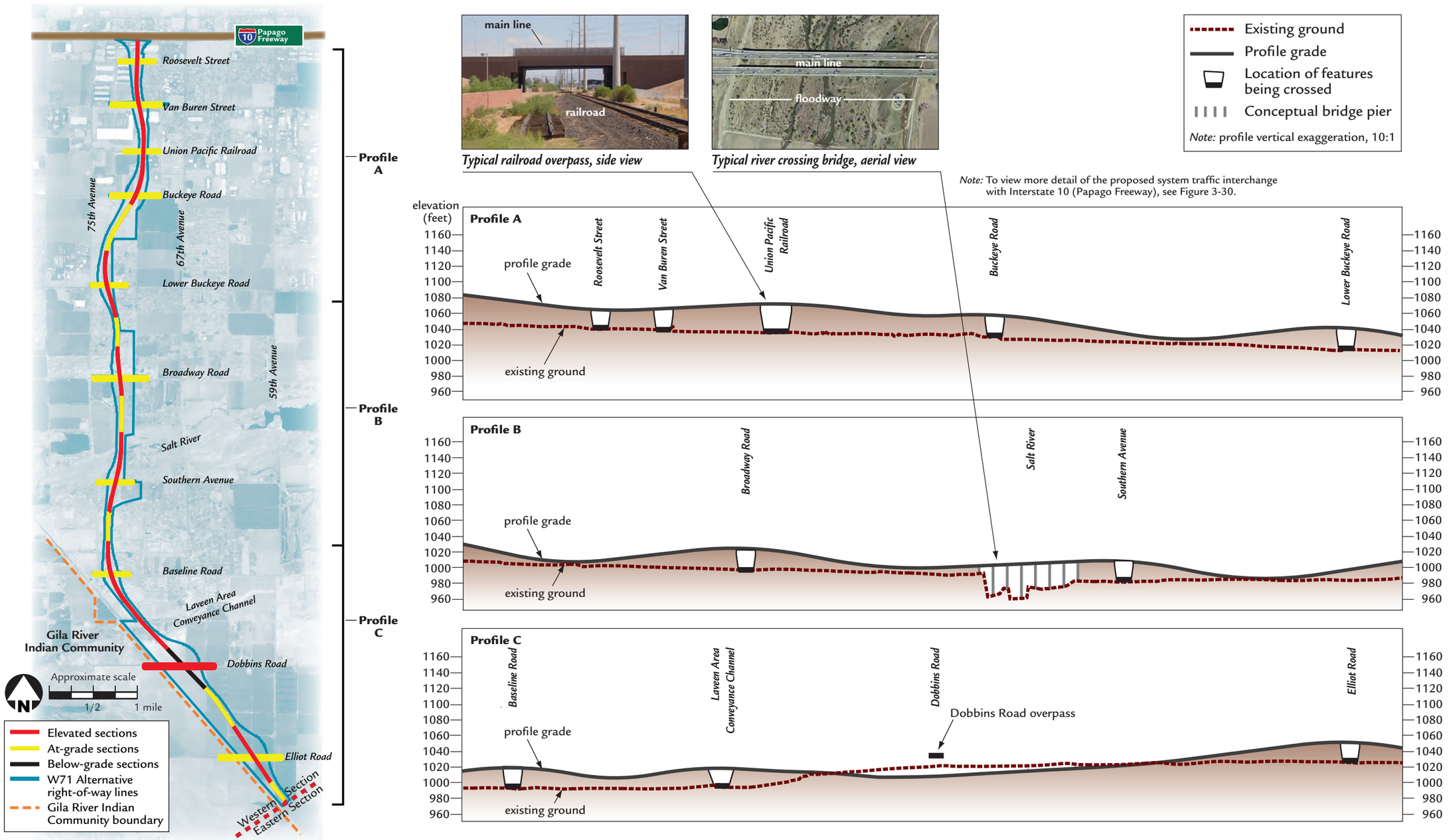
Rolling profiles are also beneficial in that they permit efficient drainage solutions and reduce the amount of land acquisition needed.

Figure 3-20 Horizontal and Vertical Alignments, W59 Alternative, Western Section



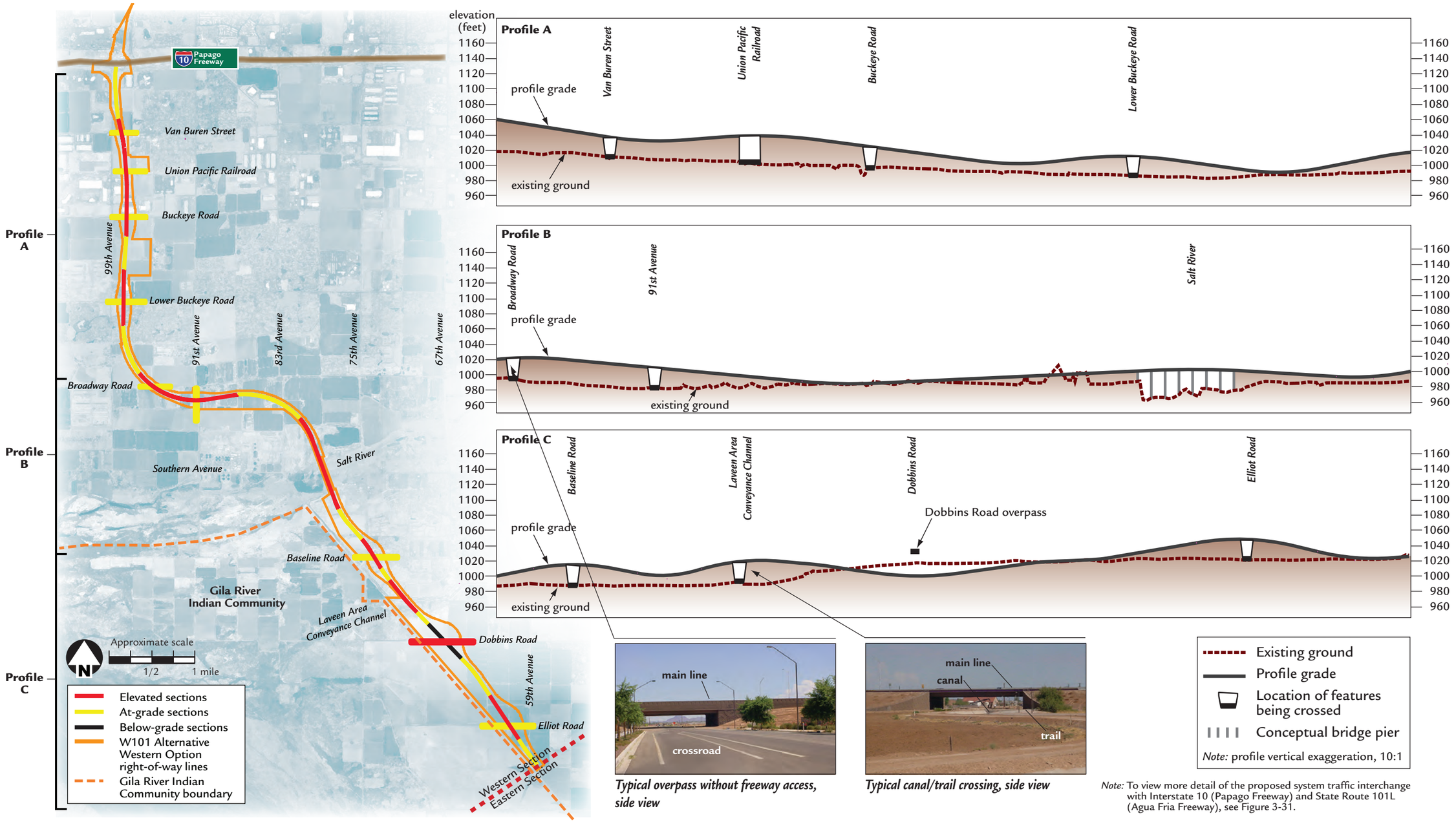
Physical features (e.g., railroads, canals, the Salt River, arterial streets, groundwater levels) and the desire to balance earthwork and limit impacts on existing streets resulted in a rolling profile for the W59 Alternative. (The bulges and other irregular shapes depicted for the alternative's otherwise-linear footprint reflect projected right-of-way needed for drainage basins and channels, etc.)

Figure 3-21 Horizontal and Vertical Alignments, W71 Alternative, Western Section



Like the W59 Alternative, physical features (e.g., railroads, canals, the Salt River, arterial streets, groundwater levels) and the desire to balance earthwork and limit impacts on existing streets resulted in a rolling profile for the W71 Alternative. At Dobbins Road, the profile would be "depressed" below existing ground; because of terrain slope, water—when on the freeway—would flow toward the Salt River without requiring a pump station. (The bulges and other irregular shapes depicted for the alternative's otherwise-linear footprint reflect projected right-of-way needed for drainage basins and channels, interchanges, etc.)

Figure 3-22 Horizontal and Vertical Alignments, W101 Alternative Western Option, Western Section



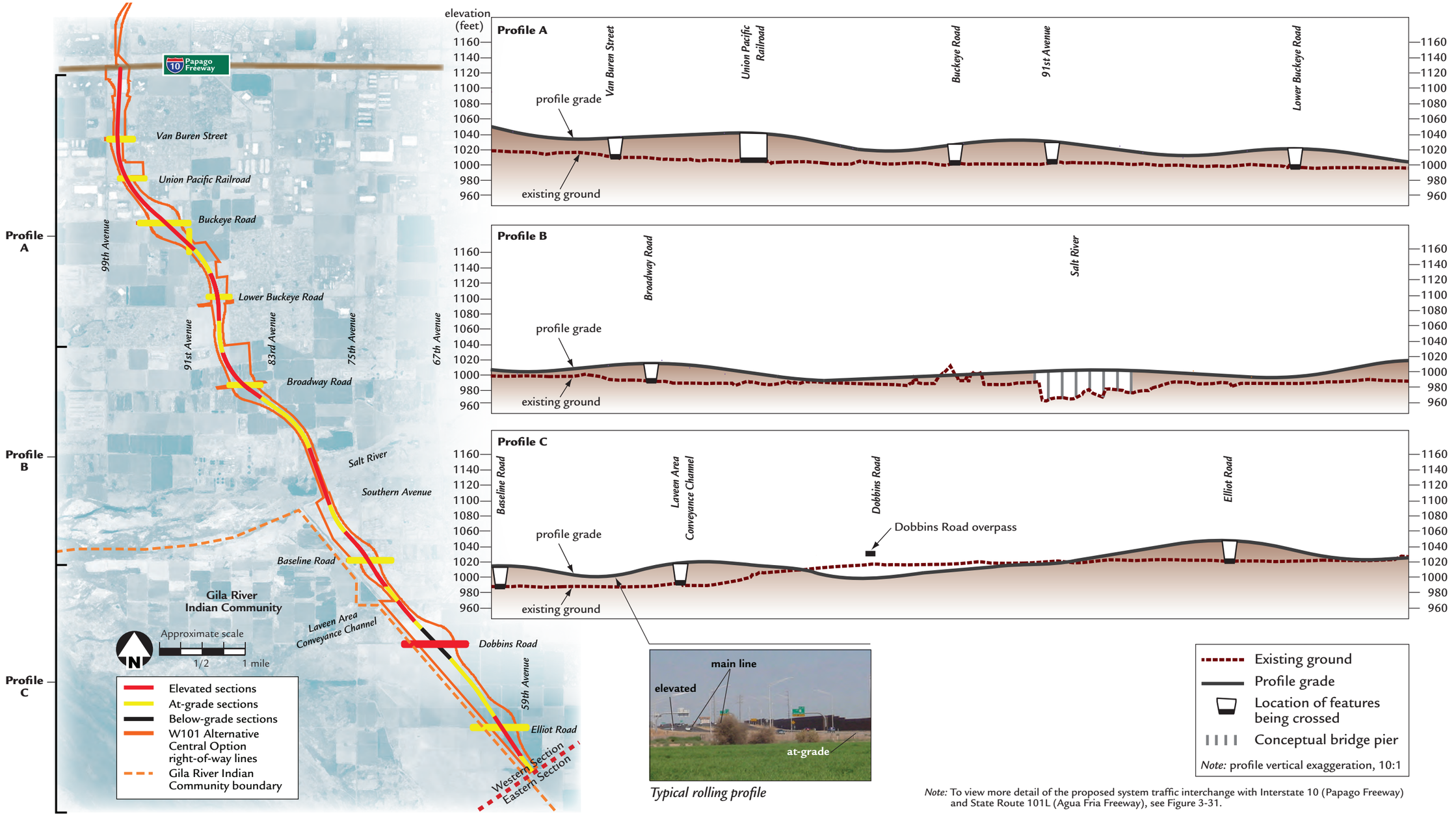
Typical overpass without freeway access, side view

Typical canal/trail crossing, side view

Note: To view more detail of the proposed system traffic interchange with Interstate 10 (Papago Freeway) and State Route 101L (Agua Fria Freeway), see Figure 3-31.

The same physical features associated with the W59 and W71 Alternatives (e.g., railroads, canals, the Salt River, arterial streets, groundwater levels) and the desire to balance earthwork and limit impacts on existing streets resulted in a rolling profile for the W101 Alternative Western Option. At Dobbins Road, the profile would be "depressed" below existing ground; because of terrain slope, water—when on the freeway—would flow toward the Salt River without requiring a pump station. (The bulges and other irregular shapes depicted for the alternative's otherwise-linear footprint reflect projected right-of-way needed for drainage basins and channels, interchanges, etc.)

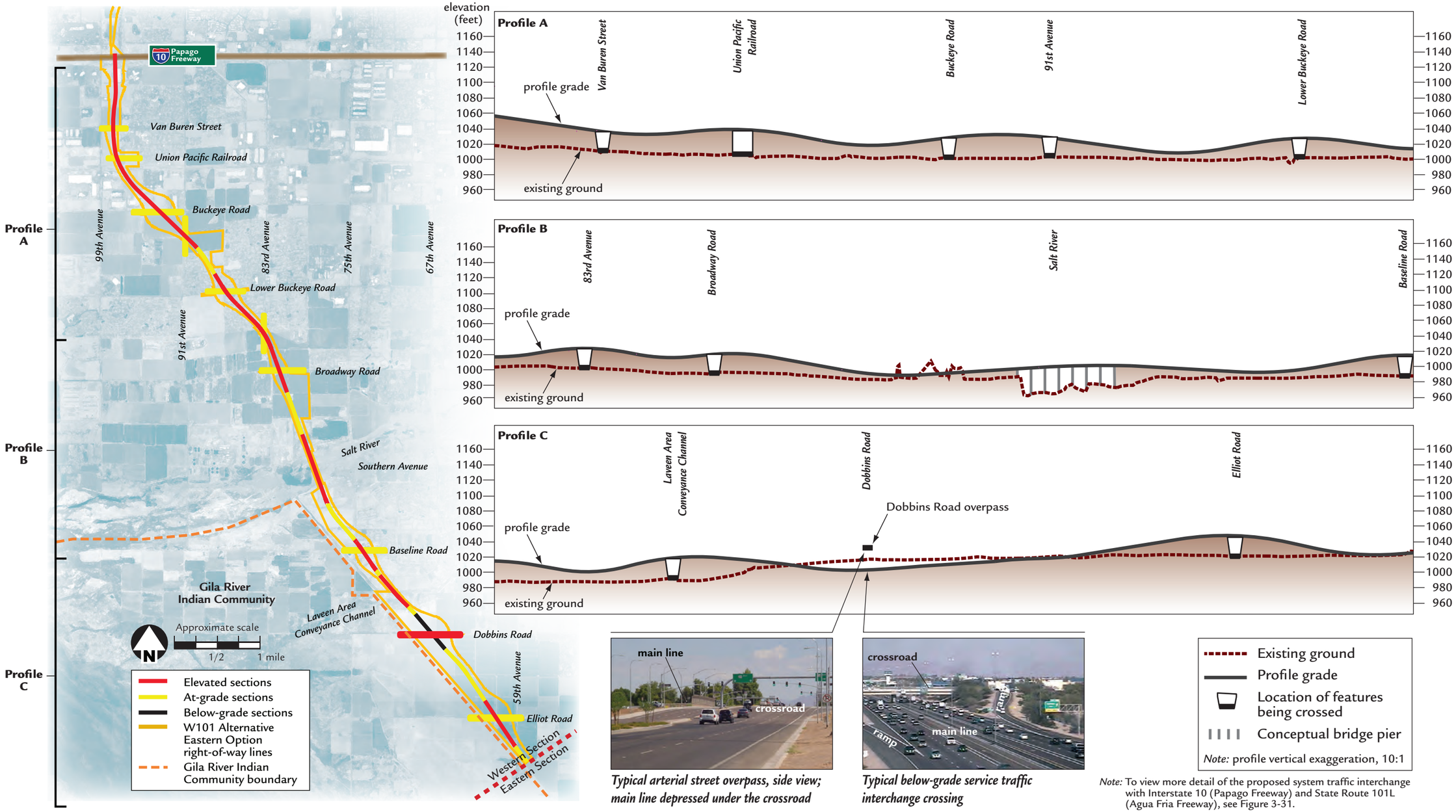
Figure 3-23 Horizontal and Vertical Alignments, W101 Alternative Central Option, Western Section



Note: To view more detail of the proposed system traffic interchange with Interstate 10 (Papago Freeway) and State Route 101L (Agua Fria Freeway), see Figure 3-31.

The same physical features associated with the W59 and W71 Alternatives (e.g., railroads, canals, the Salt River, arterial streets, groundwater levels) and the desire to balance earthwork and limit impacts on existing streets resulted in a rolling profile for the W101 Alternative Central Option. At Dobbins Road, the profile would be "depressed" below existing ground; because of terrain slope, water—when on the freeway—would flow toward the Salt River without requiring a pump station. (The bulges and other irregular shapes depicted for the alternative's otherwise-linear footprint reflect projected right-of-way needed for drainage basins and channels, interchanges, etc.)

Figure 3-24 Horizontal and Vertical Alignments, W101 Alternative Eastern Option, Western Section



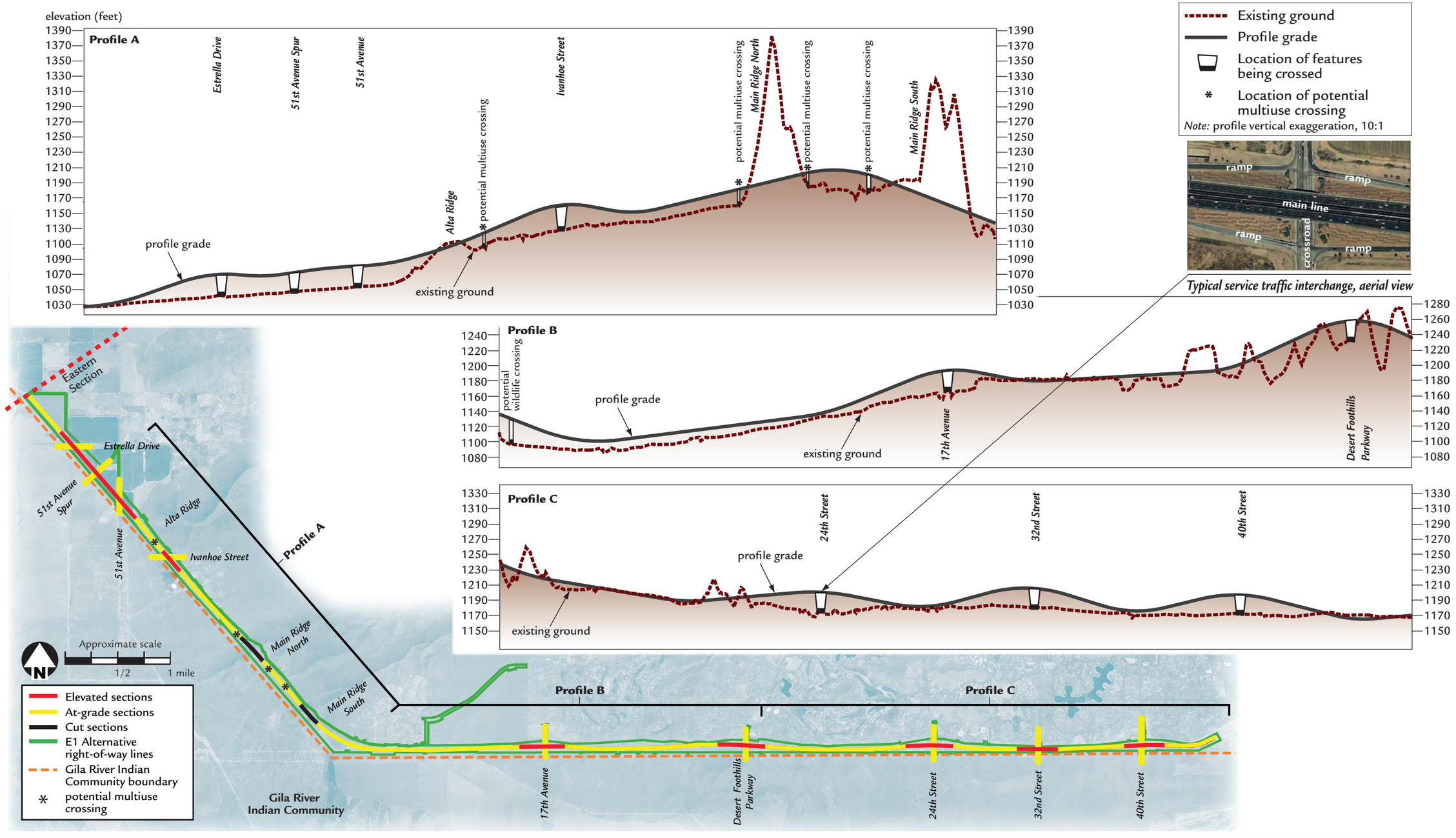
Typical arterial street overpass, side view; main line depressed under the crossroad

Typical below-grade service traffic interchange crossing

Note: To view more detail of the proposed system traffic interchange with Interstate 10 (Papago Freeway) and State Route 101L (Agua Fria Freeway), see Figure 3-31.

The same physical features associated with the W59 and W71 Alternatives (e.g., railroads, canals, the Salt River, arterial streets, groundwater levels) and the desire to balance earthwork and limit impacts on existing streets resulted in a rolling profile for the W101 Alternative Eastern Option. At Dobbins Road, the profile would be depressed below existing ground; because of terrain slope, water—when on the freeway—would flow toward the Salt River without requiring a pump station. (The bulges and other irregular shapes depicted for the alternative's otherwise-linear footprint reflect projected right-of-way needed for drainage basins and channels, interchanges, etc.)

Figure 3-25 Horizontal and Vertical Alignments, E1 Alternative, Eastern Section



The E1 Alternative would follow a rolling profile, similar to the Western Section action alternatives, for its entirety. Through the mountainous areas, the profile would be elevated to allow natural washes to flow under, for possible wildlife crossings and for access to the mountains. A "depressed" profile (below existing ground) when replacing Pecos Road would not be reasonable (see related text beginning on page 3-15). (The bulges and other irregular shapes depicted for the alternative's otherwise linear footprint reflect projected right-of-way needed for drainage basins and channels, etc.)

the freeway). The W101 Alternative would then rise above existing grade and pass over Elliot Road before connecting to the E1 Alternative. Table 3-11 presents additional data pertaining to the action alternatives in the Western Section.

Eastern Section

The alignment of the one action alternative in the Eastern Section is described below. Figure 3-25 is a graphic representation of its horizontal and vertical alignment.

Table 3-11 Alignment Features, Action Alternatives

Alignment Feature	Action Alternative					
	Western Section					Eastern Section
	W59	W71	W101 Options[a]			E1
			Western	Central	Eastern	
Length (miles)[b]	8.5	9.0	11.3	10.9	10.8	13.1
Crossings						
Arterial streets[c]	10	9	11	12	12	9
Railroads	All alternatives would cross UPRR[d] facilities.					Not applicable
Natural features	All would cross the Salt River.					Three mountain ridgelines
Canal/Drainages	All would cross Roosevelt Canal and Laveen Area Conveyance Channel.					Numerous natural washes
I-10[e] improvements[f]	From 43rd to 75th avenues	From 51st to 91st avenues	From 75th Avenue to Dysart Road			None required
SR 101L[g] (Agua Fria Freeway) improvements	None required		I-10 (Papago Freeway) to Bethany Home Road			Not applicable
Common connection	Western Section action alternatives would connect to the Eastern Section action alternative at a point common to all action alternatives on an alignment parallel and adjacent to the Gila River Indian Community boundary (see text box on page 3-8).					

[a] Each of the W101 Alternatives and Options includes proposals to either reconstruct the Interstate 10/State Route 101L system traffic interchange to connect the proposed action or to construct a new system traffic interchange approximately 700 feet to the west of the existing interchange (which, for this proposal, would include demolition of the existing interchange).
[b] When Western and Eastern Section action alternatives are combined, the entire length of the proposed action (Western and Eastern Sections) would be between 21.6 and 24.4 miles.
[c] Refer to Figures 3-20 to 3-25 for specific arterial street crossings.
[d] Union Pacific Railroad
[e] Interstate 10
[f] Most improvements to I-10 (Papago Freeway) in the Western Section would occur within its existing right-of-way (see Figures 3-29 through 3-31).
[g] State Route 101L (Loop 101)

E1 Alternative (Preferred Alternative)

Horizontal Alignment: At the point common among all action alternatives, the E1 Alternative would travel to the southeast parallel and adjacent to the Community boundary, crossing over Estrella Drive, 51st Avenue, and Ivanhoe Street. In this direction, the action alternative would pass through three ridges of the South Mountains (two of which are in SMPP) before turning to the east. Traveling to the east, the E1 Alternative would follow and replace the Pecos Road alignment north of and adjacent to the Community boundary, and would cross over 17th Avenue, Desert Foothills Parkway, 24th Street, 32nd Street, and 40th Street. The E1 Alternative would then connect to the existing I-10 (Maricopa Freeway)/SR 202L (Santan Freeway)/Pecos Road system traffic interchange. Table 3-11 presents additional data pertaining to the E1 Alternative.

Vertical Alignment: The E1 Alternative would have a rolling profile similar to those typical of the Western Section action alternatives and would pass over all arterial streets. Between arterial street overpasses, the E1 Alternative would descend toward the existing grade. In the mountainous region, the profile would remain adequately elevated to facilitate possible wildlife passage through proposed multiuse crossings (see the section, *Biological Resources*, beginning on page 4-115, for more details) and to avoid interrupting the natural drainage. All arterial streets would remain at their existing elevations, with minor variations. Three cut sections would be required where mountain ridges exist (one ridge is outside SMPP) (see the section, *Topography, Geology, and Soils*, beginning on page 4-111, and the section, *Measures to Minimize Harm*, beginning on page 5-23). Between 17th Avenue and 24th Street near Ahwatukee Foothills Village, other cut sections would also be required. The E1 Alternative would end near 46th Street. Multiuse crossings would allow pedestrians, equestrians, off-road vehicles, and wildlife to pass beneath the proposed freeway.

The E1 Alternative would have no depressed sections, except through the cut sections mentioned above (see section, *E1 Alternative – Pecos Road Variations*, beginning on page 3-15, regarding Pecos Road profile options).

Other Alignment Features

Table 3-11 provides a comparison of alignment features of the action alternatives. For action alternatives in the Western Section, primary differences focus on the connections to I-10 (Papago Freeway) and related improvements that would be required on I-10 (operational differences are presented later in this chapter). The same design concepts and principles were applied to all action alternatives. Options to change the profile of the E1 Alternative along Pecos Road (e.g., to depress the portion of freeway below the existing grade) were examined. The profile depicted was found to represent the best balance between cost and impact on the surrounding environment.

Traffic Interchange Configurations

Two types of traffic interchanges (see sidebar on page 3-14) are included as part of the action alternatives:

- System traffic interchanges are interchanges connecting a freeway with another freeway, such as the I-10/I-17 system traffic interchange in downtown Phoenix.
- Service traffic interchanges are interchanges providing freeway access to and from the local arterial street network, such as I-10 at 7th Avenue in downtown Phoenix.

The footprint of a system traffic interchange is typically much larger than that of a service traffic interchange.

System Traffic Interchanges

Two connections to existing freeways would occur, one at each end of the proposed action and representing the logical termini.

System Traffic Interchange at the Western Terminus

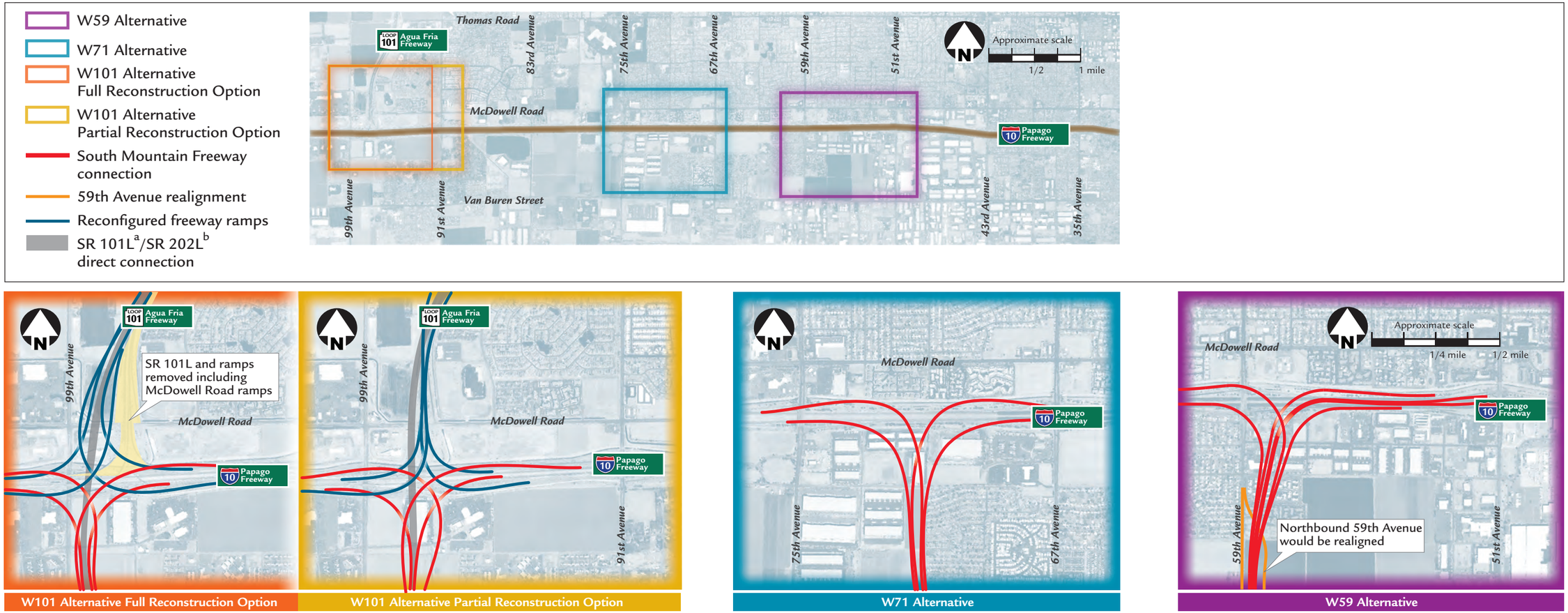
The proposed action (using the W59, W71, or W101 Alternative) would connect to I-10 (Papago Freeway) at one of three locations and would represent the proposed action's western terminus. Proposed configuration concepts for each connection to I-10 (Papago Freeway) follow.

W59 Alternative (Preferred Alternative) and W71 Alternative – System Traffic Interchange

The W59 and W71 Alternatives would each tie into I-10 (Papago Freeway) using a similarly configured system traffic interchange and are, therefore, described together. Figure 3-26 illustrates the system traffic interchange concept for the W59 and W71 Alternatives. Additional information in support of Figure 3-26 includes:

- For either alternative, the interchange would include four freeway-to-freeway ramps connecting the proposed action to I-10.
- For northbound traffic on the proposed action, four lanes would be provided approaching the system traffic interchange. The lanes would diverge, with two lanes forming the northbound-to-eastbound interchange ramp and two lanes forming the northbound-to-westbound interchange ramp.
- For traffic heading south on the proposed action from I-10, an eastbound-to-southbound ramp and a westbound-to-southbound ramp would be provided. For eastbound-to-southbound traffic, two I-10 eastbound lanes would diverge, forming a ramp, and for westbound-to-southbound traffic, two I-10 westbound lanes would diverge to form another ramp. Similarly, the southbound movement of the proposed action would be four lanes wide.
- All freeway-to-freeway ramps would have two lanes with left and right shoulders.
- Access to and from existing service traffic interchanges on I-10 east and west of the system traffic interchange location would be altered by either action alternative (additional information regarding how local access on I-10 would be altered is provided in the section, *Alteration of Existing Service Traffic Interchanges*, on page 3-52).

Figure 3-26 System Traffic Interchange Configurations, Action Alternatives, Western Section



[a] State Route 101L (Loop 101) [b] State Route 202L (Loop 202) (proposed action)

Under any of the system traffic interchange connections between the proposed action and Interstate 10 (Papago Freeway), ramp configurations would be designed to ensure acceptable traffic operational characteristics on the freeways in the vicinity of the interchange.

3

W101 Alternative and its Options – System Traffic Interchange

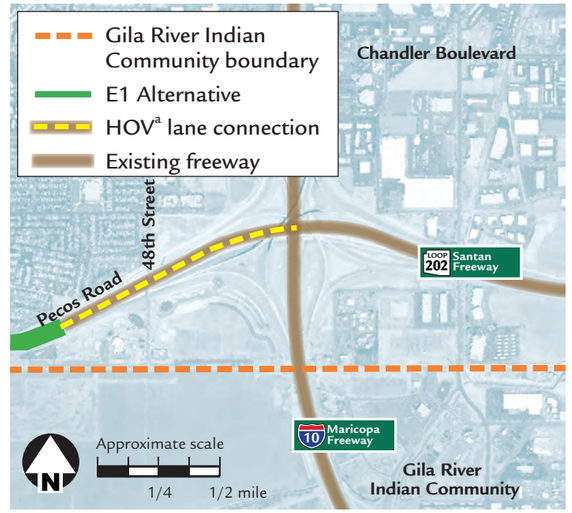
The W101 Alternative would tie into I-10 (Papago Freeway) and SR 101L (Agua Fria Freeway) using a system traffic interchange. Under the options being considered, the existing I-10/SR 101L (Agua Fria Freeway) system traffic interchange would be either partially reconstructed or fully reconstructed. Although the impacts and issues are different for each type of TI, they each have pros and cons. There were not significant enough differences related to traffic operations, costs, impacts, etc., to eliminate one or the other. Leading into the 2006 decision on the preliminary preferred alternative in the Western Section, ADOT preferred the partial reconstruction because it would keep most of the existing interchange in place. Figure 3-26 depicts schematics of the system traffic interchange concepts for the W101 Alternative and its Options. The main advantage of the connection to I-10 at the existing system traffic interchange is its ability to convey north–south traffic directly onto SR 101L (Agua Fria Freeway) without having it merge onto and then off of I-10 (Papago Freeway). Additional information in support of the concepts shown in Figure 3-26 includes:

- The configurations would include eight freeway-to-freeway ramps, four connecting the existing SR 101L (Agua Fria Freeway) to I-10 (Papago Freeway) and four connecting the proposed action to I-10.
- Northbound traffic on the proposed action would travel on seven lanes approaching the system traffic interchange. Four lanes would diverge from the main line: two lanes to form the northbound-to-eastbound ramp and two lanes to form the northbound-to-westbound ramp. The remaining three lanes would continue through the system traffic interchange to connect with SR 101L (Agua Fria Freeway).
- Southbound traffic approaching the proposed action on SR 101L (Agua Fria Freeway) would travel on seven lanes approaching the system traffic interchange. A portion of SR 101L (Agua Fria Freeway) would be reconstructed to accommodate the connection to SR 202L (proposed action). Four lanes would diverge from the main line: two lanes to form the southbound-to-eastbound ramp and two lanes to form the southbound-to-westbound ramp. The remaining three lanes would continue through the system traffic interchange to connect with the main line of the proposed action.
- As with the W59 and W71 Alternatives, each freeway-to-freeway ramp to and from the proposed action would have two lanes with left and right shoulders.
- Two concepts relative to constructing the system traffic interchange are being considered:
  - One concept would modify the existing I-10/SR 101L system traffic interchange (a partial reconstruction).
  - The other concept would construct a new system traffic interchange to the west of the existing system interchange and would remove the existing system traffic interchange (a full reconstruction).
- Access to and from existing service traffic interchanges on I-10 (Papago Freeway) east and west of the system traffic interchange location and on SR 101L (Agua Fria Freeway) north of I-10 to the SR 101L/Thomas Road service traffic interchange would be altered (additional information regarding how local access on I-10 would be altered is provided in the section, *Alteration of Existing Service Traffic Interchanges*).

System Traffic Interchange at the Eastern Terminus

The proposed action (under the E1 Alternative) would connect to the existing I-10 (Maricopa Freeway)/SR 202L (Santan Freeway)/Pecos Road system traffic interchange (the E1 Alternative would replace the Pecos Road connection). The system traffic interchange was constructed in 2000–2002 to accommodate the western leg of SR 202L—the proposed action—as depicted in Figure 3-27. Construction of a new direct HOV connection between I-10 (to and from the north) and SR 202L (Santan Freeway) (to and from the east) began in 2010 along with construction of HOV lanes along the SR 202L (Santan Freeway) corridor. The HOV lanes for the proposed action would be extended to connect to the new HOV lanes along SR 202L (Santan Freeway).

Figure 3-27 System Traffic Interchange Configuration, Action Alternative, Eastern Section



[a] high-occupancy vehicle

As was planned when the system traffic interchange was designed, the E1 Alternative would replace the Pecos Road connection to Interstate 10. The general purpose lanes would connect to the existing lanes approximately ¼ mile west of 48th Street, while the HOV lanes would be extended to connect to the existing HOV lanes at the center of the system traffic interchange.

As a result of traffic analyses coordinated among the RTP-planned projects associated with the system traffic interchange, the northbound-to-westbound and eastbound-to-southbound ramps would be widened from one to two lanes in each direction to accommodate projected 2035 traffic. The E1 Alternative includes provisions for the proposed ramp widening, which would be constructed as a part of a future project.

System Traffic Interchange at SR 30

The proposed action would be designed to accommodate a future system traffic interchange to be located in the Western Section near Broadway Road. The interchange would connect SR 30 and ARS to the proposed action. The specific location of the interchange would be determined based on the action alternative identified

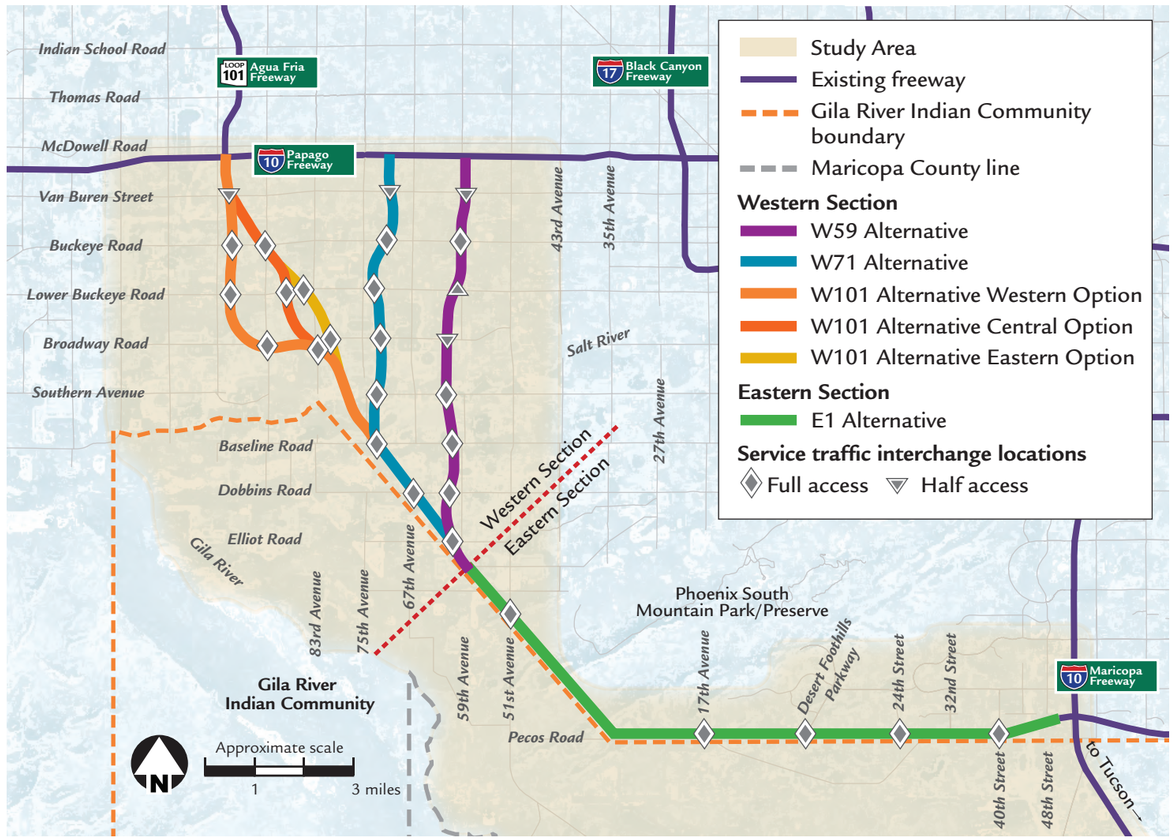
in the Western Section for the proposed action and on final determinations made for the design and location of SR 30, which is under study. The design and operational characteristics of the system traffic interchange and the potential benefits and adverse impacts of the interchange will be reported in the project studies when made available to the public.

Service Traffic Interchanges – Proposed Action Main Line

The action alternatives would include the construction and operation of service traffic interchanges to provide access between the arterial streets and the proposed freeway. Figure 3-28 illustrates the locations and access proposed for the service traffic interchanges. Additional information in support of the concepts shown in Figure 3-28 includes:

- Service traffic interchanges were generally spaced at 1-mile intervals along the arterial street grid. The spacing is consistent with other freeway facilities in the MAG region. Some locations were not conducive to the 1-mile spacing because of geographic features, operational characteristics, or design limitations (e.g., the arterial street crossing location did not conform to the 1-mile grid).
- Members of the public and local jurisdictions influenced the locations, configuration concepts, and access of some of the service traffic interchanges (see Figures 3-7 and 3-8).
- Environmental, operational, and/or design considerations would determine the level of access to be provided at each service traffic interchange. Most service traffic interchanges would provide full access (ramps in all four directions). Half-diamond (half-access) interchanges would be used near system traffic interchanges to avoid undesirable operational conflicts.
- The diamond interchange configuration (see sidebar on page 3-14) was used to evaluate service traffic interchange needs. The configuration has been commonly used for other freeway facilities in the MAG region. The actual configuration(s) of the service traffic interchanges would be determined during the design phase of the Selected Alternative, if an action alternative were to be identified. Designers would assess whether other configurations (e.g., the single-point urban interchange, collapsed diamond interchange, or split diamond interchange) would be more cost-effective, have smaller R/W needs, and/or have less impact while providing adequate or better operational benefits than the diamond configuration. R/W needs for the proposed action, as calculated in the DEIS and as presented in the section, *Right-of-way Needed for Action Alternatives*, beginning on page 3-52, would consider sufficient area to accommodate other service traffic interchange types, should public benefit be derived from changing the configurations during the design phase.
- On- and off-ramps at the service traffic interchanges would include one lane with left and right shoulders. Additional lanes as warranted by traffic projections would be provided to accommodate turning movements at the crossroad.
- Access control would be maintained along the arterial street to ensure desirable traffic performance.

Figure 3-28 Proposed Service Traffic Interchanges, Action Alternatives, Western and Eastern Sections



Spacing and design of service traffic interchanges on the proposed freeway would follow patterns similar to those used throughout the region's freeway system. Connection to the service traffic interchanges bordered by Gila River Indian Community (Community) land from the Community would be the responsibility of the Community, in coordination with appropriate jurisdictions.

- To avoid traffic operational problems, two-lane on- and off-ramps would not be used at closely spaced service traffic interchanges.

Alteration of Existing Service Traffic Interchanges

Each action alternative in the Western Section would introduce a large system traffic interchange to a segment of I-10 (Papago Freeway) that now has a series of service traffic interchanges at 1-mile intervals. The size of the system traffic interchange would affect access to and from I-10 from neighboring service traffic interchanges. As a result, modifications to local access would adversely affect nearby businesses, emergency response times, bus routes, arterial street operational characteristics, and freeway conditions. Conversely, local access by way of service traffic interchanges located too close to a system traffic interchange would adversely affect the operational and safety characteristics of the freeway main lines. Because of these potential impacts, various concepts using half-diamond interchanges connected to adjacent half- or full-diamond interchanges with access roads were developed to examine the balance between local access and main line operation.

Figures 3-29 and 3-30 illustrate the local access concepts determined for the W59 and W71 Alternatives, respectively. Figure 3-31 depicts the concepts applied to the Partial and Full Reconstruction Options for the W101 Alternative and its Options. Effects of the local access concept for each action alternative on local businesses are presented in the section, *Economic Impacts*, beginning on page 4-46. In summary, for each concept, the effects of different combinations of ramp configurations (e.g., braided ramps), ramp lengths, access roads (parallel to I-10), and modifications to the service traffic interchange ramps were examined.

Alteration of Existing Local Street Network

Each action alternative would affect several segments of the existing local street network (accounted for in the R/W presented in Figures 3-20 to 3-25). Alteration of the local street network (principally immediately adjacent to the action alternatives) would be subject to modification during design refinement in future project development phases. An example of how the local street network could be reconfigured using the W59 and E1 Alternatives (Preferred Alternative) is shown in Figures 3-32 and 3-33, respectively. A similar approach was used in determining the needed R/W for the W71 Alternative and the W101 Alternative and its Options.

Various approaches could be used in the reconfiguration of the local street network. Examples of these approaches are:

- **Removed street** – As shown in Detail A of Figure 3-32, Latham Street would be removed. No additional reconfiguration would be needed.
- **Newly constructed street** – As shown in Detail B of Figure 3-32, 62nd Avenue would be removed from its existing location and reconstructed farther west. 62nd Avenue would continue to connect Encinas Lane, Wood Street, and Pueblo Avenue.
- **Existing street remaining below freeway** – As shown in Detail A of Figure 3-32, Roosevelt Street would remain in its existing location and bridges would be constructed over it.
- **Newly constructed street** – As shown in Detail C of Figure 3-33, construction of Chandler Boulevard between approximately 27th and 19th avenues would be completed as a part of this project.

Right-of-way Needed for Action Alternatives

Table 3-12 presents the R/W needed for the action alternatives. Information to support the Table 3-12 presentation includes:

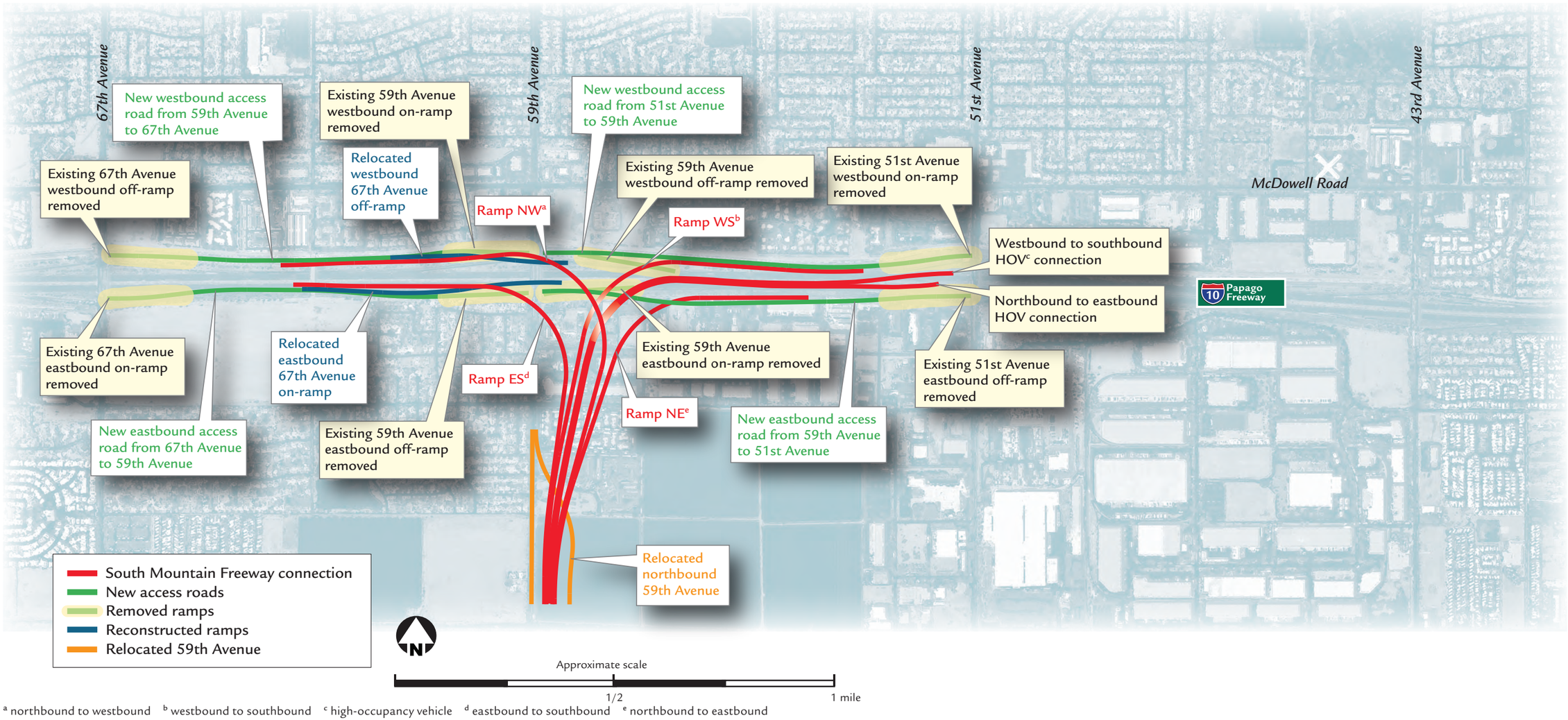
- The typical R/W width would vary throughout the project area, but would normally be less than 500 feet wide, except at interchange locations (see the section, *Typical Freeway Sections*, beginning on page 3-58).
- Where service traffic interchanges would be constructed, additional R/W would be provided for the interchange ramps. Based on the angle at which the proposed action would cross the arterial street, additional R/W width for service traffic interchange ramps and lanes would vary between approximately 850 and 2,200 feet.
- R/W and access control would be needed along arterial streets when additional lanes were needed at the service traffic interchanges (the additional R/W needs on the arterial streets have been accounted for in the impact analyses presented in Chapter 4, *Affected Environment, Environmental Consequences, and Mitigation*).
- R/W would also be needed for the system traffic interchange connecting the proposed action to I-10 (Papago Freeway) in the Western Section.
- Between 1,818 and 2,203 acres would be converted from existing land uses to a transportation use to construct the proposed action, depending on which action alternative were to be identified, if any. Total R/W requirements would be subject to modification during the concept-level design phase.
- The conversion by land use type to a transportation use (the proposed action) for each action alternative

Table 3-12 Acreage Needed, Action Alternatives, Western and Eastern Sections

Location	Action Alternative					
	Western Section					Eastern Section
	W59	W71	W101[a]			E1
			Western	Central	Eastern	
I-10[b] (Papago Freeway) to Buckeye Road	184[c]	155[c]	249[c]	280[c]	278[c]	Does not apply
Buckeye Road to Southern Avenue	332	352	465	411	428	
Southern Avenue to common point[d]	419	554	597	598	598	
Common point to 17th Avenue	Does not apply					503[c]
17th Avenue to I-10 (Maricopa Freeway)						380
Total	935	1,061	1,311	1,289	1,304	883

[a] Acreage is needed for the Partial Reconstruction Option, which would use 5 more acres than the Full Reconstruction Option because of additional right-of-way (R/W) along State Route 101L.
[b] Interstate 10
[c] Calculations to determine total acreage for R/W acquisition were taken from concept-level plans (see sidebar regarding the level of design for the proposed action on page 3-40). Total R/W requirements would be subject to modification during the final design phase.
[d] See text box, *Creation of Western and Eastern Sections for the DEIS*, on page 3-8.

Figure 3-29 Local Access Modifications, Service Traffic Interchanges, W59 Alternative, Western Section



[a] northbound to westbound [b] westbound to southbound [c] high-occupancy vehicle [d] eastbound to southbound [e] northbound to eastbound

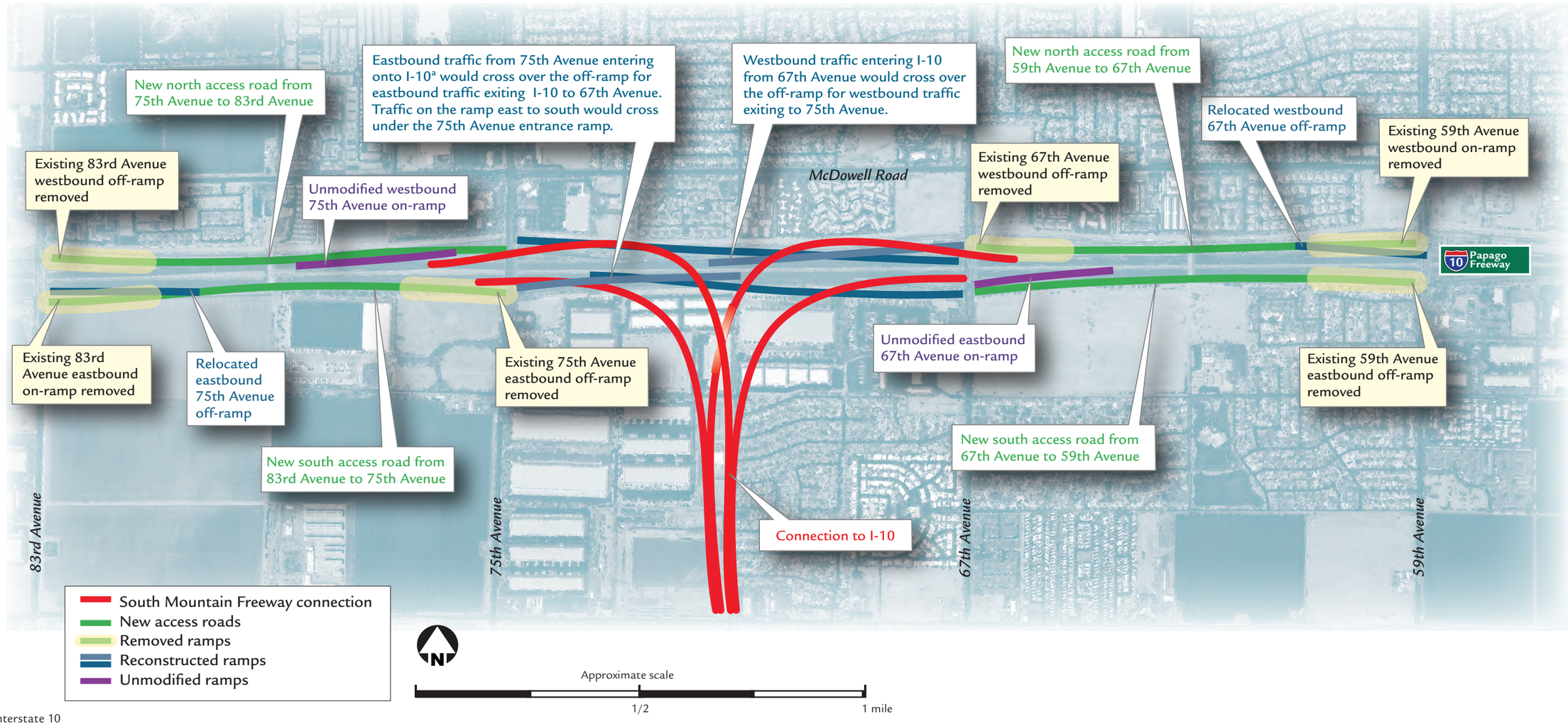
Signs would be installed to provide motorists with information regarding how to gain access to local arterial streets from Interstate 10 (Papago Freeway) resulting from modifications caused by the W59 Alternative system traffic interchange.

is presented in the section, *Land Use*, beginning on page 4-3.

➤ The acreage of new R/W needed for the action alternatives is typical for a project of this magnitude; R/W needed for the 17-mile portion of SR 202L (Red Mountain Freeway) from SR 87 (Beeline Highway) to US 60 (Superstition Freeway) was approximately 1,200 acres.

ADOT began acquiring land for the original alignment R/W in 1988. Between 1988 and 2001, ADOT acquired approximately 293 acres. Most of this land (258 acres) is located in the Eastern Section along Pecos Road. In 2006, ADOT began protective and hardship land acquisition in the alignment R/W footprint for the W59 and E1 Alternatives. Between 2006 and April 2011, ADOT purchased 317 acres (294 in the Western Section and 23 in the Eastern Section).

Figure 3-30 Local Access Modifications, Service Traffic Interchanges, W71 Alternative, Western Section



[a] Interstate 10

As with the W59 Alternative (see Figure 3-29), signs would be installed to provide motorists with information regarding how to gain access to local arterial streets from Interstate 10 (Papago Freeway) resulting from modifications caused by the W71 Alternative system traffic interchange.

Other Major Design Features Common to Action Alternatives

Design Criteria

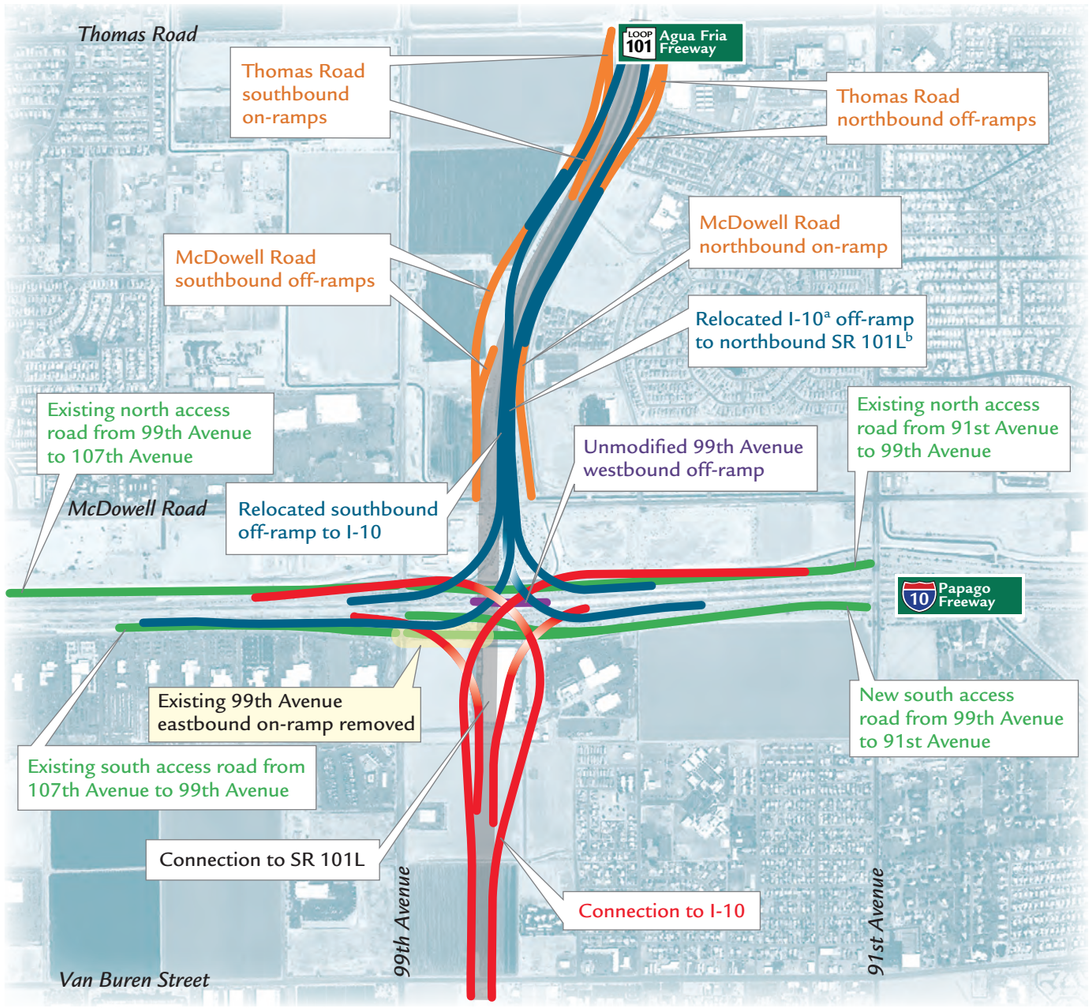
The design criteria used to develop the action alternatives meet standards and guidelines in use by ADOT, FHWA, and AASHTO as set forth in:

- *Roadway Design Guidelines* (ADOT 2007a)
- *Interim Auxiliary Lane Design Guidelines* (ADOT 1996)
- *A Policy on Geometric Design of Highways and Streets* (AASHTO 2004)
- *Roadside Design Guide* (AASHTO 2006)

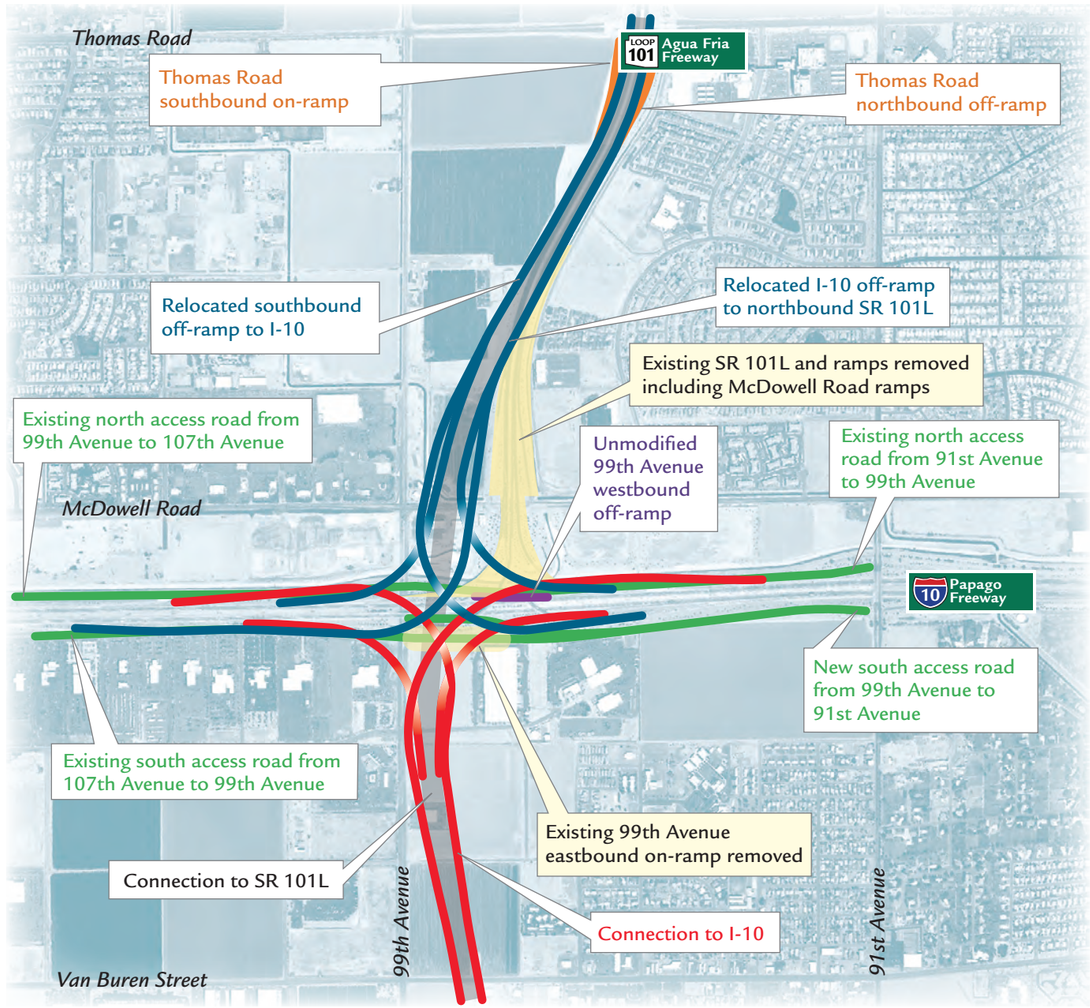
Deviation from design standards would not be expected for any of the action alternatives.

The proposed action would be readily accessible to and usable by individuals with disabilities and would comply with the applicable provisions set forth in the Americans with Disabilities Act. For example, the reconstruction and construction of new curb ramps and sidewalks at proposed service traffic interchanges would satisfy the relevant requirements.

Figure 3-31 Local Access Modifications, W101 Alternative, Service Traffic Interchanges, Partial and Full Reconstruction Options, Western Section



Partial Reconstruction Option



Full Reconstruction Option

South Mountain Freeway connection
Access roads
Removed ramps
Reconstructed ramps
Reconstructed service ramps
Unmodified ramps
SR 101L/SR 202L[c] connector
N
Approximate scale
1/4 1/2 mile

[a] Interstate 10 [b] State Route 101L (Loop 101) [c] State Route 202L (Loop 202)

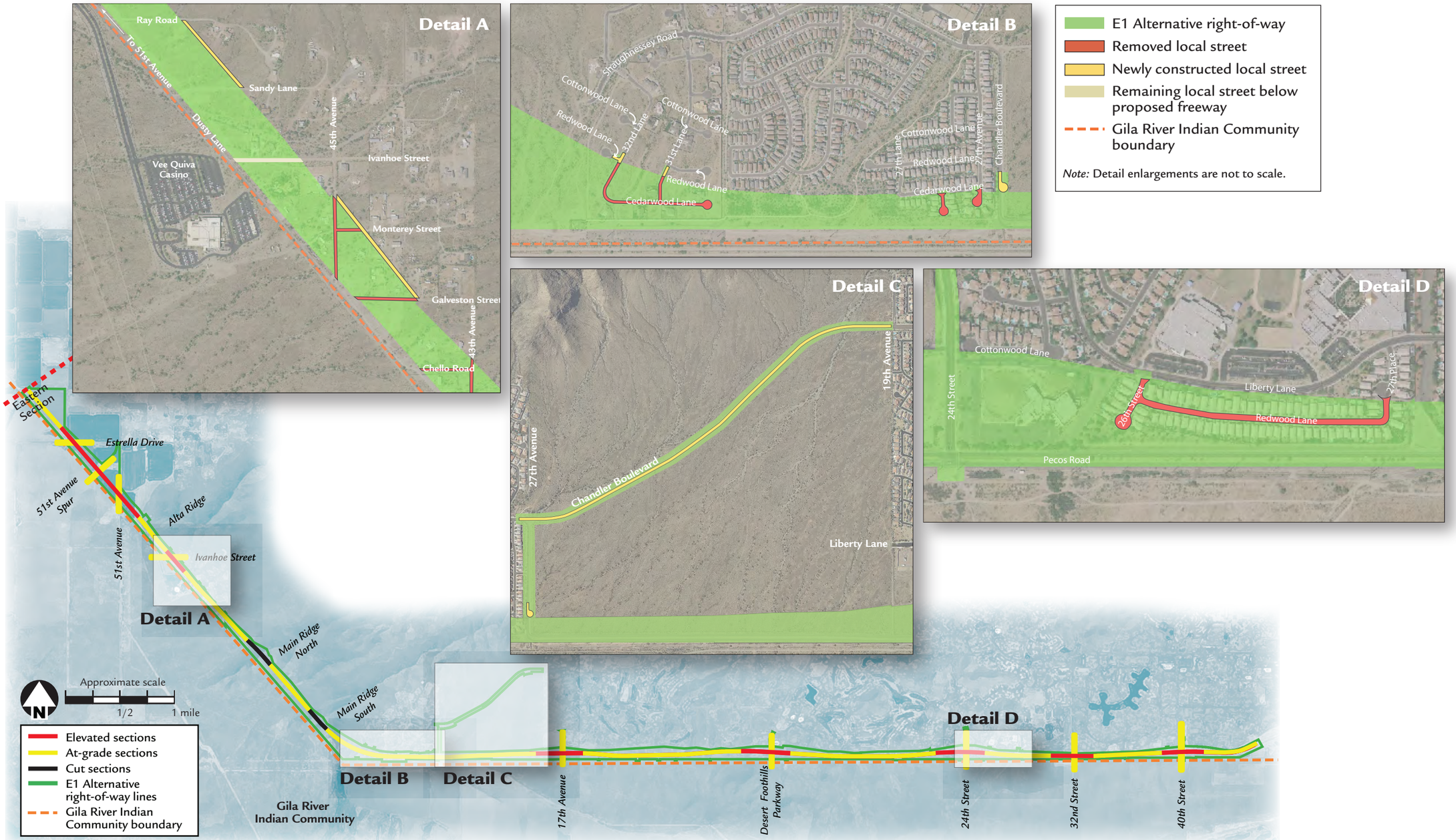
The Partial Reconstruction Option would keep intact much of the existing connection between Interstate 10 (Papago Freeway) and State Route 101L (Agua Fria Freeway) and the existing local access to McDowell Road and Thomas Road. The Full Reconstruction Option would replace the existing connection and remove the local access that exists now at McDowell Road. Either option (Partial or Full Reconstruction) would look and operate similarly to other major interchanges in the region such as the Interstate 17/State Route 101L (Pima Freeway) interchange.

3

Figure 3-32 Local Street Realignments, W59 Alternative (Preferred Alternative), Western Section

The W59 Alternative would affect the existing local street network. Approaches for reconfiguring the local street network include removing streets, constructing new streets, constructing the proposed freeway over existing streets, or dead-ending existing streets. Final design of local streets would be coordinated with emergency service providers, local jurisdictions, and other appropriate agencies and would continue through final design stages.

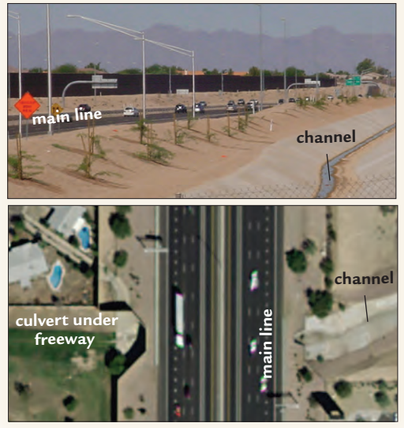
Figure 3-33 Local Street Realignments, E1 Alternative (Preferred Alternative), Eastern Section



The E1 Alternative would affect the existing local street network. Approaches for reconfiguring the local street network include removing streets, constructing new streets, constructing the proposed freeway over existing streets, or dead-ending existing streets. Final design of local streets would be coordinated with emergency service providers, local jurisdictions, and other appropriate agencies and would continue through final design stages.

What types of drainage features are included in the R/W?

The drainage features typical of all the action alternatives and typical of freeways in the region include culverts under the freeway, parallel channels, and basins as represented in the photos below.



Typical Freeway Sections

Figure 3-34 depicts typical freeway sections for all action alternatives. The freeway main line would have three 12-foot-wide general purpose lanes and one HOV lane in each direction, separated by a median barrier with left shoulders adjacent.

Auxiliary Lanes

An auxiliary lane is a lane located to the outside of freeway through-lanes (see sidebar on the next page). Located between successive on- and off-ramps associated with service traffic interchanges, auxiliary lanes are used by vehicles entering and exiting the freeway main line. Common to Regional Freeway and Highway System segments, auxiliary lanes reduce the degree of conflict between traffic merging onto and exiting a freeway and minimize disruption to on- and off-ramps. By reducing conflict, auxiliary lanes typically improve overall traffic performance. Auxiliary lanes would be 12 feet wide and maintain a 12-foot-wide right shoulder, similar to the freeway main line. Auxiliary lanes would be used where warranted in accordance with ADOT's *Interim Auxiliary Lane Design Guidelines* (1996). Impacts associated with auxiliary lanes are accounted for in the analysis.

TSM/TDM Strategies

Applicable elements of TSM and TDM would be incorporated into the design and operation of any action alternative. Table 3-2, on page 3-5, describes such elements.

Traffic Control Devices and Illumination

Signs, lighting, traffic signals, and pavement marking would be designed to meet current guidelines and standards referenced under the section, *Design Criteria*, as well as in the *Manual on Uniform Traffic Control Devices for Streets and Highways* (FHWA 2009a). Any freeway lighting installed would be designed to reduce illumination spillover onto sensitive light receptors (typically residential areas). Lighting needs would also include underdeck lighting on bridges where appropriate. The use of municipal or ADOT standard traffic control devices and illumination at arterial streets would be determined during the design phase.

Earthwork

To construct the proposed action, material would either need to be removed (cut) from the existing grade or added (fill) to the existing grade to accommodate the vertical alignments of the action alternatives. During design, efforts would be made to optimize the freeway profile to minimize the potential deficit (borrow). Earthwork quantities for each action alternative are presented in Figure 3-35. The sidebar on page 3-41 pertaining to rolling profile provides additional information regarding this topic.

Drainage

Drainage structures would be designed to meet standards and guidelines in use by ADOT, FHWA, and the Flood Control District of Maricopa County (FCDMC) as set forth in:

- *Roadway Design Guidelines* (ADOT 2007a)
- *Standard Specifications for Road and Bridge Construction* (ADOT 2008)
- *Drainage Design Manual for Maricopa County, Arizona: Hydrology* (FCDMC 2009)
- *Drainage Design Manual for Maricopa County, Arizona: Hydraulics* (FCDMC 2003)
- municipal standards as appropriate

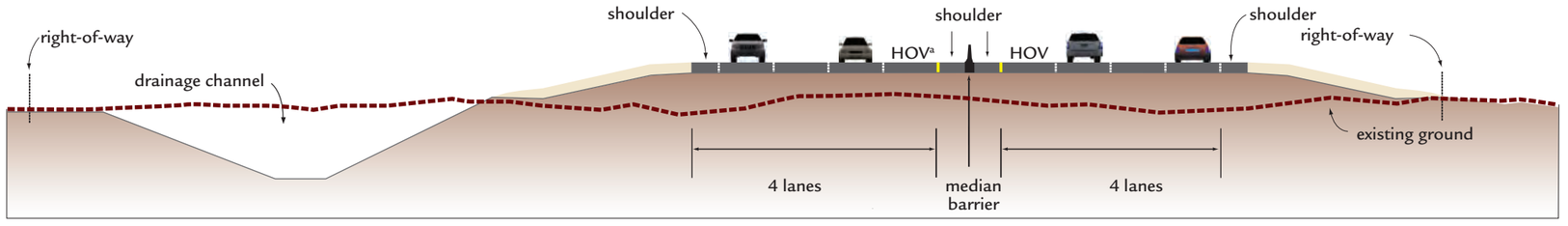
Coordination between ADOT and such agencies as applicable—including the City of Phoenix, FCDMC, the Bureau of Reclamation (Reclamation), the Bureau of Land Management (BLM), the Natural Resources Conservation Service (NRCS), the Community, and local irrigation districts—regarding drainage canal crossings within the Study Area would continue during the design phase and construction. Arterial cross streets would be designed according to the standards of the relevant jurisdictions, in coordination with their staff, during the design phase.

Where appropriate, the defined R/W includes a drainage channel (see Figure 3-34 and the sidebar on this page) and drainage basins. Final configuration of drainage features would be determined during the design phase. The size and location of drainage facilities could change based on additional design efforts, adjacent development plans, and changes in rainfall or drainage patterns.

Pavement Treatment

According to ADOT policy, new freeways constructed in the MAG region will be overlaid with rubberized asphalt. See the section, *Noise*, beginning on page 4-80, for more information regarding the use of rubberized asphalt.

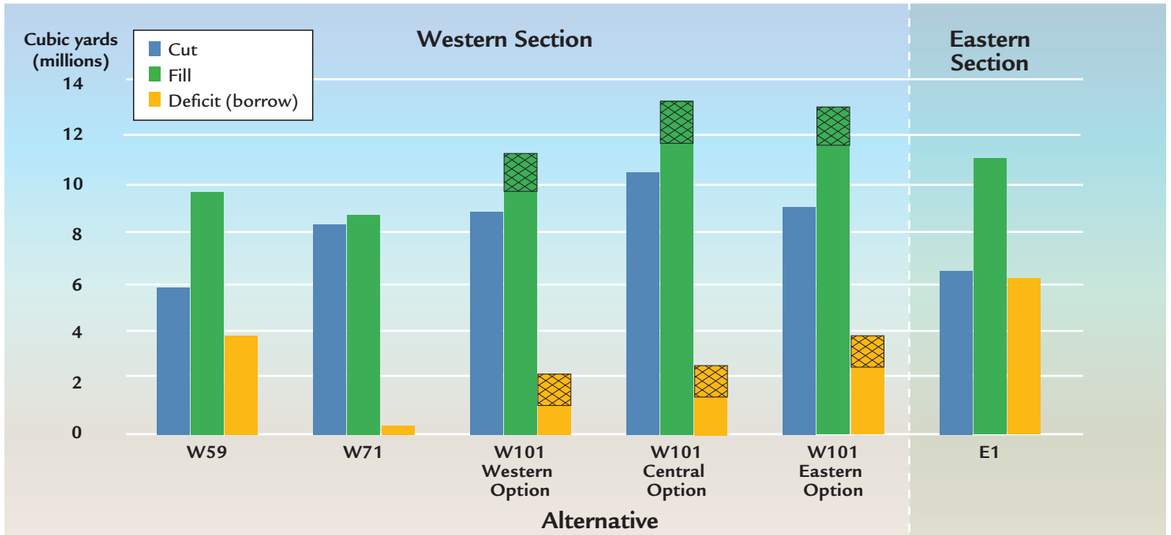
Figure 3-34 Typical Eight-lane Freeway Section



[a] high-occupancy vehicle lane

The freeway cross section would be typical of those found throughout the region's freeways. Regional consistency in lane geometry improves driver expectancy and safety and can contribute to enhanced traffic operation as a result. Right-of-way width varies at specific locations depending on presence of noise walls, drainage basins or channels, retaining walls, etc.

Figure 3-35 Earthwork Quantities, Action Alternatives, Western and Eastern Sections



Note: Cross-hatched area represents the range of quantities associated with the additional earthwork to construct the Full Reconstruction Option of the W101 Alternative and its alignment options at the system traffic interchange with Interstate 10.

A cost-effective goal in constructing the freeway would be to balance the cut and fill along the project. The estimated quantities shown in the figure are not atypical of freeway projects of this magnitude.

Planning-level Cost Estimates

Figure 3-36 summarizes overall planning-level cost estimates for each action alternative. When the Western and Eastern Sections are combined, total freeway costs would range from $2 billion to $2.6 billion (in 2012 dollars), including design, R/W acquisition, and construction. Costs would be updated during the design phase and reflected in the RTP update process. Updating costs is critical to account for cost fluctuations for materials, land acquisition, and design refinements.

Before the Final EIS (FEIS) is published, a formal cost estimate review will be conducted in accordance with Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) guidelines. The official review that would occur between publication of the DEIS and FEIS will determine a probability and range for the cost of the Selected Alternative (should it be an action alternative). Additionally, the review will escalate the current dollar estimates to provide the future cost in the expected year of expenditure.

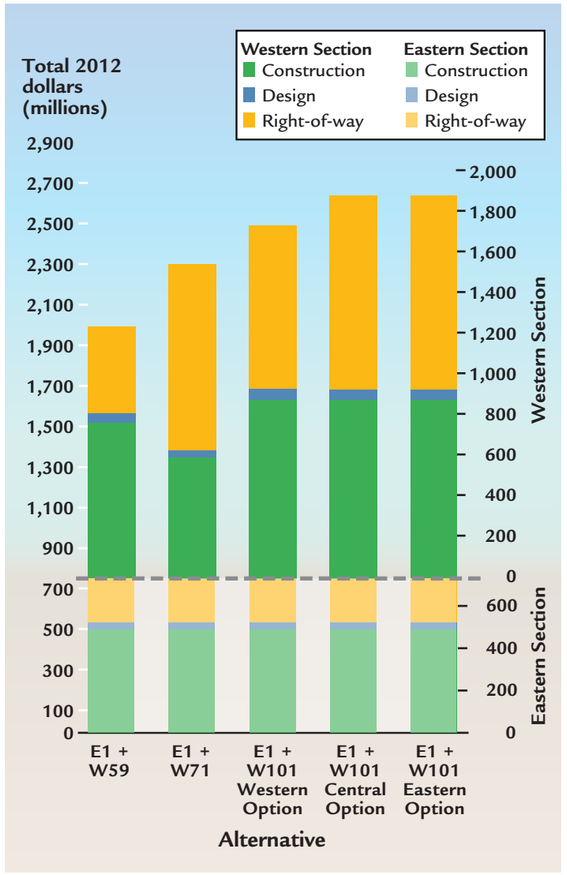
Construction Sequencing and Schedule

Upon completion of the EIS process, and if the Selected Alternative is an action alternative, ADOT would begin the design phase. Upon completion of the initial design phase, the final R/W acquisition process and other "early construction" tasks such as utility relocations would begin. Also, the corridor would be divided into multiple final design segments to establish a construction implementation plan. The termini of these segments would be determined through consideration of several factors, including:

- traffic performance and continuity
- off-site drainage considerations
- impacts to residential areas
- earthwork management
- construction contract management

The proposed construction implementation plan would schedule construction of the corridor to begin at the I-10 (Papago Freeway) system traffic interchange and continue south to approximately Baseline Road. Additional construction would begin near the I-10 (Maricopa

Figure 3-36 Planning-level Cost Estimates, Action Alternatives, Western and Eastern Sections

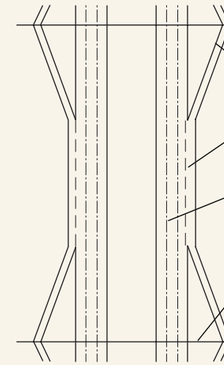


Right-of-way costs could nearly equal costs to construct the proposed action in some cases. Right-of-way costs are a reflection of the growth in the region.

Freeway) system traffic interchange and continue along Pecos Road, through the South Mountains, and end at approximately 51st Avenue. Finally, these two roadway lengths would be connected by constructing the remaining freeway segments between Baseline Road and 51st Avenue. The duration of construction is anticipated to be 5 to 6 years. Construction sequencing and duration could change based on several factors, including funding availability, traffic volumes, coordination with other major freeway projects, earthwork balancing, utility relocation schedules, and regional priorities.

What are auxiliary lanes?

Auxiliary lanes, typically located on the periphery of general through-lanes, facilitate drivers' access to or egress from through-lanes. Highway designers often place auxiliary lanes between successive on- and off-ramps associated with service traffic interchanges. In the graphic and photo shown below, an auxiliary lane is provided between the entrance and exit ramps to allow an extended area for safe acceleration or deceleration. This reduces the degree of potential conflict between through-traffic and travelers merging onto or exiting a freeway.



Source: Arizona Department of Transportation, 2010a

How Are Planning-level Cost Estimates Developed?

Estimating costs for a project like the proposed action is an iterative process as design evolves from conceptual design to final design plans and specifications to be used by the project builder. At the EIS process phase, estimates are typically based on conceptual design, meaning estimates will regularly be revisited and updated as design proceeds. Therefore, the planning-level estimates provided in the DEIS are based on design concepts for major items of the freeway and are expected to change over the life of the project as the design is refined. The assumptions used in developing the estimates were applied equally to all action alternatives studied in detail in the DEIS. For example:

- A contingency percentage was included in the estimates to account for changes as the project would evolve from concepts to construction and because of the uncertainty of future R/W and material costs.
- Estimates for each alternative studied in detail have received the same level of attention and been assigned the same parameters in the estimating process.
- R/W estimates include real property acquisition, relocation, and demolition.
- Construction estimates include major items such as earthwork, pavement, structures, drainage, walls, and traffic control.
- Design estimates are based on a percentage of total construction costs.
- Estimates include costs associated with implementation of mitigation measures as assumed by ADOT and FHWA at the DEIS stage (see *Summary* chapter and Chapter 4, *Affected Environment, Environmental Consequences, and Mitigation*).

Enhancement Opportunities

Construction and operation of any of the action alternatives would create opportunities for ADOT and local jurisdictions to identify additional enhancements. Examples of enhancements are both procedural and project-specific. A procedural enhancement could include the engagement of select members of the public to participate in the design phase or through public art projects in the corridor. A project-specific example might be the result of excess R/W that may be suitable for other public infrastructure projects such as park-and-ride lots or bicycle/multiuse paths. During the design phase, ADOT, local municipalities, the Community, the Regional Public Transportation Authority (RPTA), and MAG would work together to identify and create enhancement opportunities. MAG policy would determine how enhancements would be funded.

TRAFFIC ANALYSIS

Traffic-related analysis has been previously presented for the comparison of the existing conditions and future conditions without a major transportation facility in the Study Area (see section, *Need Based on Regional Transportation Demand and Existing and Projected Transportation System Capacity Deficiencies*, on page 1-13) as well as the comparison between future conditions with and without a major transportation facility in the Study Area (see section, *Responsiveness of Proposed Freeway to Purpose and Need Criteria*, on page 3-27). The following text expands on the analysis of future conditions by presenting the differentiating traffic-related characteristics among the alternatives studied in detail (No-Action Alternative and action alternatives). Because the E1 Alternative is the only action alternative in the Eastern Section, it is logical to assume that it will be common to each action alternative in the Western Section. Therefore, it is included within this discussion, from logical terminus to logical terminus.

2035 Forecast Traffic Conditions in the Study Area and Immediate Surroundings

Figure 3-37 presents future ADT volumes for the No-Action Alternative and action alternatives for freeways and arterial streets in and around the Study Area.

When comparing traffic performance of the action alternatives with traffic performance under the No-Action Alternative, a number of intended outcomes can be observed:

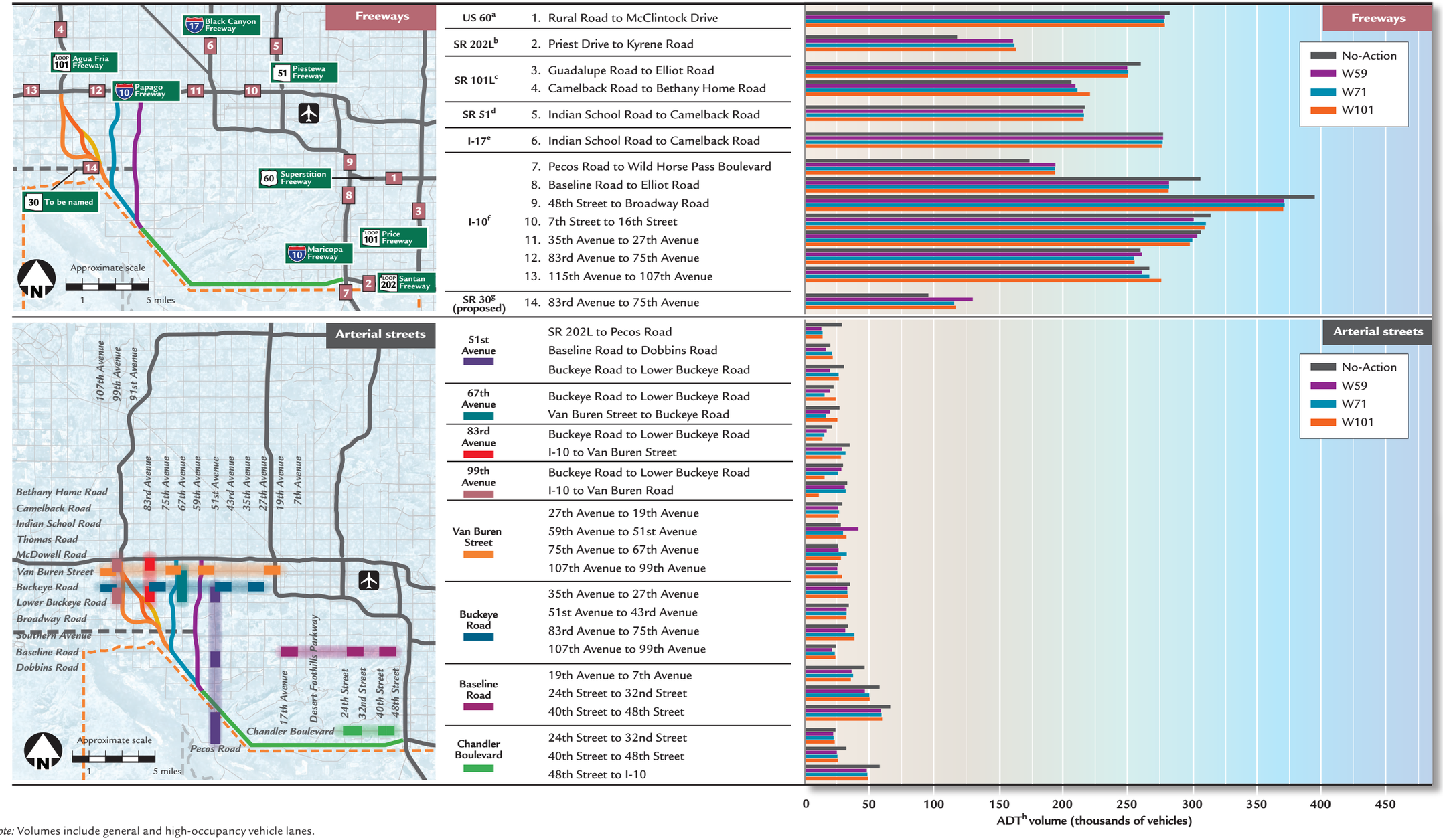
- Nearly all segments of I-10 (Maricopa Freeway) between I-17 and SR 202L (Santan Freeway) would experience reduced traffic volumes with the action alternatives. The reduction would be approximately 24,000 vpd between Baseline and Elliot roads (see location 8 in Figure 3-37) and between 48th Street and Broadway Road (see location 9). The reduced volumes would result in better traffic conditions along this section of I-10.
- The action alternatives would provide a necessary link in the system, resulting in more desirable traffic distributions. With identification of the No-Action Alternative as the Selected Alternative, segments of SR 202L (Santan Freeway) and the proposed SR 30 adjacent to their connections with the proposed freeway would be underused. A six-lane freeway is intended to carry approximately 165,000 vpd. With the No-Action Alternative, these freeways would carry only 115,000 vpd or less.
- Overall, the action alternatives would result in lower traffic volumes on the arterial street network within and around the Study Area. This represents an intended outcome from the RTP—the redistribution of regional traffic from arterial streets to regional freeways.

When comparing traffic operational characteristics of the action alternatives, a number of differences can be observed:

- SR 101L (Agua Fria Freeway), between Camelback and Bethany Home roads (see location 4), would experience greater traffic volumes with implementation of the W101 Alternative than with any of the other action alternatives because of the direct connection between the freeways. This illustrates one of the strengths of the W101 Alternative—it would complete the loop system in the southwestern portion of the Phoenix metropolitan area without causing any overlap on I-10 (with the W59 or W71 Alternatives, drivers would have to get on I-10 to reach SR 101L).
- The proposed SR 30 would be used more with the W59 Alternative than would be the case with the W71 or W101 Alternatives (see location 14). Also, I-10 would experience a small decrease in traffic volumes between 115th and 107th avenues (see location 12) with the W59 Alternative. These points illustrate one of the benefits of the W59 Alternative: it would optimize the long-term system of freeways planned in the southwestern portion of the Phoenix metropolitan area. However, this benefit would not be realized until construction of SR 30 and additional portions of SR 303L. Both of these facilities remain in the RTP, but are currently programmed in the years beyond the current ½ cent sales tax funding horizon.

Additional discussion of how the differences in traffic volumes would affect traffic conditions on the adjacent freeway system can be found in the following sections.

Figure 3-37 Projected Traffic Volumes, Freeways and Arterial Streets, 2035



Note: Volumes include general and high-occupancy vehicle lanes.

[a] U.S. Route 60 [b] State Route 202L (Loop 202) [c] State Route 101L (Loop 101) [d] State Route 51 [e] Interstate 17 [f] Interstate 10 [g] State Route 30 [h] average daily traffic

Source: Maricopa Association of Governments, 2010b; extrapolated analysis

In most cases, representative segments of freeways and arterial streets would experience more daily traffic with the No-Action Alternative than with implementation of any of the action alternatives.

3

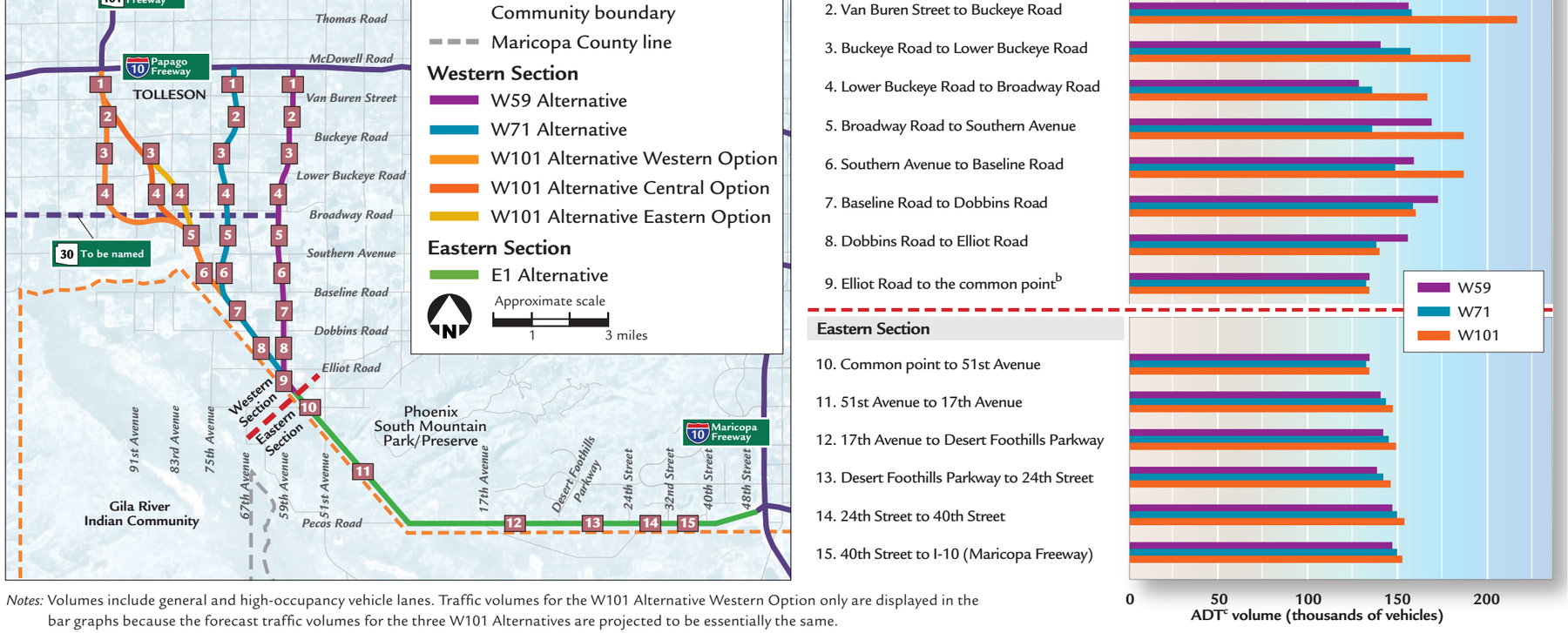
2035 Forecast Traffic Performance, by Action Alternative

Figure 3-38 illustrates the forecast traffic volumes on the action alternatives. Figure 3-39 illustrates the sections where the action alternatives would operate at LOS E or F, and for how long (see text box on page 1-14 regarding LOS). The mix of vehicles (i.e., passenger cars, light trucks, heavy trucks) would be the same regardless of alternative (see text box on page 3-64 regarding related topics).

Notable observations from this information include:

- In general, traffic volumes on the proposed freeway would not vary substantially among the action alternatives. One exception is the W101 Alternative, which would experience higher volumes approaching I-10 (Papago Freeway) because of traffic connecting directly to SR 101L (Agua Fria Freeway).
- The highest traffic volumes for the W59 and W71 Alternatives would be between Baseline and Dobbins roads, just south of the proposed SR 30 connection. The highest volumes for the W101 Alternative would be between the proposed SR 30 connection and I-10 (Papago Freeway).
- The traffic volumes in the Eastern Section would not vary substantially by alternative and would generally be near 150,000 vpd.
- During the morning commute, all of the action alternatives would experience some segments with less than 2 hours of LOS E or F conditions in the northbound direction between Baseline and Elliot roads.
- During the evening commute, all of the action alternatives would experience segments with less than 2 hours, 2 to 3 hours, and over 3 hours of LOS E or F conditions in the southbound and eastbound directions from approximately SR 30 to I-10 (Maricopa Freeway).

Figure 3-38 Projected Traffic Volumes, Action Alternatives, 2035



Notes: Volumes include general and high-occupancy vehicle lanes. Traffic volumes for the W101 Alternative Western Option only are displayed in the bar graphs because the forecast traffic volumes for the three W101 Alternatives are projected to be essentially the same.

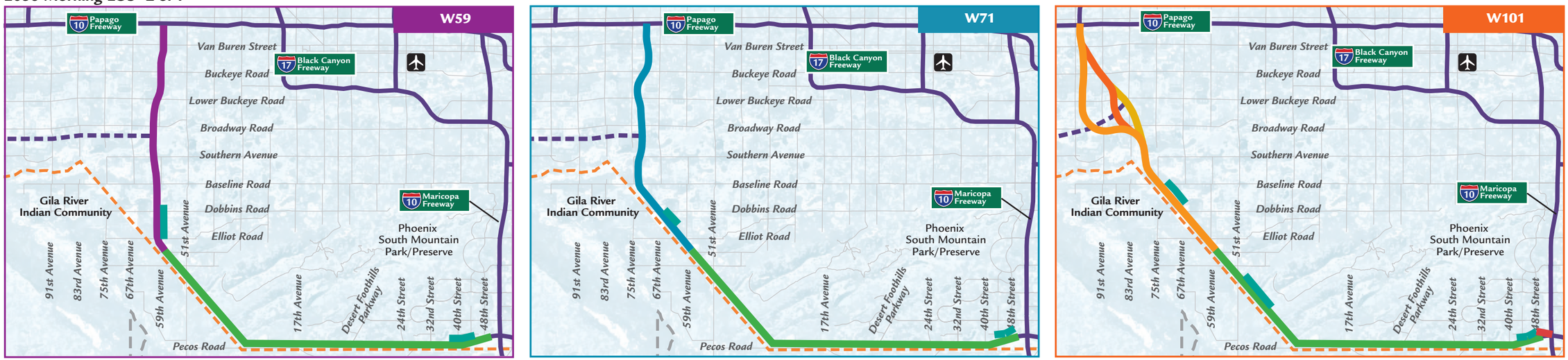
[a] Interstate 10 [b] See text box, *Creation of Western and Eastern Sections for the DEIS*, on page 3-8. [c] average daily traffic

Source: Maricopa Association of Governments, 2010b; extrapolated analysis

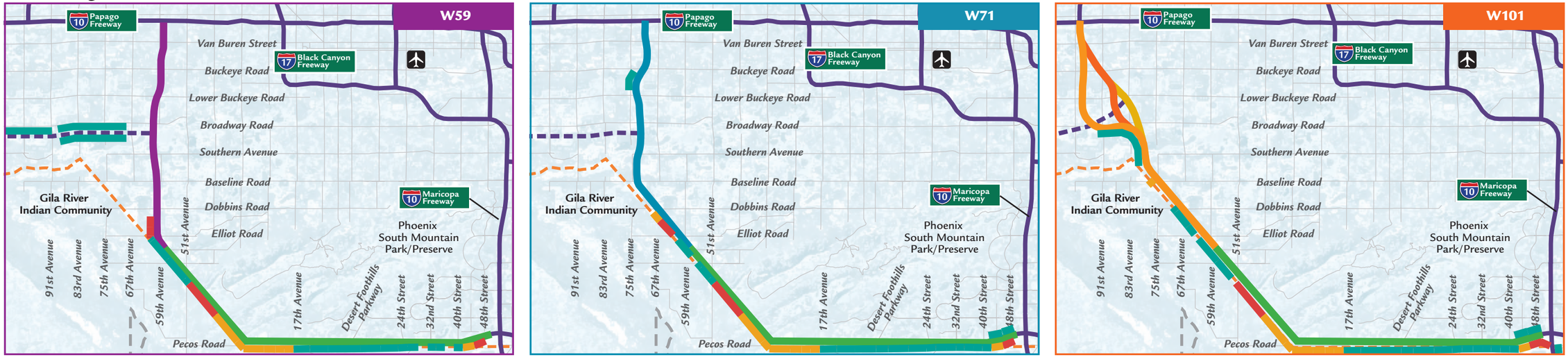
The daily traffic volumes forecast for any of the action alternatives would be comparatively equal and comparable to those of other freeways in the region. Information regarding the operational characteristics of traffic on the action alternatives can be found in Figure 3-39.

Figure 3-39 Modeled Level of Service, Action Alternatives, 2035

2035 Morning LOS[a] E or F



2035 Evening LOS E or F



Existing freeway
Gila River Indian Community boundary
Maricopa County line
Proposed SR 30[b]

Duration of LOS E or F
greater than 3 hours
from 2 to 3 hours
less than 2 hours

Western Section
W59 Alternative
W71 Alternative
W101 Alternative Western Option
W101 Alternative Central Option
W101 Alternative Eastern Option

Eastern Section
E1 Alternative

Approximate scale
1 3 miles

Note: Segments without a color operate at LOS D or better during the morning or evening commute.

[a] level of service [b] The proposed State Route 30 connection would vary based on the Western Section alternative identified.

Source: Maricopa Association of Governments, 2010b; extrapolated analysis

The action alternatives would perform well during the morning commute. Traffic on short segments of the action alternatives would operate at LOS E or F during the evening commute in the Western and Eastern Sections. Figure 3-38 presents the corresponding daily traffic volumes of the segments for the action alternatives.

3

Trucking in the MAG Region

Many public comments have been received suggesting the proposed action would function primarily as a bypass for trucks and as a portion of the CANAMEX Trade Corridor. Chapter 1, *Purpose and Need*, does not have a truck bypass as being a goal of the proposed action. To understand trucking in the MAG region, it is important to start by looking at trucking at the national level.

The efficient movement of goods and delivery of services are paramount to the vitality of the national economy, and the nation's (including Arizona's) freight system is based on trucking. Nationally, trucks transport 71 percent of the nation's freight by value (86 percent in Arizona [ADOT 2007c]), 69 percent by weight (76 percent in Arizona [ADOT 2010b]), and 40 percent by ton-miles (Margenta, Ford, and Dipo 2009). On average, for-hire truck shipments—freight carried by trucks for a fee—traveled 599 miles while private truck shipments—freight carried by a truck owned by the shipper—averaged 57 miles (Margenta, Ford, and Dipo 2009).

Approximately one-third of the nation's freight passes through Arizona, but more than 62 percent of that freight (as measured in freight tonnage—direct correlation to the actual number of trucks is not possible) simply passes through without creating any direct economic benefit to Arizona (MAG 2010c). Almost all trucks passing through Arizona either start or end their trips at the major ports in Southern California. Three interstate highways (Interstate 40, Interstate 15, and I-10) serve as the through-routes for nearly all this traffic.

Truck traffic *within* Arizona is associated with the import, export, and internal distribution of freight. Trucks using I-10 are likely headed to or from the greater Phoenix metropolitan area as a destination. Bringing freight into the state for eventual distribution throughout the state happens primarily in Maricopa County. Just under half of the outbound shipments (as measured in value—correlation to the actual number of trucks is unavailable) from Maricopa County are destined for other parts of Arizona (Arizona Department of Commerce 2004).

Freight terminals, warehouses, intermodal centers, and trucking companies concentrated in the Phoenix metropolitan area hold freight until it is ready for shipment to other parts of the state (MAG 2004). Trucking-related facilities include:

- 43 large freight terminals concentrated in western Phoenix, near the UPRR corridor and near Phoenix Sky Harbor International Airport
- 58 warehouses along the BNSF Railway Company and UPRR corridors, the I-10/I-17 corridors, and on the western side of Phoenix (between 35th and 59th avenues, south of I-10)
- 8 rail/truck intermodal facilities near the BNSF Railway Company and UPRR corridors
- primary trucking companies concentrated on the western side of Phoenix (south of I-10 between 35th and 75th avenues), near Phoenix Sky Harbor International Airport, and along the I-10 and I-17 corridors in central Phoenix

The freight centers are expected to grow (MAG 2004), with a highly concentrated area of transportation, distribution, and wholesale trade employment to occur in the existing I-10 commercial and industrial corridor from US 60/Phoenix Sky Harbor International Airport to SR 101L (Agua Fria Freeway).

While trucks dominate the freight market, they may also "appear" to dominate the nation's highways . . . but they do not. The following examples reflect this:

- Nationally, commercial trucks accounted for about 7 percent of highway VMT (FHWA 2004).
- On I-10 near the proposed action, trucks represent 8 percent of total traffic during peak travel periods and 15 percent in off-peak hours.
- Nationally, truck VMT doubled between 1980 and 2003, but commercial trucks' share of total highway VMT increased only 0.4 percent over the same period (U.S. Department of Transportation [USDOT] Bureau of Transportation Statistics 2006).
- In Arizona, the number of registered passenger cars and noncommercial vehicles increased from 1998 to 2010 by 46 percent, much faster than did registrations for commercial vehicles (35 percent) (ADOT 2010c).

So why would trucks "appear" to dominate the nation's highways? It is a difficult question to answer, but to drivers in passenger vehicles, trucks can be imposing:

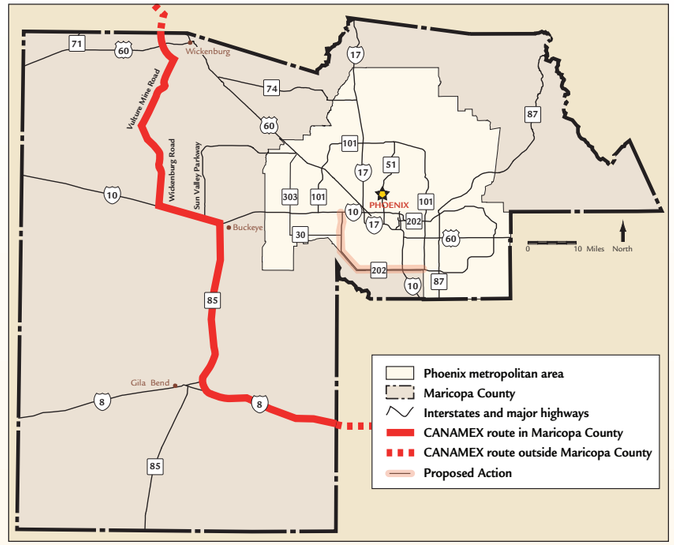
- Trucks are simply bigger and more visible than passenger vehicles.
- They attract and demand attention of other drivers because they are harder to maneuver and require more space.
- Their cargo can appear "threatening."
- They can "kick up" dirt and debris from pavement.
- They are louder than passenger vehicles.
- Because they burn diesel fuels, exhaust from trucks appears "dirtier" than exhaust from passenger vehicles.

Commercial trucks would use the proposed action. As with all other freeways in the MAG region, trucks would use it for the through-transport of freight, for transport to and from distribution centers, and for transport to support local commerce. And as with travel on all other freeways in the MAG region, the primary users of the proposed action would be automobiles. Latest vehicle classification counts available from ADOT for 2007 show passenger vehicles and other nontruck vehicles make up over 90 percent of all traffic on the freeway system, and it is expected these percentages would not vary with the proposed action.

Further, it is not expected that the entire 21 percent of through-traffic (by tonnage) using I-10 would divert from I-10 to use the proposed action. The trucking industry heavily depends on the efficient and fast movement of freight and on travel time savings. Trucking destinations in the Phoenix metropolitan area (either distribution centers or for local commerce) would require trucks to enter congested areas. Choosing to travel on the proposed action versus I-10 would not translate to any substantial travel time benefits (ADOT 2001). A representative of the trucking industry confirmed that "true" through-truck traffic (not having to stop in the metropolitan area) would continue to use the faster, designated, and posted bypass system of I-8 and SR 85.

The CANAMEX Trade Corridor was defined by Congress in the 1995 National Highway Systems Designation Act (Public Law 104-59). The CANAMEX Corridor is a high-priority route traversing Arizona, Nevada, Utah, Idaho, and Montana, and linking to the Canadian province of Alberta and the Mexican states of Sonora, Sinaloa, Nayarit, and Jalisco. Development of the Corridor is advanced through a multistate coalition that includes public and private sector representatives selected by the governors of the five U.S. states.

Within the United States, the Corridor is intended to be a strategic investment in infrastructure and technology to advance a focused agenda to increase competitiveness in global trade, create jobs, and maximize economic potential within the five-state region. The transportation component calls for the development of a continuous four-lane roadway from Mexico, through the U.S. CANAMEX states, and into Canada.



In the Maricopa County area, the CANAMEX Corridor is to follow I-10 from Tucson to I-8 near Casa Grande, I-8 west to SR 85 near Gila Bend, SR 85 north to I-10 northwest of Buckeye, I-10 west to Wickenburg Road, Wickenburg Road to Vulture Mine Road west of Wickenburg, and then connect with the planned US 93/US 60 Wickenburg Bypass. Recent studies completed by MAG, including the *Interstate 10/Hassayampa Valley Roadway Framework Study* (MAG 2008b) and the *Interstates 8 and 10/Hidden Valley Transportation Framework Study* (MAG 2009e) have further defined the long-range planning for the CANAMEX corridor in Arizona. Also, the July 6, 2012, passage of Moving Ahead for Progress in the 21st Century Act, also known as MAP-21, formally added this segment of the CANAMEX corridor to the Interstate system as Interstate 11.

Some public concern has focused on 1) air pollution from trucks using the proposed CANAMEX Corridor that would reach the Study Area and 2) international truckers who would choose to use the proposed freeway to shorten their connection to the CANAMEX Corridor west of Phoenix. As the map on this page shows, the CANAMEX route would never be closer than about 15 miles to any of the proposed freeway's action alternatives and the proposed freeway would not offer shorter travel times. The CANAMEX Corridor's proposed routing avoids any congestion associated with the Phoenix metropolitan area.

I-10 is heavily traveled through Arizona, and traffic projections indicate it will remain so. Three locations for a system traffic interchange with I-10 (Papago Freeway) are being considered in the Western Section of the Study Area: at 59th Avenue, 71st Avenue, and SR 101L. Operational considerations on I-10 would be a key component, therefore, in the identification of the Selected Alternative.

Figure 3-40 illustrates the sections along I-10 that would operate at LOS E or F—and for how long—during the morning and evening commutes with action alternatives or the No-Action Alternative in 2035.

Notable observations from this information include:

- The No-Action Alternative would result in the greatest number of sections along I-10 that would operate at LOS E or F, and for the longest duration.
- When comparing the action alternatives during the morning commute, all would result in 3 hours of LOS E or F on eastbound I-10 from 59th Avenue to I-17. On I-10 between SR 101L and 59th Avenue, the W59 Alternative would result in the best LOS. The other action alternatives would primarily experience from 2 to 3 hours or over 3 hours of LOS E or F in that same segment of I-10. The W59 Alternative would perform best because, in combination with the proposed SR 30, it would reduce travel demand on that segment of I-10.
- During the evening commute, all of the action alternatives would result in over 3 hours of LOS E or F on westbound I-10 from I-17 to approximately 75th Avenue. On I-10 from 75th Avenue to SR 101L (Agua Fria Freeway), they would result in varying lengths of segments with between 2 to 3 hours and less than 2 hours of LOS E or F.
- The W71 and W101 Alternatives would provide the best access to destinations west and north of downtown Phoenix.
- As noted previously, I-10 traffic conditions would be greatly improved with construction of the proposed SR 30. Without construction of SR 30, however, the traffic conditions associated with any of the action alternatives would be worse than what are shown by this analysis.

IDENTIFICATION OF A PREFERRED ALTERNATIVE

A preferred action alternative in the Western and Eastern Sections has been identified.

Identification of a Preferred Alternative in the Western Section (W59 Alternative)

This section summarizes the alternatives screening process and factors considered for the identification of a Preferred Alternative in the Western Section. It begins with the identification of a preliminary preferred alternative, the W55 Alternative, and then discusses the shift to the W59 Alternative. The concluding discussion focuses on the reasons that ADOT and FHWA identified the W59 Alternative, and not the W71 or W101 Alternative, as the Preferred Alternative in the Western Section. A side-by-side comparison of the factors used in the alternatives screening process for each action alternative is presented in Figure 3-41. Additional detail regarding the impacts associated with each action alternative is presented in Chapter 4, *Affected Environment, Environmental Consequences, and Mitigation*, and is summarized in Table S-3, beginning on page S-10.

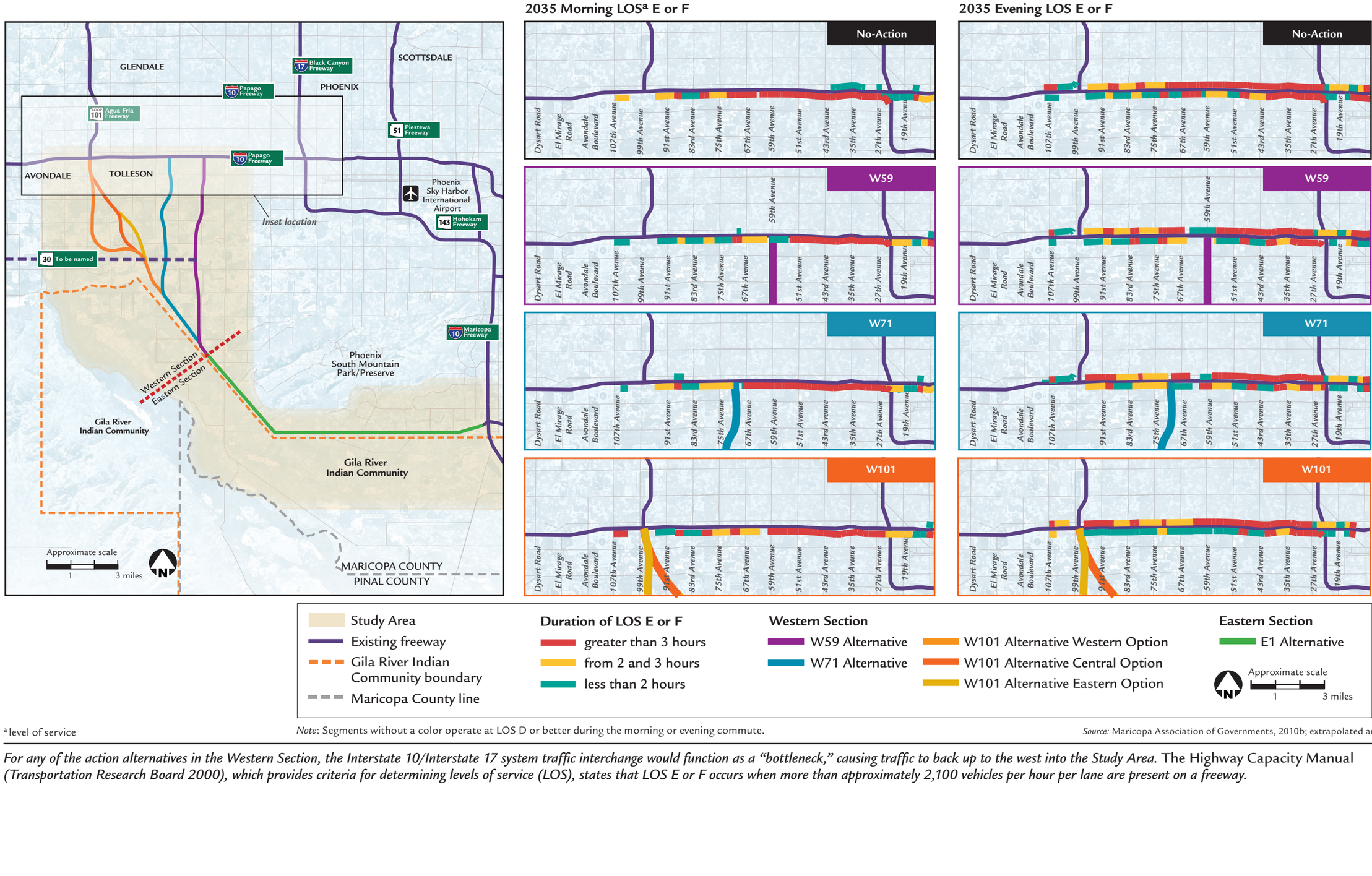
In the summer of 2006, ADOT, with FHWA concurrence, identified the W55 Alternative as the preliminary preferred alternative in the Western Section. The public announcement in 2006 of the W55 Alternative as the preliminary preferred alternative prior to issuance of the DEIS was in response to increasing requests by officials of affected municipalities and land developers to allow better land planning in the rapidly developing Western Section. The announcement was grounded in the following context:

- Identification of the preliminary preferred alternative applied only to the Western Section of the proposed action corridor.
- Identification of the W55 Alternative as the preliminary preferred alternative in the Western Section was independent of a similar decision to be made regarding a Preferred Alternative in the Eastern Section.
- Because of outstanding issues at the time (2006) regarding Community coordination and the South Mountains, ADOT and FHWA elected to postpone a similar identification of a preliminary preferred alternative in the Eastern Section to continue Community coordination efforts.
- ADOT and FHWA have sought permission to develop alternatives on Community land. Coordination among ADOT, FHWA, and the Community regarding permission has occurred since project inception; however, despite those efforts, ADOT and FHWA have determined that an alternative alignment on Community land is not feasible. (Issues relevant to Community coordination are presented in Chapter 2, *Gila River Indian Community Coordination*.)
- Identification of the W55 Alternative as the preliminary preferred alternative in the Western Section of the corridor would not preclude the No-Action Alternative from being the Selected Alternative later in the EIS process.
- Identification of the W55 Alternative as the preliminary preferred alternative would not represent a final determination by ADOT and FHWA.

In identifying the preliminary preferred alternative, ADOT concluded the W55 Alternative would best balance fiscal responsibility, regional mobility needs, community sensitivity, and additional considerations such as consistency with long-range planning goals, economic and environmental impacts, and public and agency input. The SMCAT, formed specifically to evaluate the proposed action, was empowered to consider many of the same parameters as ADOT examined and, in doing so, to recommend a preliminary preferred alternative to ADOT for its consideration in its decision making. As presented in Chapter 6, *Comments and Coordination*, the SMCAT evaluation resulted in its recommending the W101 Alternative. In doing so, the SMCAT emphasized the importance of addressing long-term regional mobility issues, but also expressed concern regarding possible impacts on community character and cohesion. ADOT shared SMCAT concerns about both long-term regional mobility and community sensitivity. These concerns, when combined with ADOT's concern for potential reduction in community services, in

3

Figure 3-40 Modeled Level of Service, Interstate 10, Western Section, 2035



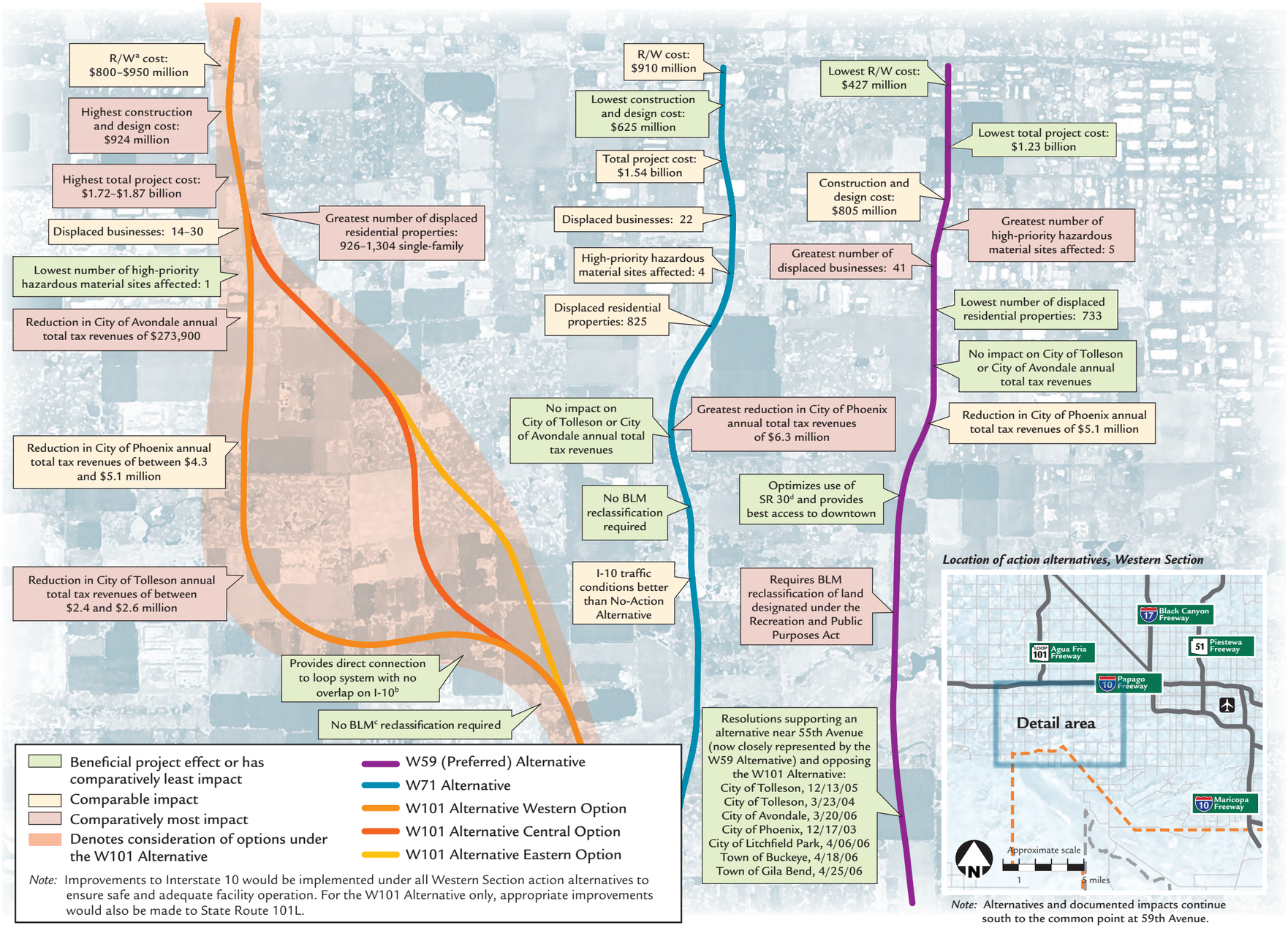
[a] level of service

Note: Segments without a color operate at LOS D or better during the morning or evening commute.

Source: Maricopa Association of Governments, 2010b; extrapolated analysis

For any of the action alternatives in the Western Section, the Interstate 10/Interstate 17 system traffic interchange would function as a "bottleneck," causing traffic to back up to the west into the Study Area. The Highway Capacity Manual *(Transportation Research Board 2000), which provides criteria for determining levels of service (LOS), states that LOS E or F occurs when more than approximately 2,100 vehicles per hour per lane are present on a freeway.*

Figure 3-41 Comparative Analysis, Action Alternatives, Western Section



[a] right-of-way [b] Interstate 10 (Papago Freeway) [c] Bureau of Land Management [d] State Route 30

A comprehensive, multidisciplinary approach to identifying a Preferred Alternative in the Western Section led the Arizona Department of Transportation and the Federal Highway Administration to a determination that balanced overall transportation needs; consistency with regional and long-range planning goals; environmental, economic, and societal impacts; operational differences; estimated costs; and regional support and public inputs.

Tolleson in particular, ultimately contributed to ADOT's 2006 identification of the W55 Alternative—and not the W101 Alternative—as the preliminary preferred alternative. ADOT's determination was reached after:

- consideration of overall transportation needs in the region as identified in the RTP as adopted by Maricopa County voters
- consideration of consistency with clearly established long-range regional planning goals
- comparison of environmental and societal impacts expected from each of the alternatives and assessment of the ability to mitigate impacts
- a comparative examination of operational performance among the three action alternatives in the Western Section
- estimation of project costs in the context of fiscal responsibility to overall regional transportation infrastructure costs
- consideration of more than 4 years of public and agency input, including comments received at more than 200 formal and informal information exchanges with the public (through public meetings, the project Web site, and project telephone log, as well as recognition of resolutions passed by local communities and the SMCAT recommendation)

In 2009, MAG suggested that a portion of the W55 Alternative could be shifted west onto 59th Avenue to take advantage of the existing R/W and reduce cost and business displacements. This shifted alignment (called the W59 Alternative) would connect to I-10 (Papago Freeway) at an existing service traffic interchange. After further analysis was conducted related to alignment, traffic operations, construction impacts, and environmental considerations, the following advantages and disadvantages were identified:

- would enable better I-10 traffic performance than would be achievable with the W55 Alternative
- would offer certain design advantages over the W55 Alternative
- would be preferred from a security perspective because it would be farther from the petroleum storage facilities at 51st Avenue and Van Buren Street
- would not reconstruct the 51st Avenue Bridge at I-10
- would require the relocation of fewer businesses
- would require the relocation of utilities along 59th Avenue
- would cause increased disruption of traffic during construction along 59th Avenue
- would eliminate direct access from I-10 to 59th Avenue and vice versa (indirect access would be provided by a system of access roads connecting to 51st and 67th avenues)
- would require the relocation of more single-family residences and two apartment complexes

Believing that the advantages outweighed the disadvantages, ADOT and FHWA identified the W59 Alternative as the preliminary preferred alternative in the Western Section. The process and factors leading to identification of the W59 Alternative as the preliminary preferred alternative in the Western Section mirror those considered by ADOT and FHWA in 2006 to identify the W55 Alternative as the preliminary preferred alternative.

In preparing the DEIS for the proposed action, ADOT and FHWA identified the W59 Alternative as the Preferred Alternative in the Western Section and reconfirmed the following:

- Identification of the W59 Alternative as the Preferred Alternative in the Western Section does not preclude the No-Action Alternative from being the Selected Alternative later in the EIS process.
- The issues and factors leading ADOT and FHWA to identify the W59 Alternative as the Preferred Alternative remain applicable and well-founded. (However, identification of the Preferred Alternative in the DEIS does not represent a final determination by ADOT and FHWA; identification of a Preferred Alternative could change.)

In undertaking the process leading to this identification, ADOT and FHWA compared performance between the W59, W71, and W101 Alternatives. This process is described below.

When comparing action alternatives in the Western Section, the W71 Alternative was considered the least desirable of the three action alternatives because:

- The duration and extent of congested conditions on I-10 would be the least desirable of the alternatives considered.
- Residential impacts and relocations would be high (up to 825 properties affected).
- Regional and public support is lacking.
- The presence of an alignment is not consistent with local land use plans dating back to the mid-1980s.

ADOT continued the evaluation of the Western Section action alternatives by conducting a comparative analysis of the W59 and W101 Alternatives, as summarized below.

Overall Transportation Needs

- The W59 Alternative would better link the southern areas of the region with the central metropolitan area and would provide an alternative route to I-10 for regional connectivity.
- The W59 Alternative would be more consistent with local and regional transportation plans, including the RTP.
- Northbound and southbound motorists using the W101 Alternative would have a direct connection to SR 101L (Agua Fria Freeway) and would not have to travel on I-10 (Papago Freeway). This would complete a true loop around the Phoenix metropolitan area.
- The W101 Alternative would need additional widening improvements to SR 101L (Agua Fria Freeway).
- The W59 Alternative would need additional widening improvements to I-10 (Papago Freeway).

Consistency with Regional and Long-range Planning Goals

- The W59 Alternative would result in less land being converted to freeway use, thereby optimizing opportunities for planned development.
- Since the mid-1980s, City of Phoenix land use planning has progressed in recognition of the planned location of the proposed freeway near the W59 Alternative. Related land use planning for the Phoenix Villages of Estrella and Laveen has been consistent with the City's long-range land use planning.
- The location of the Salt River crossing of the W59 Alternative would be consistent with the Rio Salado Oeste joint use project planned by the City of Phoenix, USACE, and FCDMC.
- The W59 Alternative would avoid impacts on the planned expansion of the City of Tolleson wastewater treatment facility.

Environmental and Societal Impacts

- The W59 Alternative would result in fewer residential displacements.
- The W59 Alternative would have a nominal effect on the local tax base in Phoenix. It would result in less impact on the local tax bases in Tolleson and Avondale.
- Conversely, the W101 Alternative would have a severe impact on the City of Tolleson's tax base and would lead to a reduction in City-provided services.
- R/W for the W101 Alternative would eliminate a substantial portion of the remaining developable land in Tolleson. Tolleson is landlocked by Phoenix and Avondale, with no opportunity for future expansion of its city limits.

Operational Differences

- The W59 Alternative would provide better traffic conditions along I-10 (Papago Freeway) west of 59th Avenue, with less congestion expected on I-10 during both the morning and evening commutes compared with the other action alternatives.
- The W101 Alternative would provide a direct connection to SR 101L (Agua Fria Freeway), thus completing the loop system without any overlap on I-10.
- The W59 Alternative would provide more direct access to downtown Phoenix.
- The W101 Alternative would provide better access to destinations west and north of downtown Phoenix.
- The W59 Alternative would optimize the long-term system of freeways planned in the southwestern portion of metropolitan Phoenix. However, these benefits would not be realized until SR 30 and SR 303L, south of I-10, are completed.
- The W59 Alternative would avoid the skewed arterial street interchange configurations that would be needed for the W101 Alternative to connect with the planned SR 30, ARS, and several arterial streets.

Estimated Costs

- The total cost of the W59 Alternative would be $490 million to $640 million less than the W101 Alternative (see the section, *Planning-level Cost Estimates*, beginning on page 3-59).

Regional Support and Public Input

- Resolutions passed by the City/Town Councils of Avondale, Buckeye, Gila Bend, Goodyear, Litchfield Park, Phoenix, and Tolleson supported an alternative near 55th Avenue (now closely represented by the W59 Alternative) and opposed the W101 Alternative.
- Public input was split in support of either the W55 (now closely represented by the W59 Alternative) or W101 Alternative. The SMCAT supported the W101 Alternative, but expressed concern about its impacts on the communities surrounding the proposed freeway.

After considering the above points, ADOT, with concurrence from FHWA, identified the W59 Alternative as its Preferred Alternative in the Western Section.

Identification of a Preferred Alternative in the Eastern Section (E1 Alternative)

The E1 Alternative is the only action alternative developed for the Eastern Section. ADOT and FHWA sought permission to study alternatives in detail on Community land, but the Community decided such alternatives would not be in the Community's best interest (see Chapter 2, *Gila River Indian Community Coordination*). Therefore, ADOT, with concurrence from FHWA, identified the E1 Alternative as its Preferred Alternative in the Eastern Section. In reaching its determination, ADOT sought to balance its responsibilities to address regional mobility needs while being fiscally responsible and sensitive to local communities.

CONCLUSIONS

Upon confirming the purpose and need for the proposed action, a multidisciplinary process was undertaken to identify a range of reasonable alternatives to be studied in detail in the DEIS. The process involved identifying, comparatively screening, and eliminating alternatives based on:

- input from the public
- a comparison of modal choices
- a multidisciplinary set of criteria evenly applied
- the historical context of the proposed action
- projected conditions with and without the alternatives being considered

As a result of the alternatives development and screening process, the following conclusions were reached:

- The geographic limits of the proposed action serve as logical termini, do not constrict meaningful consideration of other reasonably foreseeable alternatives, permit study of alternatives of a sufficient length, and allow for independent utility of the proposed action.
- The three identified action alternatives in the Western Section (W59, W71, and W101), one action alternative in the Eastern Section (E1), and the No-Action Alternative represent a range of reasonable alternatives that were the subject of detailed study in the DEIS.

The design concepts of each action alternative, as presented in this chapter, were developed to a level to facilitate meaningful comparison of operational performance and assessment of impacts.

If new alternatives are presented for ADOT/FHWA consideration prior to the issuance of a ROD, the agencies will determine whether those alternatives are reasonable and should be considered in the EIS process.

ADOT and FHWA have identified the W59 Alternative as the Preferred Alternative in the Western Section and the E1 Alternative as the Preferred Alternative in the Eastern Section. The identification—while not a final determination, and one that can be changed—was based on the data and conclusions presented throughout the DEIS. The identification of the W59 Alternative and E1 Alternative as the Preferred Alternatives, in summary, rests on a balanced consideration of overall transportation needs; consistency with regional and long-range planning goals; environmental, economic, and societal impacts; operational differences; estimated costs; and regional support and public inputs.