## Alternatives Development and Screening Process

<table>
<thead>
<tr>
<th>Mid-1980s</th>
<th>Draft EIS</th>
<th>A range of reasonable alternatives were developed and screened using a multidisciplinary set of criteria.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alternatives for a major transportation facility in the Study Area were proposed.</td>
<td>Previous proposals and alignments were incorporated into the current Draft EIS process.</td>
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</tbody>
</table>

What does “a range of reasonable alternatives” mean?

Federal regulations stipulate that an EIS shall rigorously explore and objectively evaluate all reasonable alternatives. Reasonable alternatives are practical or feasible from a technical, economic, and community standpoint.

### Screening Criteria

- Ability to satisfy purpose and need
- Ability to minimize impacts on the human and natural environments
- Ability to improve operational characteristics of the region’s transportation system
- Degree of public and political acceptability
- Overall conceptual cost estimates

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**ALL IDENTIFIED POTENTIAL SOLUTIONS**

**Modal Options**

**Corridor Options**

**Alignment Options**

**Design Options & Refinements**

**Alternatives to be Studied in Detail**

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**CHAPTER 3**
## Modal Screening

### Alternatives to the Freeway Mode

“Modes” refer to types of transportation, such as light rail, buses, and freeways.

<table>
<thead>
<tr>
<th>Alternative</th>
<th>Element</th>
<th>Reasons for elimination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transportation System Management</td>
<td>Examples: Overhead message boards and auxiliary lanes</td>
<td>WOULD NOT meet projected travel needs of the region.</td>
</tr>
<tr>
<td>Transportation Demand Management</td>
<td>Examples: Telecommuting and reverse commuting</td>
<td></td>
</tr>
<tr>
<td>Transit</td>
<td>Light rail</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Commuter rail</td>
<td>Note that elimination of these alternatives does not preclude using them in combination with the freeway mode, nor does it preclude them from being implemented in the future.</td>
</tr>
<tr>
<td></td>
<td>Bus routes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Van pools</td>
<td></td>
</tr>
<tr>
<td>Street network expansion</td>
<td>• Add more lanes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Improve intersections</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• New streets</td>
<td></td>
</tr>
<tr>
<td>Land use</td>
<td>• Increase residential densities</td>
<td>NO additional modifications are feasible to land uses, beyond those already identified in the RTP.</td>
</tr>
<tr>
<td></td>
<td>• Redistribute employment centers</td>
<td></td>
</tr>
</tbody>
</table>

**CONCLUSION:** The **FREEWAY MODE** was determined to meet the purpose and need for the project while minimizing impacts. Where appropriate, the freeway would incorporate aspects of non-freeway alternatives to optimize travel, such as carpool lanes and electronic message signs.
Freeway Alignment Screening

Steps

1. Identified & broad corridors
2. Identified numerous alignments from previous studies and public/agency input
3. Compared alternatives
4. Eliminated Western Section Alternatives
5. Eliminated Eastern Section Alternatives
6. Action Alternatives to be Studied in Detail

Results

- Eliminated Corridor A
  - Reason for elimination: It would not serve as many travelers as other corridors
- Created specific alignment alternatives that:
  - best met the need for the project,
  - met design standards,
  - avoided environmental conflicts to the extent possible.
- Eliminated Alignments on GRC (51st Avenue/ Bellline Road/Riggs Road alignment) because the Community had not granted permission to study alternatives on its land at that time.
- Eliminated SR 85/Interstate 8 Alternative because it would not complete the loop system and would cause substantial out-of-direction travel.
- Eliminated alternatives that generated greater operational, environmental, and/or economic impacts.

- Eliminated Alternatives
  - T05
  - T06
  - T07
  - T09
  - Reasons for elimination:
    - Operational failures on I-10 (Papago Freeway)
    - Substantial construction and right-of-way costs
    - Substantial impacts to existing and planned residential and commercial developments
- Eliminated Ray Road and Chandler Boulevard Alternatives
  - Required hundreds of residential displacements
  - Split Ahwatukee Foothills Village
  - Adversely impacted local traffic circulation
  - Eliminated US 60 extension because it did not address travel demand and capacity needs.
  - Eliminated I-10 spur
    - Caused poor traffic operations on I-10, US 60, and Loop 101 (Price Freeway)
    - Required thousands of residential displacements
- Eliminated Central Avenue Extension Tunnel
  - Created minimal traffic operational improvements
  - Cost-prohibitive, undesirable for safety and emergency response

- Western Section Action Alternatives
  - W355 (later revised to W395)
  - W71
  - W101 Western, W101 Central, and W101 Eastern
- Eastern Section Action Alternative
  - E1 Alternative, also known as the Pecos Road Alignment
Options for Reducing Impacts to the South Mountains

Bridge and tunnel options were eliminated because of:

- safety and accident-management concerns.
- homeland-security concerns.
- construction and maintenance issues.
- future expansion limitations.
- substantially higher estimated costs.
- inability to eliminate impacts to the South Mountains.

Options for Reducing Impacts on Ahwatukee Foothills Village

Options to depress the Pecos Road alignment below the current ground level were eliminated because of:

- operational and maintenance issues.
- greater right-of-way requirements.
- increased costs.
- increased residential displacements.

Constructing the proposed freeway within the utility easement south of Pecos Road to provide additional separation of the freeway from the neighborhoods was eliminated because:

- additional right-of-way for the utility easement would still be required.
- the existing lines could not be relocated underground because of the ancillary equipment required (e.g., cooling facilities) and associated costs.
- relocating the overhead power lines immediately adjacent to residences would cost approximately $1.5 million.
**Design Adjustments**

**Arizona Parkway* Concept**

Was considered, but **eliminated** from further consideration because it:
- would not help improve congestion.
- would not remove a sufficient amount of traffic from the arterial street network.
- would not meet the proposed project’s stated purpose and need.

* For more information see: www.bqaz.org/azparkway

**Reducing the Freeway and Freeway Right-of-Way**

<table>
<thead>
<tr>
<th>Original 10-lane concept</th>
<th>Revised 8-lane concept</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 lanes</td>
<td>8 lanes all constructed at once*</td>
</tr>
<tr>
<td>4 future lanes in median</td>
<td></td>
</tr>
</tbody>
</table>

Use **SIDESLOPES** in all areas

**317** total residential displacements along the E1 Alternative**

**LONG TERM** provides more capacity and better level of service

Use **RETTAINING WALLS** as cost-effective measure to reduce right-of-way impacts

**138** total residential displacements along the E1 Alternative**

**INITIALLY** provides more capacity and better level of service

**CONCLUSION:** The **10-LANE FREEWAY** was eliminated from further consideration. The **8-LANE FREEWAY** was carried forward; it would address the purpose and need for the project and require less right-of-way acquisition.

**Notes:** The 8-lane concept would not preclude further widening. Both the 10-lane and the 8-lane concepts would impact the community church at 24th Street and Pecos Road. The residential displacements along the W59 Alternative would be relatively the same for both concepts.

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**CHAPTER 3**
Alignment Adjustments to W59 Alternative

**W55 Alternative Shifts to 59th Avenue at I-10 (Papago Freeway)**

The W59 Alternative offers the following characteristics compared to the W55 Alternative:

**Advantages**
- Would take advantage of right-of-way owned by the City of Phoenix.
- Would reduce business displacements.
- Would allow I-10 traffic to perform better.
- Would be preferable from a security perspective (farther from the petroleum storage facilities at 51st Avenue and Van Buren Street).
- Would eliminate the need to reconstruct the 51st Avenue Bridge at I-10.

**Disadvantages**
- 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 59th Avenue to and from I-10 (indirect access would be provided by access roads connecting to 51st and 67th avenues).
- Would require the relocation of more single-family residences and two apartment complexes.

**CONCLUSION:** Because of these factors, the W59 ALTERNATIVE was carried forward and the W55 ALTERNATIVE was eliminated from further consideration.

**W59 Alternative Shifts to 62nd Avenue in Laveen**

- In response to the City of Phoenix request, the study team reexamined the alignment of the W59 Alternative near Dobbins Road in Laveen Village.
- An alignment along 62nd Avenue would avoid historic properties in the area and would minimize conflicts with City-approved zoning activities in Laveen Village.

**CONCLUSION:** After extensive discussions with the City of Phoenix and MAG, FHWA and ADOT SUPPORTED the shift of the W59 Alternative to 62nd Avenue near Dobbins Road.
Screening Process Results

As a result of the screening process, five alternatives in the Western Section and one alternative in the Eastern Section were carried forward for detailed study in the Draft EIS.

Typical 8-Lane Freeway Configuration
The action alternatives would have three 12-foot-wide general-purpose lanes and one HOV lane in each direction, separated by a median barrier.

What other elements would be associated with all of the action alternatives?

- Auxiliary lanes between entrance and exit ramps would be used where warranted.
- Rubberized asphalt would be applied according to ADOT policy.
- Signs, lighting, traffic signals and pavement markings would be designed to meet current guidelines and standards.
- Drainage structures (basins, pipes, culverts, bridges) would be designed to meet standards and guidelines.
- Noise walls would be located adjacent to properties such as homes, schools, and churches as warranted.

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CHAPTER 3
Other Alternatives Studied in Detail

W101 Alternatives

Western Option

Central Option

Eastern Option

W71 Alternative

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CHAPTER 3
Traffic Analysis of the Action Alternatives

Assessing future traffic conditions provided the study team a basis to compare the action alternatives studied in detail.

How would traffic on the proposed freeway vary by alternative?

Future daily traffic volumes on the action alternatives would be similar to those of other freeways in the region.

What would the LOS be on the proposed freeway by alternative?

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.

What would the LOS be on I-10 (Papago) by alternative?

The W59, W71, and W101 Alternatives would meet the purpose and need criteria and would provide similar advantages when compared to the No-Build Alternative.
The No-Build Alternative is included for detailed study in accordance with NEPA requirements. Evaluation of the No-Build Alternative concluded that it **WOULD NOT** satisfy the purpose and need.

### Percentage of trips in the Study Area

<table>
<thead>
<tr>
<th>WITH a freeway in 2035</th>
<th>WITHOUT a freeway in 2035</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less traffic on streets</td>
<td>26% on arterial streets</td>
</tr>
<tr>
<td>74% on freeways</td>
<td>66%</td>
</tr>
</tbody>
</table>

**CONCLUSION:** With the proposed freeway, traffic **WOULD BE** distributed appropriately based on travel needs. **Without the freeway,** major travel delays **WOULD BE experienced** on the local arterial street system.

### Travel time to downtown

<table>
<thead>
<tr>
<th>Faster travel times</th>
<th>FROM</th>
<th>TO</th>
</tr>
</thead>
<tbody>
<tr>
<td>23 min from Laveen</td>
<td>32 min</td>
<td></td>
</tr>
<tr>
<td>26 min from Ahwatukee</td>
<td>32 min</td>
<td></td>
</tr>
</tbody>
</table>

**CONCLUSION:** With the proposed freeway, annual travel time costs savings would be approximately **$200 million** when compared to conditions without the freeway.

### Miles of I-10 with 3+ hours of congestion

<table>
<thead>
<tr>
<th>Fewer traffic jams</th>
<th>MILES</th>
<th>TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>morning</td>
<td>13 mi</td>
<td>20 mi</td>
</tr>
<tr>
<td>evening</td>
<td>21 mi</td>
<td>33 mi</td>
</tr>
</tbody>
</table>

**CONCLUSION:** The proposed freeway **WOULD provide relief** by eliminating congested freeway segments and reducing the duration of congested conditions.
Identification of the Preferred Alternative

Based on the alternatives screening process, environmental impacts assessment, and stakeholder input, ADOT, with concurrence from FHWA, identified the W59 Alternative as its Preferred Alternative in the Western Section and the E1 Alternative in the Eastern Section.

In reaching its determination, ADOT sought to balance its responsibilities to address regional mobility needs, while being fiscally and environmentally responsible and sensitive to local communities.

**Elements**

<table>
<thead>
<tr>
<th></th>
<th>W101</th>
<th>W71</th>
<th>W59</th>
<th>E1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total costs*</td>
<td>$1.72–$1.87 billion</td>
<td>$1.54 billion</td>
<td>$1.23 billion</td>
<td>$762 million</td>
</tr>
<tr>
<td>Total number of residential displacements</td>
<td>940–1334 displacements</td>
<td>847 displacements</td>
<td>774 displacements</td>
<td>138 displacements</td>
</tr>
<tr>
<td>Traffic operations</td>
<td>Provides direct connection to Loop 101 and better access to area west and north of study.</td>
<td>Provides traffic benefits when compared to the No-Action Alternative. Does not provide level of benefits as W59 or W101 Alternatives.</td>
<td>Shifts motorists from arterials to freeway for commuting trips. Provides best access to downtown. Maximizes performance of future SR 30 and Avondita/Elo Salado projects.</td>
<td>Provides a direct connection to Loop 102. Reduces pass-through traffic on SR 114 in the Community. Reduces traffic on Chandler Boulevard in Ahwatukee.</td>
</tr>
<tr>
<td>Regional support from Cities and Towns.</td>
<td>Not consistent with local plans.</td>
<td>Not consistent with local plans.</td>
<td>7 resolutions passed supporting an alignment near 58th Avenue and opposing Loop 101.</td>
<td>Consistent with local plans.</td>
</tr>
</tbody>
</table>

* Including right-of-way, construction, and design

**Preferred Alternative**