



# **Draft Tier 1 Environmental Impact Statement and Preliminary Section 4(f) Evaluation**

**Appendix E1, Conceptual Drawings**

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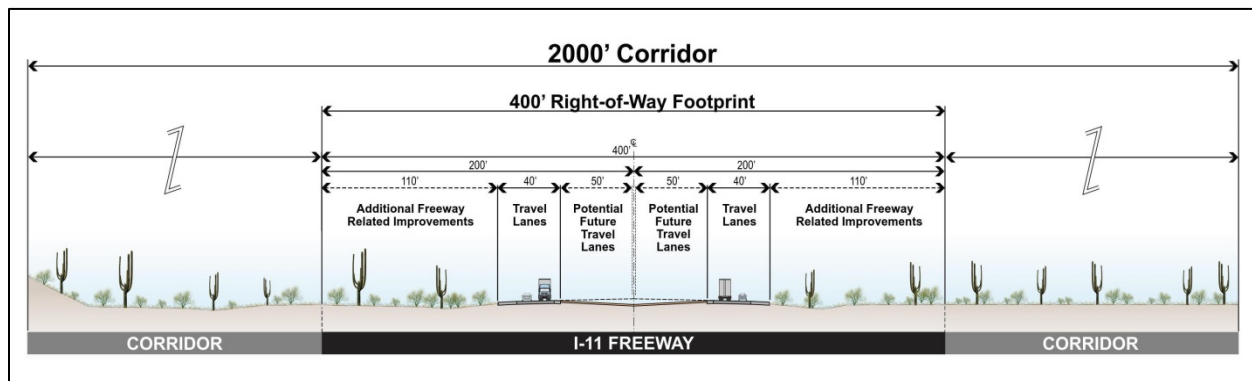
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1 This appendix contains typical cross sections developed to inform the analysis for each of the  
 2 Corridor Options that comprise the Build Corridor Alternatives (Purple, Green, and Orange). The  
 3 information assisted in the analysis to characterize potential impacts, which is provided in  
 4 **Chapter 3** (Affected Environment and Environmental Consequences). The Project Team  
 5 defined a threshold for level of service (LOS) on I-11. The LOS criteria are:

- 6 • Achieves LOS C or better on I-11 in rural areas
- 7 • Achieves LOS D or better on I-11 in urban areas (Tucson)

8 The number of lanes used in the Arizona Travel Demand Model was based on achieving the  
 9 LOS threshold. Generally, four lanes were needed to meet the LOS threshold for new corridors.  
 10 The specific number of lanes assumed in the travel demand model is shown on the following  
 11 cross sections.

12 Typical cross sections shown here are limited to at-grade concepts, although the analysis  
 13 documented in **Chapter 4** (Section 4f) looked at a broader range of alternatives in some  
 14 locations.



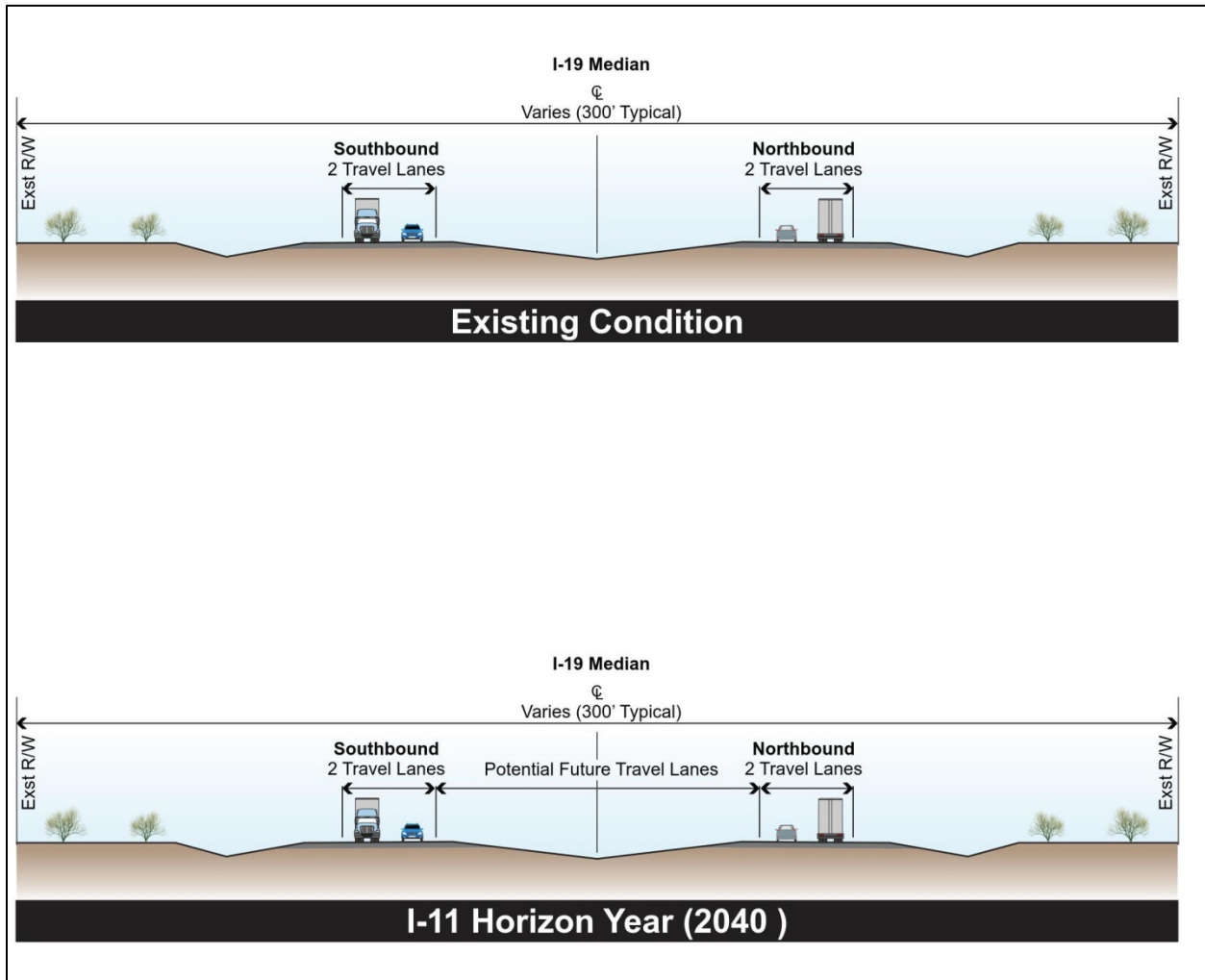
**Figure E1-1 Typical Cross Section**

15 **Additional Information:** The typical assumption for the Interstate 11 (I-11) corridor cross  
 16 section is shown in **Figure E1-1**. For the purposes of this Tier 1 Environmental Impact  
 17 Statement (EIS) analysis, it is assumed that an approximately 400-foot right-of-way (ROW)  
 18 would be located somewhere within the 2,000-foot-wide Build Corridor Alternative. Segments of  
 19 the facility could be implemented in a phased manner, initially as a 4-lane divided highway and  
 20 expanded as needed to accommodate additional travel lanes or other transportation and linear  
 21 facilities.

22 The typical cross section is assumed for:

- 23 • Corridor Options C, I, L, N, R, X (Purple Alternative)
- 24 • Corridor Options D, F, I, L, M, R, U (Green Alternative)
- 25 • Corridor Option S (Orange Alternative)

26 Possible variations from the typical cross section are described below.



**Figure E1-2 I-19, Nogales to Sahuarita**

- 1 **Additional Information:** Co-located with I-19 from State Route (SR) 189 to Sahuarita. I-19
- 2 north from Nogales is within an existing, generally 300-foot-wide ROW. The two-lane cross-
- 3 section is adequate to meet Level of Service (LOS) C in 2040. Future improvements are
- 4 assumed to occur within the current ROW. If needed, there is potential for additional future
- 5 travel lanes by widening to the median.
- 6 **All of Corridor Option A, included in All Build Alternatives;**
- 7 **Part of Corridor Option B (near Pima County line to Sahuarita, under Orange**
- 8 **Alternative); and**
- 9 **Part of Corridor Option D (near Pima County line to Sahuarita, under Green**
- 10 **Alternative).**

**Number of General Purpose Traffic Lanes**

Existing Condition – I-19 South of Ajo Way	No Build Alternative (2040) – I-19 South of Ajo Way	Corridor Option A (2040), part of options B and D
4	4	4

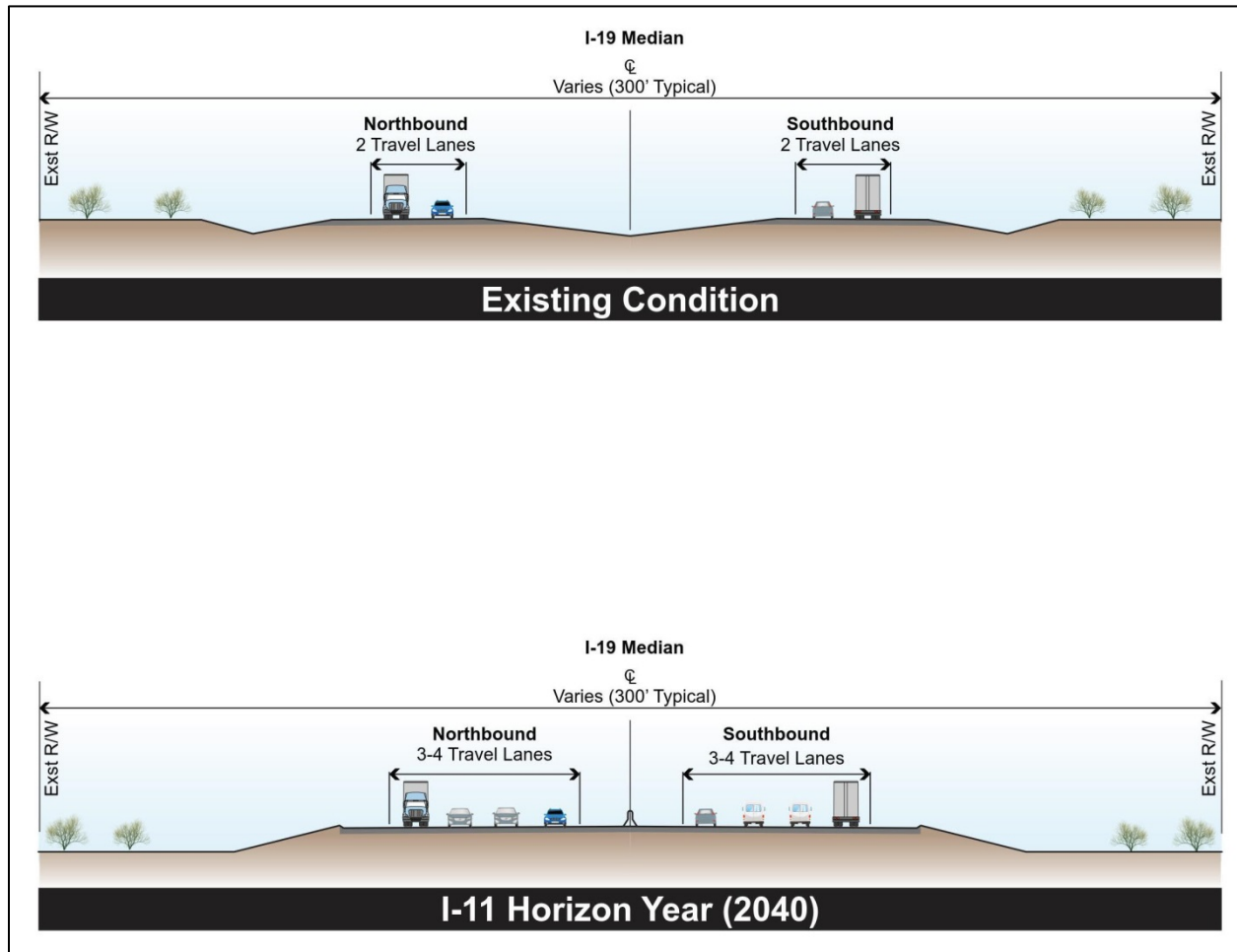


Figure E1-3 I-19, Sahuarita to I-10

- 1 **Additional Information:** Co-located with I-19 from Sahuarita to I-10/I-19 interchange, which is
- 2 within an existing, generally 300-foot ROW. It is estimated that an additional 1 to 2 lanes would
- 3 be needed in each direction to meet LOS D in 2040. Future improvements are assumed to
- 4 occur within the current ROW.
- 5 **Part of Corridor Option B (I-19, north of El Toro Road to I-10/I-19 interchange)**
- 6 **under Orange Alternative)**

**Number of General Purpose Traffic Lanes**

Existing Condition – I-19 South of Ajo Way	No Build Alternative (2040) – I-19 South of Ajo Way	Orange Build Corridor Alternative – Option B (2040)
4	4	6-8 – Expand as needed within existing ROW

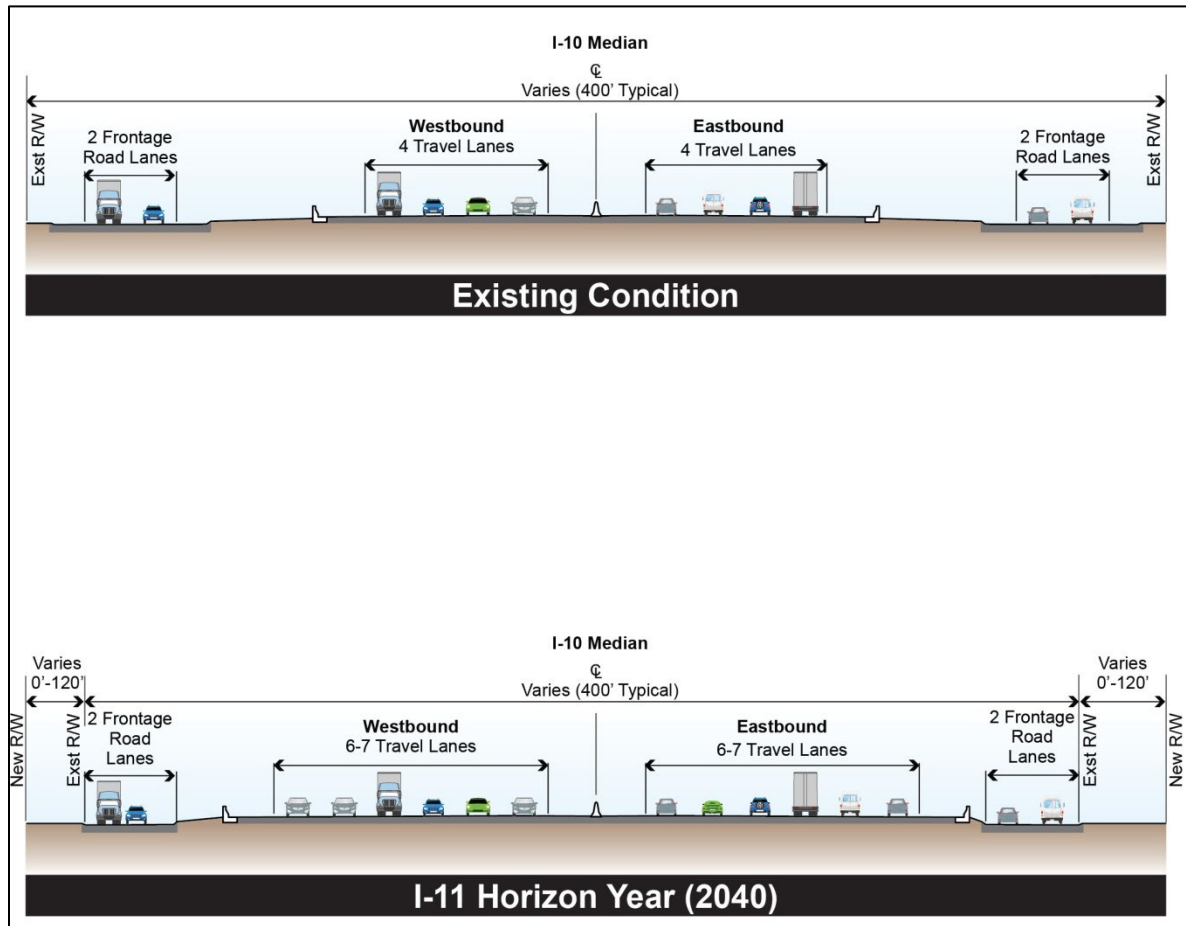


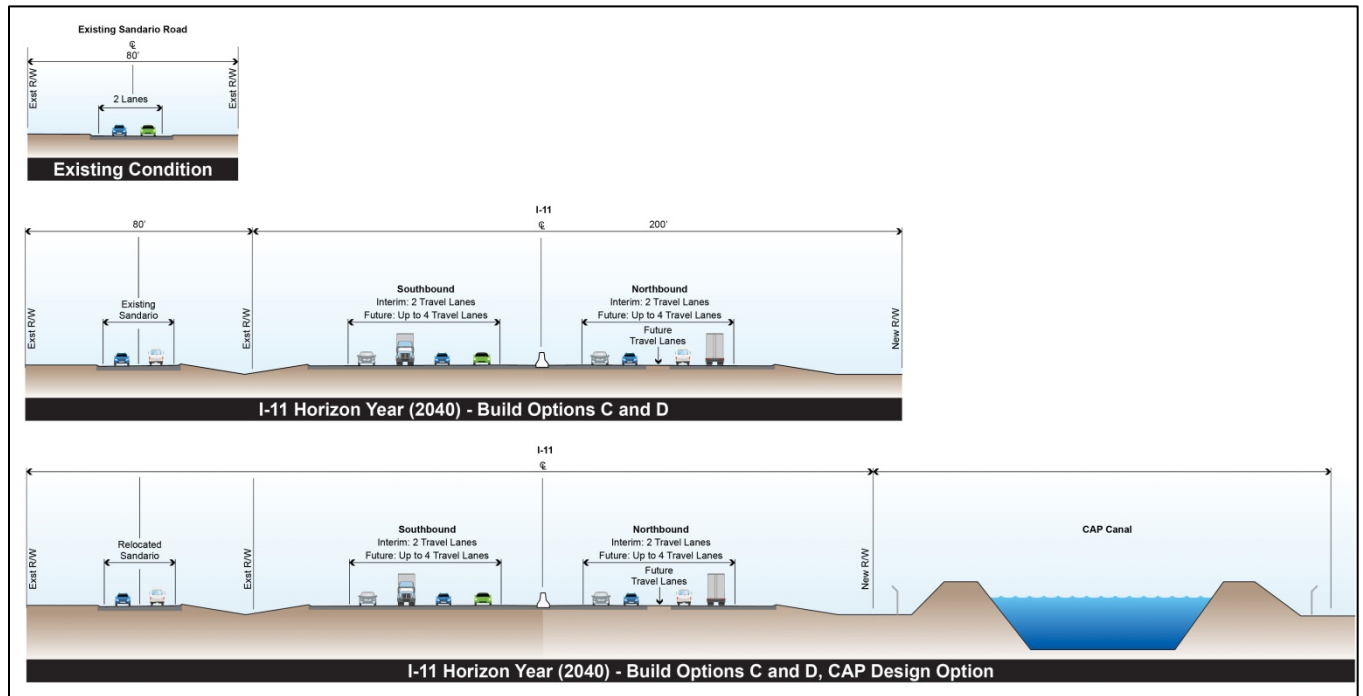
Figure E1-4 I-10, I-19 to Prince Road

1 **Additional Information:** I-10 through central Tucson is mostly elevated with grade-separated  
 2 frontage roads and crossings, and multiple level sound walls and landscaping within the  
 3 400-foot ROW. To accommodate 2040 traffic demands, the Orange Alternative would expand  
 4 I-10 from 8 lanes to 12 to 14 lanes from the I-19 interchange to Prince Road (an additional 2 to  
 5 3 lanes in each direction). Where possible, additional travel lanes would be added to the center  
 6 of the corridor, or added to the outside of the mainline corridor by extending the noise walls  
 7 further out and narrowing the space between the interstate and the frontage roads. A variety of  
 8 solutions to increasing capacity were considered, and an envelope for potential ROW  
 9 requirements was identified to encompass a range of solutions in this area. For the purposes of  
 10 the Tier 1 EIS analysis, the area of potential ROW needs includes an estimated 120 feet of  
 11 additional ROW. The 120 feet could be on either side of the existing I-10 ROW, all on the east  
 12 side of I-10, or all on the west side of I-10.

13 **Part of Corridor Option B (I-10, I-10/I-19 interchange to Prince Road) under Orange**  
 14 **Alternative**

**Number of General Purpose Traffic Lanes**

Existing Condition – I-10 I-19 to Prince Road	No Build Alternative (2040) – I-10 I-19 to Prince Road	Orange Alternative – Option B (2040)
8	8	12-14 – Expand as needed



**Figure E1-5 Sandario Road**

- 1 **Additional Information:** Along Options C and D, part of the I-11 corridor is co-located with
- 2 Sandario Road and would cross the Tucson Mitigation Corridor (TMC) along its western edge.
- 3 Where these corridor options cross the TMC, it is assumed that the I-11 facility would utilize a
- 4 narrower ROW of 300 feet to the immediate east of the 80-foot Sandario Road ROW, which
- 5 would allow for two travel lanes in each direction as well as space to accommodate future travel
- 6 lanes as needed.
  
- 7 Coordination with the Bureau of Reclamation for the Preliminary Draft Section 4(f) Evaluation
- 8 triggered consideration of additional Design Option across the TMC. The CAP Design Option
- 9 closely parallels the CAP canal on its downslope (western) side through the TMC. Through the
- 10 TMC, Sandario would be relocated next to I-11 and both would be immediately west of the
- 11 canal.
  
- 12 **Part of Corridor Options C (Purple Alternative) and D (Green Alternative) where**
- 13 **I-11 would Cross the Tucson Mitigation Corridor in Pima County.**

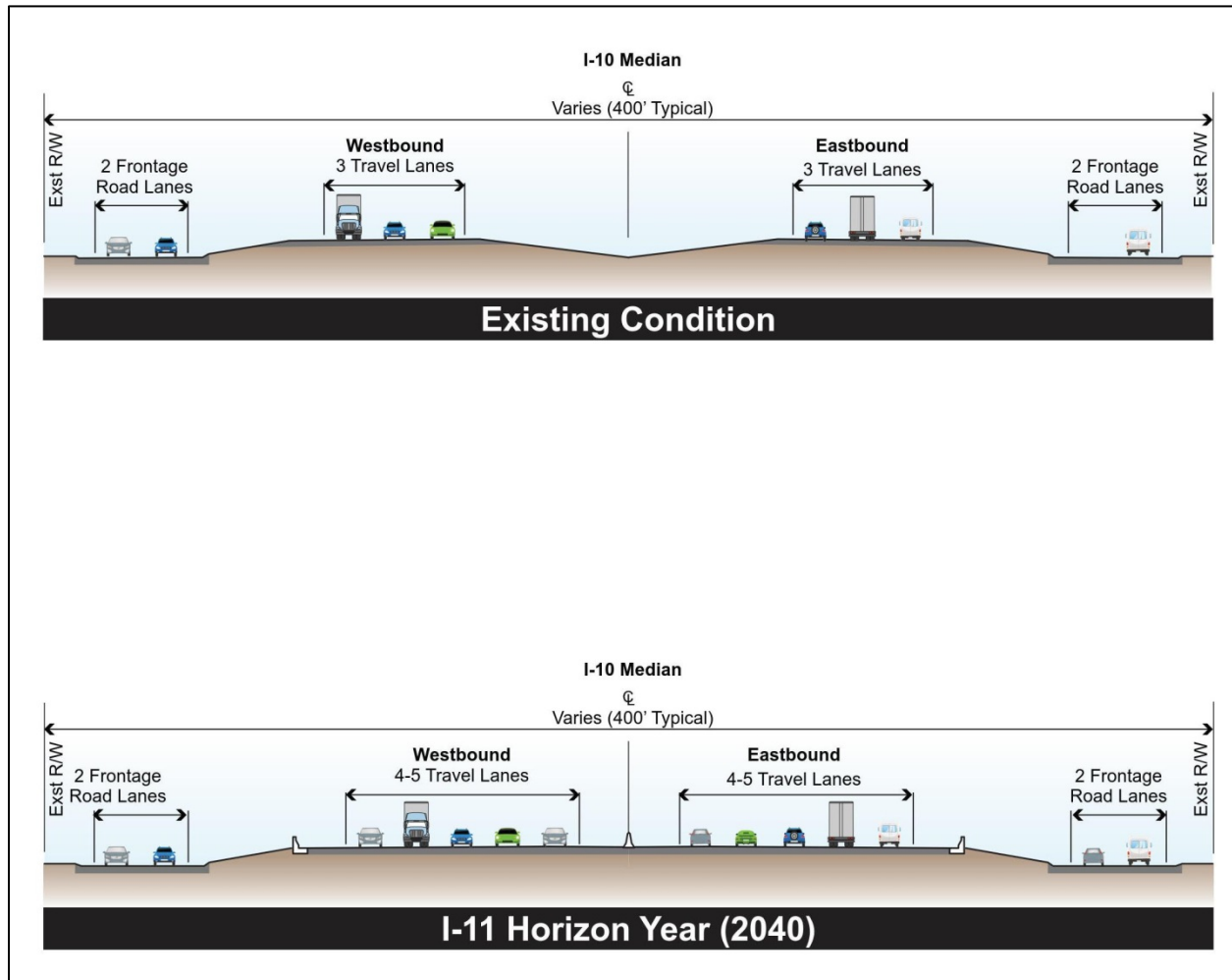


Figure E1-6 I-10, Prince Road to Pima/Pinal County Line

1 **Additional Information:** I-10 through central Tucson is mostly elevated with grade-separated  
 2 frontage roads and crossings, and multiple level sound walls and landscaping within the  
 3 400-foot of ROW. Between Prince Road and the Pima/Pinal county line, up to 2 lanes per  
 4 direction may be needed to meet LOS D in 2040. Additional travel lanes would be added to the  
 5 center of the corridor, or added to the outside of the mainline corridor by extending the noise  
 6 walls farther out and narrowing the space between the interstate and the frontage roads. For the  
 7 purposes of this Tier 1 EIS analysis, it is assumed that improvements could occur within the  
 8 existing ROW.

9 **Part of Corridor Option B under Orange Alternative Number of General Purpose**  
 10 **Traffic Lanes**

Existing Condition – I-10 Prince to Pima/Pinal County Line	No Build Alternative (2040) – I-10 Prince to Pima/Pinal County Line	Orange Alternative – Option B (2040)
6	8 – Prince Rd to Ina Road 6 – Ina Rd to Tortolita Road	8-10 – Expand as needed within existing ROW



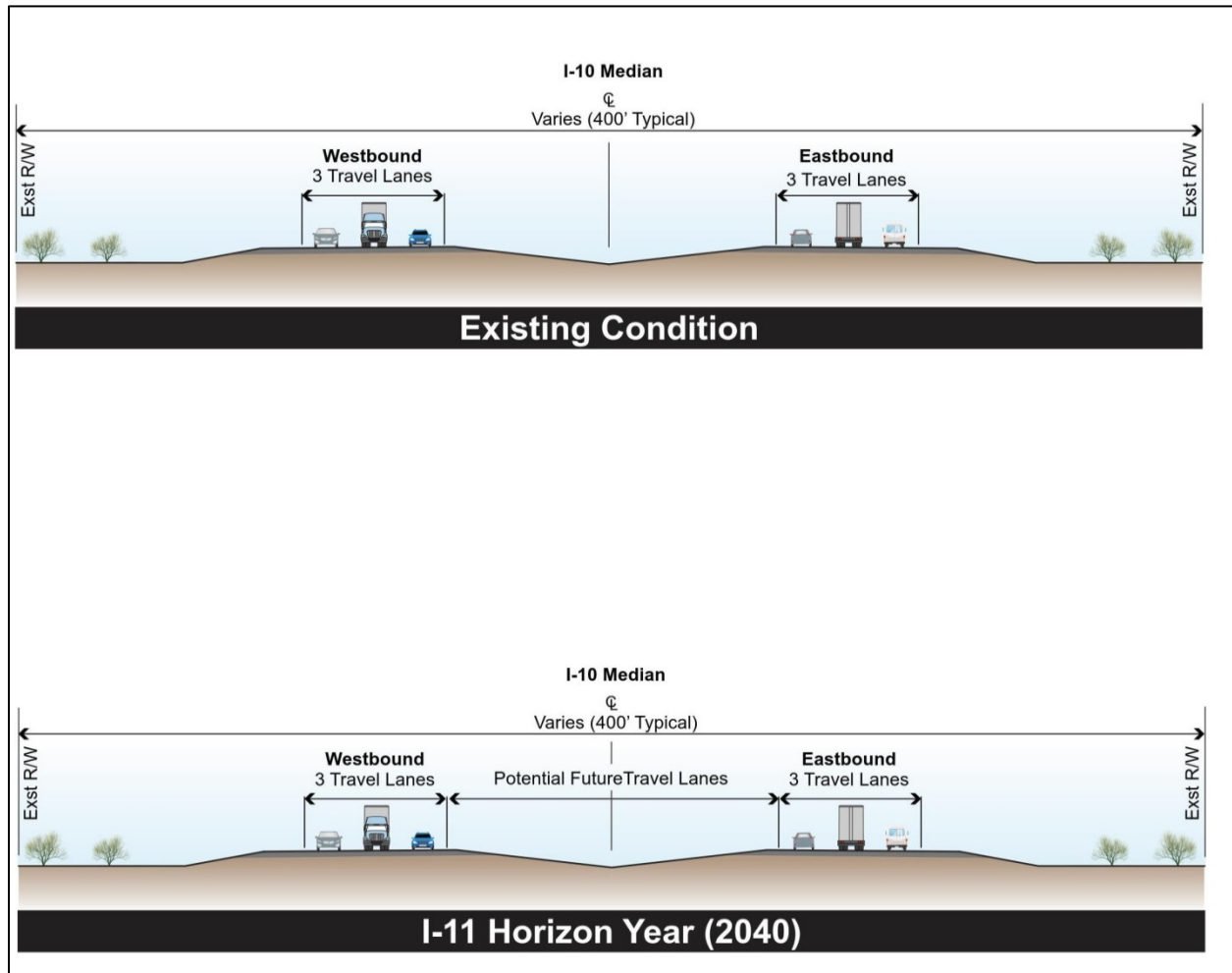


Figure E1-7 I-10, Pima/Pinal County Line to I-8

- 1 **Additional Information:** The I-11 corridor would be co-located with I-10 in this area, and the 6-
- 2 lane cross section is adequate to meet LOS C in 2040. If needed, there is potential for additional
- 3 future travel lanes by widening to the median.
  
- 4 **Corridor Option G under Purple and Orange Alternatives**

**Number of General Purpose Traffic Lanes**

Existing Condition – I-10 Pinal County	No Build Alternative (2040) – I-10 Pinal County	Purple and Orange Alternatives – Option G (2040)
4-6*	6	6

\* Segment from Picacho to Sunshine Blvd is currently 4 lanes.

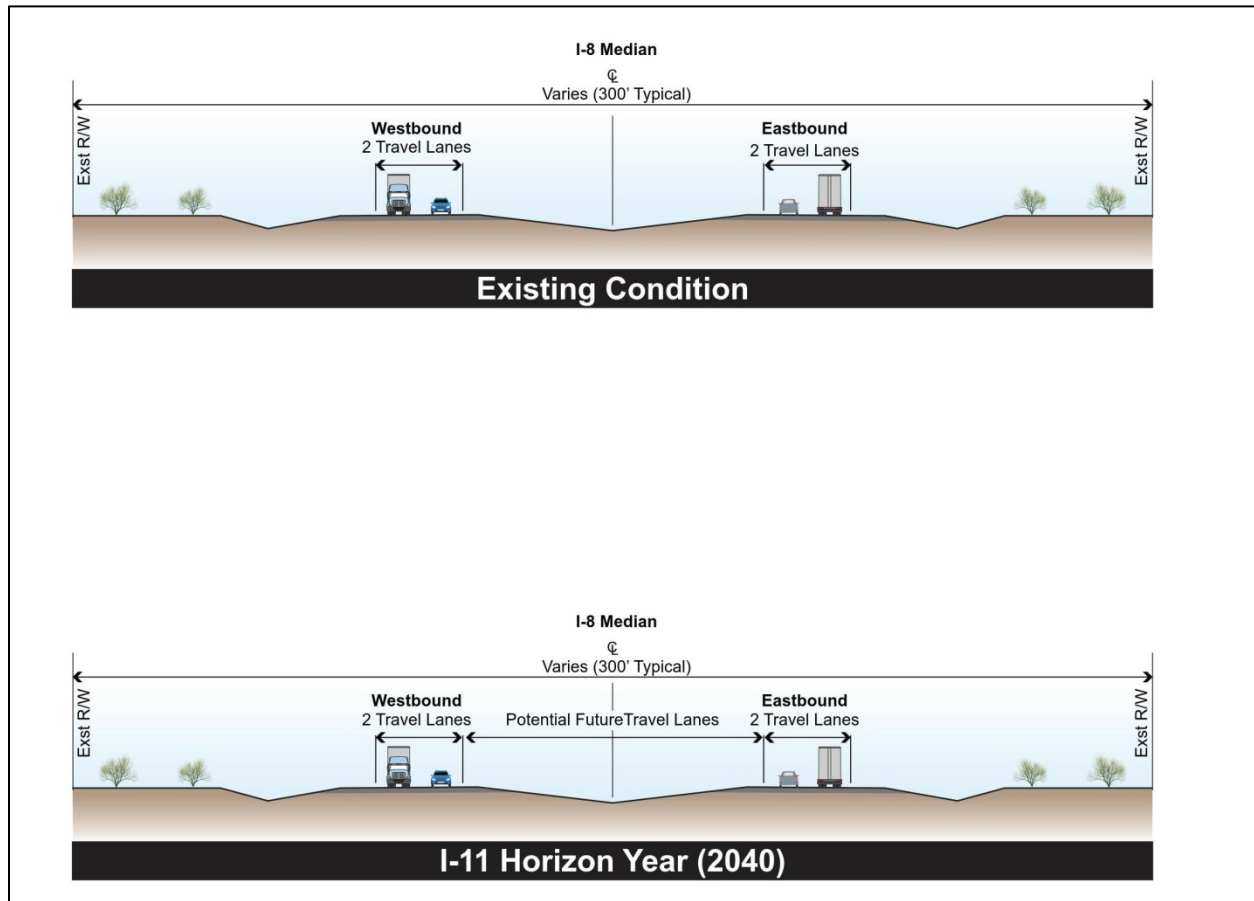


Figure E1-8 I-8, I-10 to Gila Bend

- 1 **Additional Information:** The I-11 corridor would be co-located with I-8 in this area, and the
- 2 4-lane cross section is adequate to meet LOS C in 2040. If needed, there is potential for
- 3 additional future travel lanes by widening to the median, within the existing ROW.

4 **Corridor Options H and K, and part of Corridor Option G under Orange Alternative**

**Number of General Purpose Traffic Lanes**

Existing Condition – I-8	No Build Alternative (2040) – I-8	Orange Alternative – Option H/K/ partial G (2040)
4	4	4

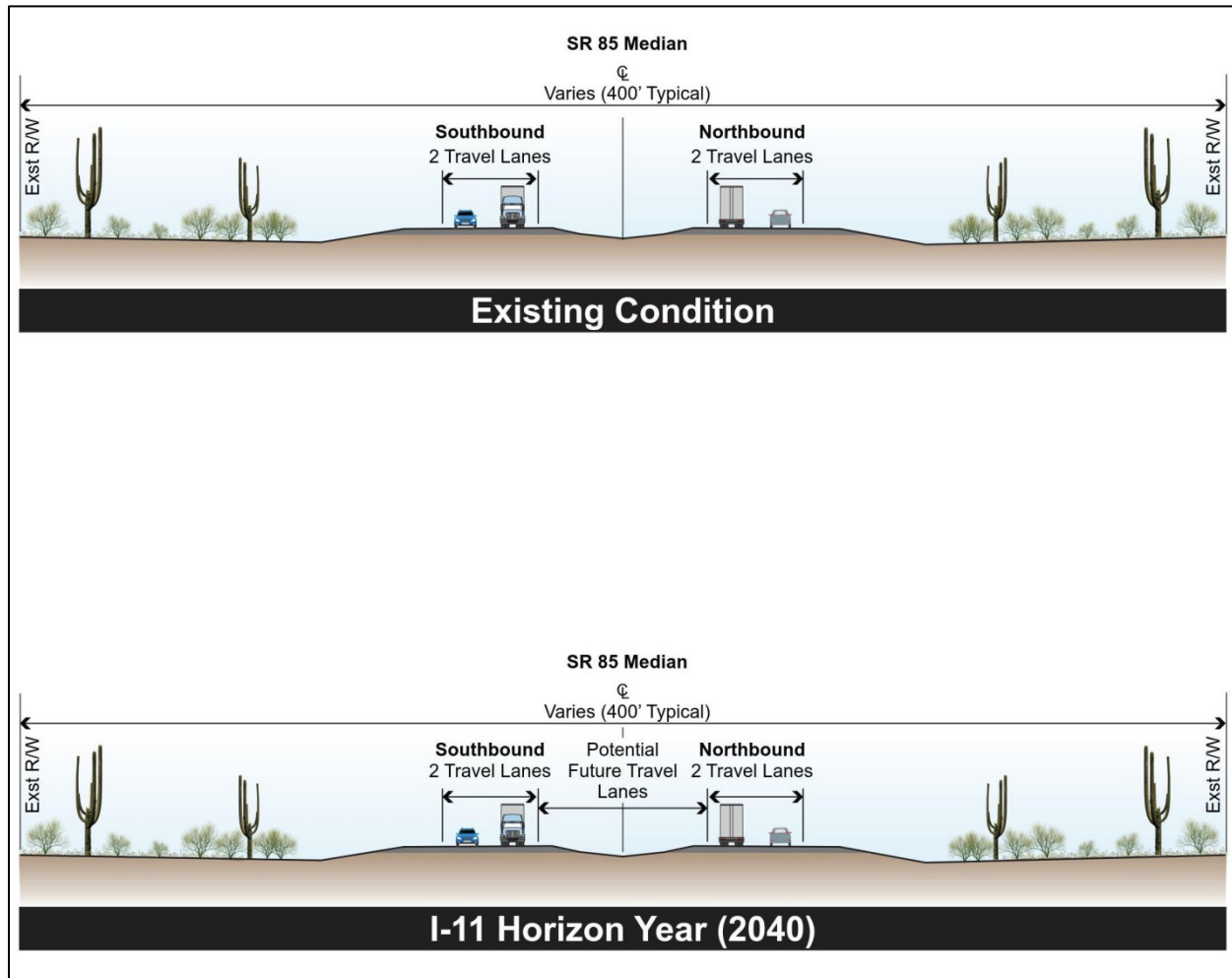
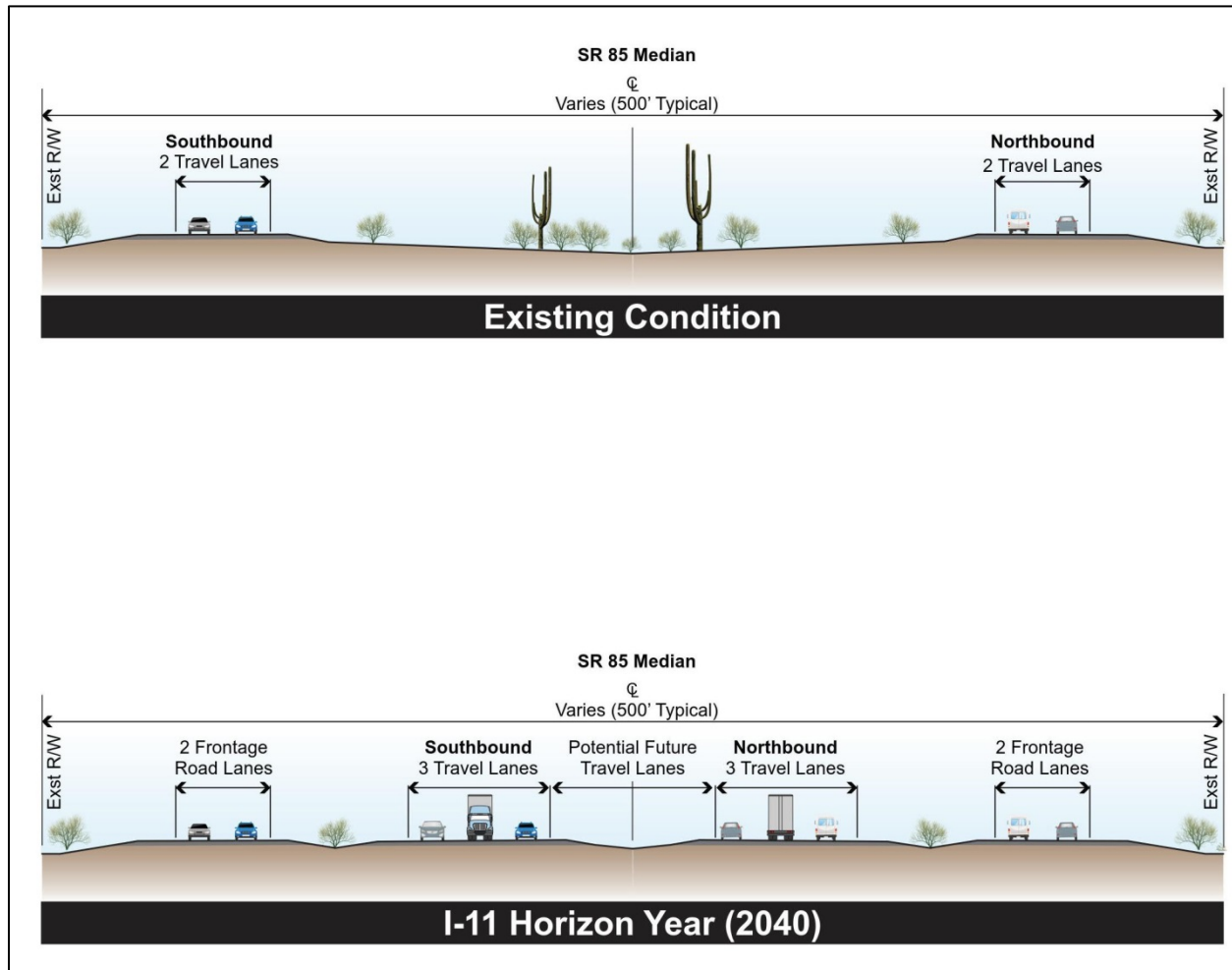


Figure E1-9 SR 85, I-8 to Gila River

- 1 **Additional Information:** The I-11 corridor would be co-located with SR 85 in this area, which is
- 2 a 4-lane divided highway. The existing ROW south of the Gila River is generally 400 feet. This
- 3 corridor is already planned to be a fully access-controlled freeway, and is therefore laid out
- 4 layer in additional lanes and interchanges within the existing ROW to meet LOS C in 2040.
  
- 5 **Corridor Options Q1 and Q2 under Orange Alternative; and**
- 6 **Parts of Corridor Option K (I-8 to Option Q1) under Orange Alternative.**

**Number of General Purpose Traffic Lanes**

Existing Condition – SR 85 I-8 to Gila River	No Build Alternative (2040) – SR 85 I-8 to Gila River	Orange Alternative – Options K, Q1, and Q2 (2040)
4	4	4



**Figure E1-10 SR 85, Gila River to I-10**

1 **Additional Information:** The I-11 corridor would be co-located with SR 85 in this area, which is  
 2 a 4-lane divided highway. North of the Gila River, the existing ROW is approximately 500 feet  
 3 and in this area, I-11 would be constructed in the current median, converting the existing travel  
 4 lanes into a frontage road system to accommodate local access needs. If needed, there is  
 5 potential for additional future travel lanes by widening to the median, within the existing ROW.

6 **Part of Corridor Option Q3 (Q2 to I-10) under Orange and Green Alternatives**

**Number of General Purpose Traffic Lanes**

Existing Condition – SR 85 Gila River to I-10	No Build Alternative (2040) – SR 85 Gila River to I-10	Orange Alternative – Option Q1 (2040)
4	4	6 – Expand as needed within existing ROW

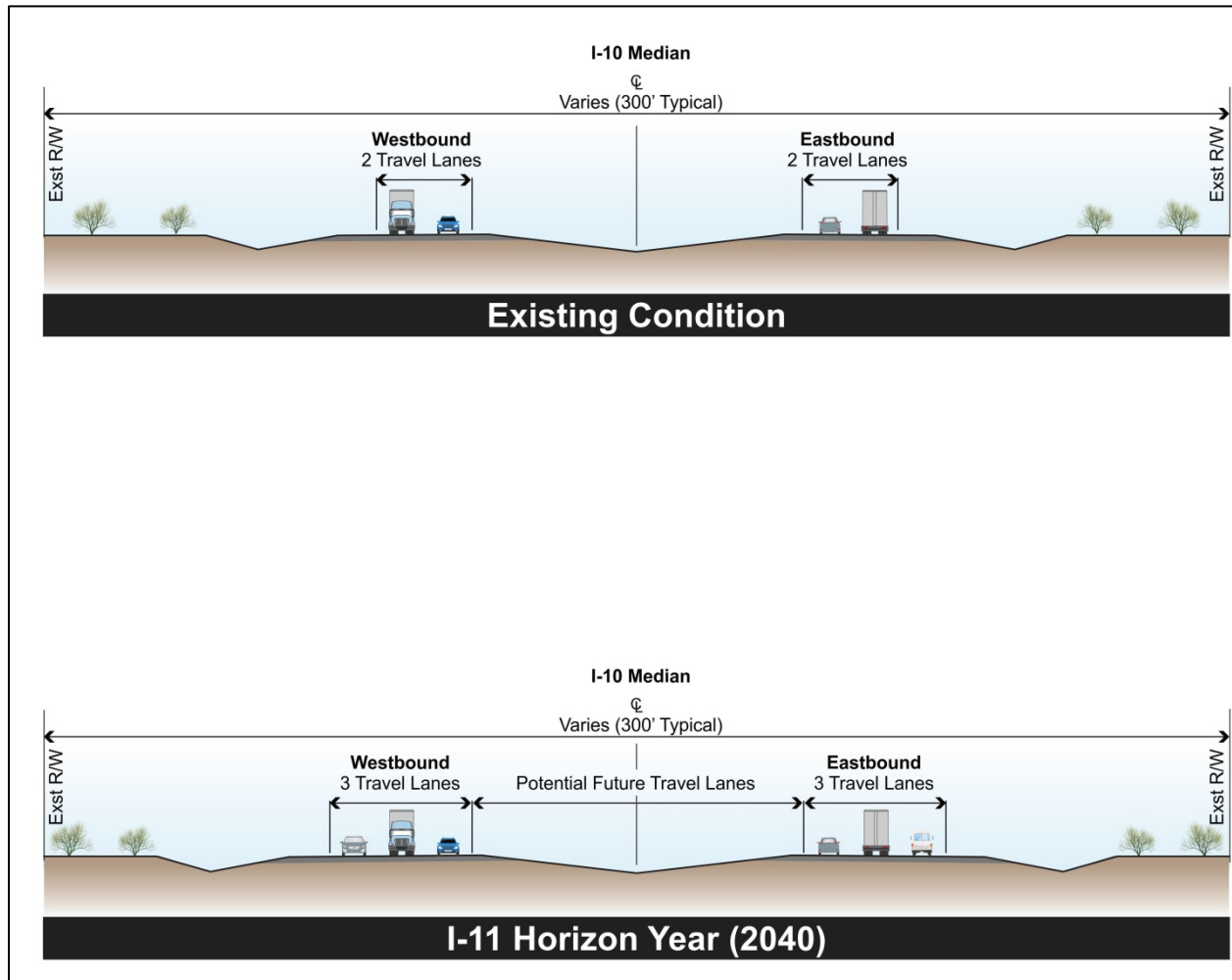


Figure E1-11 I-10, SR 85 to 355th Avenue

- 1 **Additional Information:** If I-11 corridor is co-located with I-10 in Maricopa County, one travel
- 2 lane would need to be added in each direction to meet LOS C in 2040. Future improvements
- 3 are assumed to occur within the current 300-foot ROW. If needed, there is potential for
- 4 additional future travel lanes by widening to the median, within the existing ROW.

5 **Part of Corridor Option Q3 (SR 85 to Option S) under Orange Alternative**

**Number of General Purpose Traffic Lanes**

Existing Condition – I-10 SR 85 to 355 <sup>th</sup> Ave	No Build Alternative (2040) – I-10 SR 85 to 355 <sup>th</sup> Ave	Orange Alternative – Option Q3 (2040)
4	4	6 - Expand as needed within existing ROW



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