



1 **3.9 Visual and Aesthetics**

2 **3.9.1 Summary of Draft Tier 1 EIS**

3 Visual impacts were assessed in accordance with FHWA’s *Guidelines for the Visual Impact*
4 *Assessment of Highway Projects* (FHWA 2015) using an Abbreviated Visual Impact
5 Assessment. The visual effects analysis of the Build Corridor Alternatives considered impacts
6 within the area of visual effect, defined as 5 miles from the edge of any given Build Corridor
7 Alternative. A detailed discussion of the Visual Impact Assessment methodology is included in
8 Draft Tier 1 EIS **Section 3.9.2** (Methodology).

9 The visual resources inventory and the assessment of potential impacts included the evaluation
10 of visual character, visual quality, viewer sensitivity, and visual contrast levels of the proposed
11 project. BLM Visual Resource Management (VRM) classifications and NPS resource
12 management objectives also were included in the inventory to assess conformance where
13 applicable.

14 Fifteen distinct landscape units and associated representative viewpoints were defined within
15 the area of visual effects. Two distinct groups of viewers were evaluated within the area of
16 visual effect: neighbors and travelers, which are further subdivided to help establish viewer
17 preferences and awareness to changes in visual resources.

18 **3.9.1.1 Affected Environment**

19 ***Nogales to Sahuarita*** includes urban development around the Tucson metropolitan area and
20 smaller urban and suburban development concentrations in and around Nogales, Tumacácori,
21 Tubac, Amado, Green Valley, and Sahuarita and large-scale industrial uses along I-19 and I-10.
22 These areas are surrounded by Sonoran Desert Mountain ranges. Natural areas outside of
23 developed landscape areas include vegetation communities that are typically either arid or
24 natural appearing grazing land of creosote, tarbush, and other desert scrub.

25 ***Sahuarita to Marana*** has active agricultural fields near unimproved roads, distribution lines,
26 and rural residences. This area is fairly intact with a low level of encroachment with some visual
27 interest associated with the lower Sonoran Desert and active agricultural landscape. The scale
28 of rural residential development is less noticeable than more densely developed areas; the
29 overall unit is cohesive with the surrounding agricultural landscape.

30 ***Marana to Casa Grande*** has rural residences but they are not the primary land use in this
31 landscape setting. Agricultural fields generally lack striking visual patterns, or landforms, and
32 built features are mostly limited to canals, roads, and small structures. Vegetative cover from
33 crops is seasonal. Views in this area are typically open and unrestricted. The overall rating of
34 visual quality for this area is low to moderate, primarily due to the encroachment of
35 development.

36 ***Casa Grande to Buckeye*** is characterized by agricultural land uses such as dryland and
37 irrigated agriculture in the valleys near Casa Grande, western Pinal County, Buckeye, and along
38 the Gila River, with development concentrations around Casa Grande, Gila Bend, and Buckeye.



1 **Buckeye to Wickenburg** is the least-developed area within the area of visual effect with large
2 undeveloped areas, although some rural and suburban residences are near I-10 and Sun Valley
3 Parkway.

4 **3.9.1.2 Visual Impacts**

5 In general, the Build Corridor Alternatives would have less visual change in areas with existing
6 transportation corridors or other development compared to areas on new alignments or with less
7 existing development. The primary exception to this is in downtown Tucson, where the range of
8 future cross sections necessary to provide capacity improvements along I-10 could include
9 right-of-way expansion or an elevated facility. Either option, or a combination thereof, would
10 expose the adjacent historic districts to impacted foreground views. A tunnel or depressed
11 facility would be less visible to adjacent historic districts.

12 All Build Corridor Alternatives would have potential light pollution effects and incrementally
13 increase skyglow by introducing new sources of light that could impact recreational stargazing,
14 particularly in designated International Dark-Sky Association locations.

15 To address portions of the Build Corridor Alternatives that cross BLM-administered lands, the
16 Visual Impact Assessment evaluates the compatibility of I-11 to applicable BLM VRM
17 classifications to determine conformance to adopted policies. BLM VRM classifications, ranging
18 from Class I to Class IV, and their associated objectives define the levels of acceptable visual
19 change (contrast) allowed on BLM-administered land. BLM designates these classifications
20 based in part on the inventoried scenic values and other land use allocations during the
21 resource management planning process. **Table 3.9-1** of the Draft Tier 1 EIS describes the
22 management objectives associated with each BLM VRM Class designation, per BLM Manual
23 H-8410-1 (BLM 1986).

24 BLM Class I lands are limited to wildernesses. All Class I lands that fall within the Orange
25 Alternative are along I-8, where no new right-of-way would be required. Most of the Sonoran
26 Desert National Monument is designated as VRM Class II, as well as some areas between
27 Buckeye and Wickenburg. Other areas, including the BLM-designated multi-use corridor, are
28 managed as VRM Class III within the Vulture Mine RMZ and as Class IV outside of the Vulture
29 Mine RMZ. The majority of the BLM-administered lands within the Build Corridor Alternatives
30 are allocated to VRM Class III. Management objectives for VRM Class III lands include partially
31 retaining their existing character and allowing for moderate change to the subject landscape
32 (BLM 2012). Hence, BLM is unlikely to require amendment to their Resource Management Plan
33 in Class III areas.

34 Saguaro National Park West and Tucson Mountain Park lie within the area of visual effect west
35 of Tucson, and the Build Corridor Alternatives could be visible from elevated and unobstructed
36 locations. The magnitude of visual impact would vary depending on the viewer's location within
37 the park and the time of the visit (daytime or nighttime).

38 **3.9.2 Summary of Changes Since Draft Tier 1 EIS**

39 BLM, NPS, and Reclamation provided feedback on visual resources. BLM requested additional
40 discussion regarding impacts to the Ironwood Forest National Monument as well as clarification
41 of the impacts to BLM VRM classifications. Impacts to the Ironwood Forest National Monument



1 are addressed in **Section 3.4** (Recreation) of the Draft Tier 1 EIS and in **Section 3.9.4** and
2 **Section 3.9.5** of this Final Tier 1 EIS. NPS requested additional discussion regarding mitigation
3 measures for anticipated impacts to Saguaro National Park and requested simulations of the
4 corridor. Reclamation noted concerns regarding increase in skyglow from the introduction of
5 new light sources and development due to the new transportation corridor.

6 The public expressed concerns about visual impacts to Saguaro National Park, light pollution
7 and impacts to dark skies, impacts to rural character and avoiding urban sprawl, and impacts to
8 the Kitt Peak Observatory. The Draft Tier 1 EIS stated that light sources from new segments of
9 highway and future developments could create light pollution that would impact wildlife behavior
10 and would obstruct individual animals from accessing and departing Tucson Mountain Park and
11 Saguaro National Park from the west. The segments of the Build Corridor Alternatives that are a
12 new highway on a new alignment would increase skyglow and impact dark skies if no mitigation
13 strategies are implemented. Site-specific roadway and lighting designs are not available at the
14 Tier 1 stage. Analyses of potential effects of roadway lighting designs are anticipated in the Tier
15 2 analysis. In addition, mitigation strategies will be developed to minimize light pollution in
16 sensitive areas. Pima County, the Town of Marana, the City of Tucson, and the Town of
17 Sahuarita have local dark skies ordinances regulating outdoor lighting fixtures to minimize light
18 pollution at night. ADOT would comply with applicable local ordinances.

19 The Kitt Peak Observatory is located approximately 40 miles southwest of Tucson and 15 miles
20 outside of the area of visual effect and would not likely experience impacts from the proposed
21 project.

22 In their comments on the Draft Tier 1 EIS, BLM requested an inventory of BLM VRM
23 classifications within the Build Corridor Alternatives. **Table 3.9-1** summarizes acres of VRM
24 classes within the Build Corridor Alternatives.

25 **Table 3.9-1. Acreage Summary of BLM VRM Classes in the 2,000-foot-wide**
26 **Corridors of the Purple, Green, and Orange Alternatives**

VRM Classification	Purple Alternative	Green Alternative	Orange Alternative
Class I	0	0	456 ^a
Class II	0	0	402
Class III	2,484	2,639 ^b	7,318 ^b
Class IV	3,402	7,738 ^b	4,669 ^b

27 Source: BLM VRM dataset (2016), ASLD ALRIS dataset (2014).

28 ^a Entirely along I-8, where no additional right-of-way would be required.

29 ^b Portions along I-8 and/or SR 85, where no additional right-of-way would be required.

30
31 The list of designated international dark sky places was updated. In southern Arizona, three
32 places are designated by International Dark-Sky Association:

- 33 • Tumacácori National Historical Park is adjacent to the Orange Alternative where I-11 is co-
34 located with I-19.
- 35 • Oracle State Park, at its closest point to a Build Corridor Alternative, is approximately
36 30 miles east of the Orange Alternative, where I-11 is co-located with I-10.



- 1 • Kartchner Caverns State Park, at its closest point to a Build Corridor Alternative, is
2 approximately 37 miles east of the Orange Alternative, where I-11 is co-located with I-10.

3 3.9.3 No Build Alternative

4 The No Build Alternative would not substantially change the visual character or quality in the
5 Study Area because it would not involve construction or modification to accommodate additional
6 infrastructure (e.g., additional lanes, overpasses, median modifications) associated with I-11.
7 Over time, the visual character and quality in the area of visual effect would change due to
8 continued urbanization of the Study Area and construction of the programmed projects that
9 define the No Build Alternative. Urban expansion could encroach on portions of the area of
10 visual effect that are currently rural or undeveloped, leading to a more urbanized character.
11 Anticipated changes would have beneficial effects and adverse impacts on visual quality. The
12 visual character and visual quality of new development would depend on what is constructed.
13 Future development may or may not be harmonious with the existing visual elements and
14 patterns, and community members may or may not object to the changes.

15 3.9.4 Recommended Alternative

16 This section provides a summary of potential effects on visual resources associated with the
17 Recommended Alternative. Detailed discussion of the impacts is presented in **Appendix E9**
18 (Visual Effects on Selected Viewpoints and Landscapes).

- 19 • **Nogales to Sahuarita.** The Recommended Alternative would be co-located with I-19 and
20 would not require additional lanes. Visual changes to the landscape as a result of I-11 would
21 not be readily apparent.
- 22 • **Sahuarita to Marana.** The Recommended Alternative would introduce changes to the
23 landscape character. Visitors to Saguaro National Park West and Tucson Mountain Park
24 (trails) would be highly sensitive to visual changes in the landscape. Depending on the
25 location, these visitors would have middleground views of the corridor. The Recommended
26 Alternative would be more apparent at night than during the daytime where vehicle and
27 roadway lighting are visible. North of the Tucson Mitigation Corridor, the Recommended
28 Alternative would be visible to adjacent, low-density residential development.
- 29 • **Marana to Casa Grande.** The Recommended Alternative would introduce changes to the
30 landscape character. Residential viewers of the rural neighborhoods in the Red Rock area
31 would have partially obstructed middleground views. The Ironwood Forest National
32 Monument is approximately 1 mile away from the Recommended Alternative at its closest
33 point and would have views of the Recommended Alternative in the foreground and
34 middleground (depending on location). I-11 would be apparent at night where vehicle and
35 roadway lighting are visible.
- 36 • **Casa Grande to Buckeye.** The Recommended Alternative would introduce changes to the
37 landscape character in surrounding agricultural and low-density residential areas. The
38 Recommended Alternative passes through open farmland where new improvements would
39 not follow an existing roadway.



1 • **Buckeye to Wickenburg.** This area is largely undeveloped and there are no highways or
2 other industrial-scale facilities. The Recommended Alternative would introduce changes to
3 the landscape character. It would be visible to recreational travelers along Aguila Road.
4 Visitors to the Vulture Mine RMZ and the off-road racecourse would see I-11 in their
5 foreground and middleground views, depending on location. Some viewpoints in Vulture
6 Mine RMZ would not have views of I-11 due to distance, intervening terrain, and vegetation
7 screening. The Vista Royale neighborhood near Wickenburg is approximately 0.25 mile
8 away and would have foreground and middleground views of I-11 at high elevations.

9 The Recommended Alternative would incrementally increase skyglow, particularly in areas on
10 new alignments where no road currently exists, but would not be expected to substantially
11 increase glare, light trespass, or clutter.

12 The Recommended Alternative would not cross any BLM VRM Class I or II land. **Table 3.9-2**
13 summarizes the BLM VRM classes within the Recommended and Preferred Alternatives.

14 **Table 3.9-2. Acreage Summary of BLM VRM Classes in the 2,000-foot-wide**
15 **Corridors of the Recommended and Preferred Alternatives**

VRM Classification	Recommended Alternative	Preferred Alternative with West Option in Pima County	Preferred Alternative with East Option in Pima County
Class I	0	0	0
Class II	0	0	0
Class III	2,988	3,097	2,568
Class IV	3,495	7,583	

16 Source: BLM VRM dataset (2016), ASLD ALRIS dataset (2014).

17 3.9.5 Preferred Alternative

18 This section provides a summary of potential effects on visual resources associated with the
19 Preferred Alternative. Detailed discussion of the impacts is presented in **Appendix E9** (Visual
20 Effects on Selected Viewpoints and Landscapes).

21 • **Nogales to Sahuarita.** Impacts of the Preferred Alternative to visual resources would be the
22 same as the Recommend Alternative.

23 • **Sahuarita to Marana.** Impacts of the Preferred Alternative with west option in Pima County
24 would generally be the same as the Recommended Alternative. The Preferred Alternative
25 with east option in Pima County would not be noticeable to motorists and the majority of the
26 neighbors because it is co-located with I-10 and the character of the landscape would
27 remain the same. The primary exception to this is in downtown Tucson, where the range of
28 future cross sections necessary to provide capacity improvements along I-10 could include
29 right-of-way expansion, an elevated facility, or depressed facility. The right-of-way
30 expansion or elevated facility options, or a combination thereof, would expose the adjacent
31 historic districts to impacted foreground views.



- 1 • **Marana to Casa Grande.** Impacts for the Preferred Alternative with west option in Pima
2 County would be the same as the Recommended Alternative, except in the vicinity of the
3 I-10 Connector. The southeast corner of Picacho Peak State Park is approximately 2 miles
4 away from where the east and west options converge at Park Link Drive. From high
5 elevations in the park, the west option may be visible in the middleground. The east option,
6 where it ends at Park Link Drive, would not be evident because it is co-located with I-10 and
7 no additional lanes are needed here. The Preferred Alternative north of the I-10 Connector
8 would be visible from the park. In addition, the Preferred Alternative is farther away from the
9 Ironwood Forest National Monument than the Recommended Alternative in this area. The
10 Preferred Alternative is approximately 1.6 miles away from the Ironwood Forest National
11 Monument, with riparian vegetation obstructing views of the corridor.
- 12 • **Casa Grande to Buckeye.** The Preferred Alternative would introduce changes to the
13 landscape character in the agricultural and low-density residential areas in western Pinal
14 County. The Preferred Alternative would be visible from the Sonoran Desert National
15 Monument. At this location the Preferred Alternative follows a BLM utility corridor adjacent to
16 the Sonoran Desert National Monument where existing modifications to the landscape
17 include unimproved roads and a utility corridor containing two high-voltage transmission
18 lines and several pipelines. The Preferred Alternative is consistent with the landscape where
19 it is co-located with SR 85 and I-10.
- 20 • **Buckeye to Wickenburg.** Impacts to visual resources north of I-10 in western Maricopa
21 County would generally be the same as the Recommended Alternative, except near
22 Wickenburg. The Preferred Alternative is approximately 1 mile farther away from the Vista
23 Royale neighborhood than the Recommended Alternative. The neighborhood would have
24 middleground views of the Preferred Alternative at higher elevations and where
25 unobstructed.

26 The Preferred Alternative would incrementally increase skyglow, particularly on new alignments
27 where no road currently exists, but would not be expected to substantially increase glare, light
28 trespass, or clutter.

29 The Preferred Alternative crosses an area of Class II VRM; however, the alternative is co-
30 located with SR 85 and improvements would be within current ADOT right-of-way and would
31 have no impact. **Table 3.9-2** summarizes the BLM VRM classes within the Recommended and
32 Preferred Alternatives.

33 **3.9.6 Mitigation and Tier 2 Analysis**

34 **3.9.6.1 Tier 2 Analysis Commitments**

35 FHWA and ADOT completed an initial level of analysis in this Final Tier 1 EIS to identify a
36 2,000-foot-wide preferred Build Corridor Alternative. Additional analysis in Tier 2 will inform
37 (1) the selection of a specific alignment (approximately 400 feet wide) within the selected
38 2,000-foot-wide corridor and (2) the selection of the west option or east option in Pima County.
39 Tier 2 analysis will also identify measures to avoid, minimize, or mitigate visual and aesthetic
40 impacts. Specifically, ADOT commits to carrying out the following analysis during the Tier 2
41 process:



- 1 • **T2-Visual-1:** Assess individual Tier 2 projects using FHWA’s Visual Impact Assessment
2 Scoping Questionnaire (FHWA 2015). Depending on the findings of the questionnaire, an
3 Abbreviated Visual Impact Assessment may be needed, or a more involved Standard or
4 Expanded Visual Impact Assessment may be required. Simulations may also be prepared to
5 assist with evaluating potential visual impacts.
- 6 • **T2-Visual-2:** Identify site-specific mitigation measures for sensitive viewpoints, including
7 Saguaro National Park West and Tucson Mountain Park.

8 **3.9.6.2 Mitigation Commitments**

9 As required by NEPA, FHWA and ADOT considered measures to avoid, minimize, and mitigate
10 impacts to visual and aesthetic resources from the Project (generally referred to as mitigation
11 measures) during this Tier 1 process. Specific mitigation that ADOT is committing to implement
12 if a Build Alternative is selected includes:

- 13 • **MM-Visual-1:** Comply with applicable local ordinances that regulate outdoor lighting to
14 minimize light pollution.
- 15 • **MM-Visual-2:** Comply with appropriate level of FHWA Visual Impact Assessment Guidelines
16 (FHWA 2015) during Tier 2 studies.
- 17 • **MM-Visual-3:** Select roadway lighting that is compatible with locally adopted dark sky
18 objectives and policies, where applicable.
- 19 • **MM-Visual-4:** If the Preferred Alternative with west option is selected during Tier 2 studies,
20 avoid use of roadway lighting at all in the vicinity of the Tucson Mitigation Corridor and
21 Saguaro National Park, except at locations where safety requirements deem it necessary.

22 In addition, the following mitigation commitment is included in **Section 3.17** (Indirect and
23 Cumulative Effects):

- 24 • **MM-Indirect-2:** Exits or interchanges will not be built between West Snyder Hill Road and
25 Manville Road in area around the Tucson Mitigation Corridor in order to limit project-induced
26 development.

27 **3.9.6.3 Additional Mitigation to be Evaluated in Tier 2**

28 During the Tier 2 process, ADOT will evaluate mitigation measures in addition to those listed
29 above, to include best practices, permit requirements, and/or other mitigation strategies
30 suggested by agencies or the public. Examples of measures that ADOT may evaluate in Tier 2
31 include:

- 32 • Prepare landscape design plans for visually sensitive areas. These plans will:
 - 33 ○ Protect existing vegetation and add new vegetation to minimize the visual effects of I-11
34 features and to retain and enhance the area’s natural features.
 - 35 ○ Minimize the spatial limits of earthwork and grading where possible.



- 1 ○ Implement site restoration plans upon completion of construction.
- 2 ○ Protect and enhance existing rock outcrops.
- 3 ○ Include and treat newly exposed rock outcrops by considering scale, shape, slope, and
- 4 fracturing and by using rock stain where desert rock varnish has been disturbed to
- 5 reduce the color contrast with adjacent rocks.
- 6 ○ Salvage protected native plants to the extent possible.
- 7 ○ Protect existing views and do not block those views with new vegetation or other I-11
- 8 features such as signs.
- 9 ● Include grading designs that create natural-looking slopes, surfaces, and transitions.
- 10 ● Include landscape treatments in stormwater channels and basins to help blend them into
- 11 their surroundings and create new visual resources in the landscape.
- 12 ● Enhance sound walls, retaining walls, headwalls, concrete barriers, riprap, and similar I-11
- 13 features that are highly visible by selecting colors that complement their surroundings and/or
- 14 by using artistic surface treatments, including textures and patterns that support an overall
- 15 design theme compatible with their setting.
- 16 ● Select lighting standards, guardrails, and other supporting features that minimize visual
- 17 impacts.
- 18 ● Use natural-tone metals with non-contrasting, non-glare finishes and color choices that
- 19 match their settings.
- 20 ● Minimize fugitive light from portable light sources used during construction near sensitive
- 21 receptors to the maximum extent feasible, given safety considerations. Lights will be
- 22 screened and directed downward toward work activities and will be screened and directed
- 23 away from the night sky and nearby residents to the maximum extent possible.
- 24 ● Design bridge and other vertical I-11 components to conform to the design standards
- 25 applicable to the entire corridor or to the special design standards in key locations where
- 26 these features can become visual resources.
- 27 ● Restore disturbed terrain and install replacement plantings in areas where vegetation is
- 28 removed. Replacement plantings will be native and indigenous to the area. Define the
- 29 storage sites for equipment, materials and stockpiles, and borrow sites in the Tier 2 project
- 30 plans. Site selection will consider and minimize visual impacts and will include screening to
- 31 minimize visual impacts, where appropriate. To minimize the impact of staging areas on
- 32 visual quality and character, return these areas to preconstruction conditions once the
- 33 staging facilities are decommissioned and removed.
- 34