



1 **3.7 Archaeological, Historical, Architectural, and Cultural**
2 **Resources**

3 **3.7.1 Summary of Draft Tier 1 EIS**

4 The Draft Tier 1 EIS assessed potential impacts on archaeological, historical, architectural, and
5 cultural resources, and FHWA initiated consultation pursuant to Section 106 of the National
6 Historic Preservation Act (NHPA). Because planning of I-11 is phased, FHWA and ADOT
7 adopted a phased approach for assessing I-11 effects on properties listed in or eligible for the
8 National Register of Historic Places (NRHP), a strategy consistent with Section 106 regulations.
9 The Draft Tier 1 EIS assessed levels of impacts on (1) archaeological sites and historic
10 structures, (2) historic districts and buildings, and (3) traditional cultural properties. The analysis
11 was based on (1) tribal consultation, (2) prior cultural resource studies and NRHP listing and
12 evaluations, and (3) preliminary evaluations of the NRHP eligibility of unrecorded historic-period
13 parcels (defined as pre-1971).

14 The NHPA defines historic properties as cultural resources that are “included in, or eligible for
15 inclusion in” the NRHP (36 CFR 800.16(l)(1)). Eligibility is determined by federal lead agencies
16 during the Section 106 process. For this Tier 1 study, information from prior eligibility
17 evaluations was used; no re-evaluation of prior recommendations or determinations was
18 undertaken. The Tier 1 preliminary NRHP evaluations of unrecorded historic-period districts and
19 buildings were an initial assessment limited to consideration of historic integrity and architectural
20 significance and are not formal NRHP eligibility recommendations but instead an indication of
21 resources that might be protected by Section 4(f). Tier 2 studies will evaluate the eligibility of
22 previously recorded and newly recorded cultural resources.

23 Prior cultural resource surveys covered about one-fourth to one-half of the three Build Corridor
24 Alternatives. Archaeological sites are the most common type of cultural resource recorded in the
25 study area, and approximately 65 percent are prehistoric, 20 percent are historic, 10 percent
26 have both prehistoric and historic components, and 5 percent are undated. The sites reflect
27 prehistoric and historic settlements and a variety of non-habitation activities. Historic structures
28 (such as roads and irrigation canals) are less common.

29 Three archaeological resources and 10 historic districts or buildings listed in the NRHP, and one
30 historic district previously evaluated as eligible, overlap the three Build Corridor Alternatives.
31 Prior reviews evaluated the NRHP eligibility of 65 to 75 percent of the other recorded
32 archaeological sites and historic structures and found 60 to 70 percent to be eligible. Preliminary
33 evaluation of unrecorded pre-1971 parcels concluded 38 (4 districts, 34 individual parcels) were
34 likely eligible and 65 (2 districts, 63 individual parcels) were possibly eligible. The Draft Tier 1
35 EIS assessment concluded each Build Corridor Alternative could affect one or two known
36 traditional cultural properties (**Table 3.7-1**).

37 Because any build alternative could adversely affect NRHP-listed or eligible properties, FHWA
38 and ADOT prepared a Section 106 Programmatic Agreement to define procedures for further
39 consideration during Tier 2. A Draft Programmatic Agreement was circulated to consulting
40 parties and included in the Draft Tier 1 EIS **Appendix E7** (Section 106 Consultation Summary
41 and Draft Programmatic Agreement). The final draft Tier 1 Section 106 programmatic
42 agreement (PA) was distributed to consulting parties on May 5, 2021, for final review and

1 comment. Consultation is ongoing. The final draft PA, included in this Final Tier 1 EIS in
 2 **Appendix E7** (Section 106 Consultation Summary and Programmatic Agreement), reflects
 3 Section 106 consultation to date. If the PA is not executed before the Tier 1 EIS Record of
 4 Decision is issued, it may be executed subsequently. Construction on Tier 2 projects would not
 5 proceed until appropriate Section 106 agreement documents are executed.

6 **Table 3.7-1. Summary of Draft Tier 1 EIS Assessment of Impacts on Cultural**
 7 **Resources**

Assessment	Purple Alternative	Green Alternative	Orange Alternative
Archaeological Sites and Historic Structures			
Percent covered by previous cultural resource surveys	27%	25%	49%
Potential high impacts	4 miles	8 miles	25 miles
Potential moderate impacts	45 miles	52 miles	20 miles
Potential low impacts	143 miles	155 miles	64 miles
No impacts anticipated	80 miles	53 miles	171 miles
Estimated NRHP-eligible properties affected	70	100	60
Historic Districts and Buildings			
Potential high impacts on NRHP-listed/determined eligible properties	0	0	4
No impacts anticipated on NRHP-listed properties	1	2	7
Potential high impacts on unrecorded historic-period parcels preliminarily evaluated as likely or possibly NRHP eligible	1	0	5
Potential moderate impacts on unrecorded historic-period parcels preliminarily evaluated as likely or possibly NRHP eligible	3	3	0
Potential low impacts on unrecorded historic-period parcels preliminarily evaluated as likely or possibly NRHP eligible	25	18	2
No impacts anticipated on unrecorded historic-period parcels preliminarily evaluated as likely or possibly NRHP eligible	30	35	48
Traditional Cultural Properties			
Potentially affected	2	2	1

8 SOURCE: ADOT 2018a, 2018b; ADOT 2017j (Record of FHWA, ADOT, and Four Southern Tribes cultural resource meeting, June
 9 27, 2017).

10 **3.7.2 Summary of Changes Since Draft Tier 1 EIS**

11 Some comments on the Draft Tier 1 EIS questioned the adequacy of data used to assess
 12 potential impacts on cultural resources, particularly for comparison of impacts of the Green and
 13 Orange Alternatives in Pima County. Because of that and other reasons, FHWA and ADOT
 14 concluded more detailed studies are needed to understand trade-offs between those
 15 alternatives and retained both options as part of the Preferred Alternative for further study
 16 during Tier 2. FHWA and ADOT concluded the analysis provided information needed to

1 adequately consider potential impacts on cultural resources for Tier 1 decisions. After the Draft
2 Tier 1 EIS was issued, the Project Team used the Draft Tier 1 EIS methods to collect additional
3 data to characterize cultural resources and assess potential levels of impacts for those parts of
4 the Recommended and Preferred Alternatives that differed from the originally assessed Build
5 Corridor Alternatives.

6 **3.7.3 No Build Alternative**

7 The No Build Alternative would avoid most impacts on cultural resources in the Build Corridor
8 Alternatives, but not all because some highway improvement projects programmed for funding
9 would be constructed even if FHWA and ADOT decided not to pursue development of I-11 (see
10 Draft Tier 1 EIS **Section 2.3.1** [No Build Alternative]). The Draft Tier 1 EIS concluded such
11 projects would result in potential high impacts along 2 miles of I-10 in the Tucson vicinity, and
12 those projects are now underway. Other projects not yet designed or funded would be
13 developed in the future and could affect additional cultural resources, but each would be
14 reviewed pursuant to applicable regulations.

15 **3.7.4 Recommended Alternative**

16 **3.7.4.1 Archaeological Sites and Historic Structures**

17 Prior cultural resource surveys covered 23 percent of the Recommended Alternative and
18 recorded 172 archaeological sites and 46 historic structures (**Table 3.7-2**). Approximately
19 78 percent of the archaeological sites are prehistoric, 12 percent are historic, 8 percent have
20 both prehistoric and historic components, and 2 percent are of undetermined age (**Table 3.7-3**).
21 Artifact scatters, with or without archaeological features, are the most common type of known
22 prehistoric site (83 percent), and 16 percent are classified as village or habitation sites. A less
23 common type is trails.

24 The most common types of known historic archaeological sites are artifact scatters, with or
25 without archaeological features (50 percent). Approximately 30 percent of the known historic
26 sites are classified as reflecting more permanent occupation (homesteads, habitations, and
27 building foundations). Less common types are classified as ranching and military. The most
28 common types of known historic structures are roads (73 percent), railroads (9 percent), and
29 irrigation canals (9 percent). Less common types include utility lines and cemeteries.

30 As was done for the Draft Tier 1 EIS, the Project Team assessed the potential for unrecorded
31 archaeological sites and historic structures in parts of the Recommended Alternative that have
32 had little prior survey for cultural resources. The analysis classified 13 areas encompassing
33 5.3 miles of the Recommended Alternative as having high potential for unrecorded
34 archaeological sites. The average recorded densities suggest there could be approximately
35 900 to 1,000 archaeological sites and historic structures in the 2,000-foot-wide corridor.

36 One NRHP-listed archaeological district (Los Robles District) overlaps the edge of the
37 Recommended Alternative in three locations, but no archaeological sites have been recorded in
38 those overlaps. Although not listed in the NRHP, nine known historic structures may warrant
39 efforts to preserve in place because they were previously determined to be eligible for the
40 NRHP under Criteria A, B, or C, in addition to, or rather than their potential to yield important
41 information (Criterion D) (**Table 3.7-4**). Any adverse effects at existing or new crossings of those



1 historic structures might be avoided by bridging or other measures, as ADOT has done on other
2 projects.

3 **Table 3.7-2. Extent of Prior Cultural Resource Survey and Recorded**
4 **Archaeological Sites and Historic Structures in the 2,000-foot-wide Corridors of**
5 **the Recommended and Preferred Alternatives**

Summary of Prior Cultural Resource Surveys	Recommended Alternative	Preferred Alternative with West Option in Pima County	Preferred Alternative with East Option in Pima County
Length (miles)	276.1	276.0	267.8
Percent Previously Surveyed	23.4%	28.3%	39.2%
Recorded Archaeological Sites	172	200	350
Recorded Historic Structures	46	57	87
Total ^a	218	257	437
Average Density of Recorded Resources/Mile ^b	3.4	3.3	4.2
Estimated Total Resources ^c	891	965	1,062

6 SOURCE: ADOT 2020a.

7 Note: Table includes all recorded sites and historic structures regardless of NRHP eligibility.

8 ^a Each of the options (segments) included in the Recommended and Preferred Alternatives was analyzed separately. Because some
9 archaeological sites and historic structures overlapped option boundaries, they were counted more than once when the numbers for
10 each option were summed, which inflated the totals. The actual total number of archaeological sites and historic structures recorded
11 along the Recommended Alternative is 215, along the Preferred Alternative with west option in Pima County is 246, and along the
12 Preferred Alternative with the east option is 421.

13 ^b Per linear mile of 2,000-foot-wide corridor within areas surveyed for cultural resources.

14 ^c Estimates are the sum of estimates based on the recorded densities for each option (segment) of the alternative.

16 **Table 3.7-3. Temporal Classification of Recorded Archaeological Sites and**
17 **Historic Structures in the 2,000-foot-wide Corridors of the Recommended and**
18 **Preferred Alternatives**

Temporal Period	Recommended Alternative		Preferred Alternative with West Option in Pima County		Preferred Alternative with East Option in Pima County	
	Sites	%	Sites	%	Sites	%
Archaeological Sites: Prehistoric	132	61%	144	59%	196	47%
Archaeological Sites: Historic	20	9%	30	12%	78	19%
Archaeological Sites: Multi-component	14	7%	13	5%	47	11%
Archaeological Sites: Undated	4	2%	10	4%	26	6%
Archaeological Sites Subtotal	170	79%	197	80%	347	83%
Historic Structures	45	21%	49	20%	73	17%
Total	215	100%	246	100%	420	100%

19 SOURCE: ADOT 2020a.

20 Note: Table includes all recorded archaeological sites and historic structures identified by the data collection regardless of NRHP
21 eligibility.

1 **Table 3.7-4. Archaeological Sites and Historic Structures that may Warrant**
 2 **Preservation in Place in the 2,000-foot-wide Corridors of the Recommended and**
 3 **Preferred Alternatives**

Archaeological Site/ Historic Structure	NRHP Eligibility Criteria	Recommended Alternative	Preferred Alternative with West Option in Pima County	Preferred Alternative with East Option in Pima County
Archaeological Sites				
Site AZ BB:13:170(ASM)	A, B, D	–	–	no impact ^a
Site AZ T:10:59(ASM)	A, C, D	–	no impact ^b	no impact ^b
Historic Structures				
Otero Cemetery	A, B	no impact ^c	no impact ^c	no impact ^c
New Mexico & Arizona Railroad: Nogales Branch	C	no impact ^c	no impact ^c	no impact ^c
Mission de San Agustin del Tucson /Clearwater site	A, D	–	–	no impact ^d
Cortaro Farms Canal	A	adverse effect unlikely ^e	–	adverse effect unlikely ^f
Abandoned Cortaro-Marana Irrigation District canals	A, C	–	–	adverse effect unlikely ^f
Arizona Southern Railroad	A, D	adverse effect unlikely ^e	adverse effect unlikely ^e	adverse effect unlikely ^e
Casa Grande Canal	A	adverse effect unlikely ^e	–	–
Southern Pacific Railroad	A	adverse effect unlikely ^e	adverse effect unlikely ^e	adverse effect unlikely ^e
Butterfield Overland Mail stage route	A	adverse effect unlikely ^e	adverse effect unlikely ^e	adverse effect unlikely ^e
Buckeye Canal	A	adverse effect unlikely ^e	adverse effect unlikely ^g	adverse effect unlikely ^g
Southern Pacific Railroad- Phoenix Mainline	A	adverse effect unlikely ^e	adverse effect unlikely ^g	adverse effect unlikely ^g
Roosevelt Canal	A	–	adverse effect unlikely ^g	adverse effect unlikely ^g

4 SOURCE: ADOT 2020a.

5 ^a Outside right-of-way of co-located I-19, where new lanes would be added in existing right-of-way.

6 ^b Co-located with SR 85 where no lanes would be added.

7 ^c Co-located with I-19 where no lanes would be added.

8 ^d Co-located with I-10 outside potential new right-of-way.

9 ^e Any adverse effect at new crossing might be avoided by bridging, as ADOT has done on other projects.

10 ^f Any adverse effect at existing crossing of co-located I-10 might be avoided by bridging, as ADOT has done on other projects.

11 ^g Any adverse effect at existing crossing of co-located SR 85 might be avoided by bridging, as ADOT has done on other projects.

12
13

1 Prior reviews evaluated 129 of the 215 archaeological and historic structures recorded in the
 2 Recommended Alternative and determined or recommended 67 percent eligible for the NRHP
 3 (**Table 3.7-5**). The Final Tier 1 EIS assessment concluded the Recommended Alternative could
 4 have high impacts for approximately 8 miles and moderate impacts for 61 miles and could affect
 5 approximately 100 NRHP-eligible sites and historic structures.

6 **Table 3.7-5. NRHP Eligibility of Archaeological Sites and Historic Structures in the**
 7 **2,000-foot-wide Corridors of the Recommended and Preferred Alternatives**

NRHP Eligibility of Recorded Sites and Historic Structures	Recommended Alternative	Preferred Alternative with West Option in Pima County	Preferred Alternative with East Option in Pima County
Percent surveyed for cultural resources	23%	28%	39%
Eligible under Criterion D	58	65	129
Eligible under Criteria A, B, and/or C	10	9	14
Eligible, no criterion listed	18	18	43
Total Eligible ^a	86	92	186
Not Eligible ^b	43	54	94
Percent Evaluated as Eligible	67%	63%	66%
Not Evaluated	86	100	140

8 SOURCE: ADOT 2020a.

9 ^a Includes resources that have been determined to be NRHP eligible or recommended eligible.

10 ^b Includes resources that have been determined to not be NRHP eligible or recommended not eligible.

11 **3.7.4.2 Historic Districts and Buildings**

12 Two NRHP-listed historic districts overlap the part of the Recommended Alternative co-located
 13 with I-19 but are unlikely to be adversely affected (**Table 3.7-6**). The recently nominated Tucson
 14 Mountain Park Historic District does not overlap the Recommended Alternative but is within
 15 approximately 200 feet at its closest point and on the opposite side of the Tucson Aqueduct of
 16 the CAP. Preliminary evaluation of 144 unrecorded historic-period properties (8 districts, 136
 17 individual properties) along the Recommended Alternative concluded 24 were likely NRHP
 18 eligible, 42 possibly eligible, and 78 not eligible (**Table 3.7-7**). The Final Tier 1 EIS assessment
 19 concluded the Recommended Alternative is unlikely to have high impacts on any of those
 20 preliminarily evaluated as likely or possibly eligible properties and potential moderate impacts
 21 on four of them.

22 **3.7.4.3 Traditional Cultural Properties**

23 In consultation with FHWA and ADOT, tribes identified four traditional cultural properties along
 24 the Recommended Alternative. Specific locations of two of those were not revealed and they
 25 could be directly affected (**Table 3.7-8**). The two others are not close to the corridor, but
 26 potential for indirect effects would be considering during Tier 2, if warranted. Tribes also oppose
 27 disturbance of human burials and formal animal burials.

1 **Table 3.7-6. NRHP-listed and Determined Eligible Historic Districts and Buildings**
2 **in the 2,000-foot-wide Corridors of the Recommended and Preferred Alternatives**

NRHP Eligible or Listed Historic Property	Recommended Alternative	Preferred Alternative with West Option in Pima County	Preferred Alternative with East Option in Pima County
Tumacácori National Historical Park	co-located with I-19	co-located with I-19	co-located with I-19
Canoa Ranch Rural Historic District	co-located with I-19	co-located with I-19	co-located with I-19
El Paso and Southwestern Railroad District	–	–	co-located with I-10 ^a
Barrio El Hoyo Historic District	–	–	co-located with I-10
Barrio El Membrillo Historic District	–	–	co-located with I-10 ^a
El Presidio Historic District	–	–	co-located with I-10
Manning, Levi H. House (noncontiguous contributor to El Presidio Historic District)	–	–	co-located with I-10 ^a
Barrio Anita Historic District ^a	–	–	co-located with I-10 ^a
Menlo Park Historic District	–	–	co-located with I-10
Ronstadt-Sims Adobe Warehouse (noncontiguous contributor to John Spring Neighborhood Historic District)	–	–	co-located with I-10
US Department of Agriculture Tucson Plant Materials Center	–	–	co-located with I-10

3 SOURCE: ADOT 2020b

4 Note: All properties are NRHP-listed except for the El Paso and Southwestern Railroad District, which has been determined eligible.

5 ^a Could be directly affected if additional right-of-way is required for I-10 upgrades between the I-19 interchange and Prince Road. No
6 impacts are anticipated on other NRHP listed properties.

7 **Table 3.7-7. Preliminary NRHP Eligibility Evaluations of Unrecorded Historic-**
8 **Period Properties in the 2,000-foot-wide Corridors of the Recommended and**
9 **Preferred Alternatives**

Preliminary Evaluations of Unrecorded Historic-Period Properties and Impact Assessment	Recommended Alternative	Preferred Alternative with West Option in Pima County	Preferred Alternative with East Option in Pima County
Districts			
Likely Eligible	4	4	4
Possibly Eligible	3	2	1
Not Eligible	1	1	9
Individual Properties			
Likely Eligible	20	18	24
Possibly Eligible	39	41	39
Not Eligible	77	55	92
Totals	144	121	169



Preliminary Evaluations of Unrecorded Historic-Period Properties and Impact Assessment	Recommended Alternative	Preferred Alternative with West Option in Pima County	Preferred Alternative with East Option in Pima County
Potential Level of Impacts ^a			
High	0	0	5
Moderate	4	3	0
Low	27	26	16
None Anticipated	35	36	47

1 SOURCE: ADOT 2020a
 2 ^a On properties preliminarily evaluated as likely or possibly eligible for the NRHP.

3 **Table 3.7-8. Traditional Cultural Properties in the 2,000-foot-wide Corridors of the**
 4 **Recommended and Preferred Alternatives**

Traditional Cultural Property	Recommended Alternative	Preferred Alternative with West Option in Pima County	Preferred Alternative with East Option in Pima County
Site associated with a traditional tribal story	Location not revealed, could be affected in new corridor	Location not revealed, could be affected in new corridor	–
Archaeological site	Location not revealed, could be affected in new corridor	Location not revealed, could be affected in new corridor	Location not revealed, could be affected in new corridor
Area of high archaeological site density	–	–	Along I-19, could be affected along existing right-of-way
Volcanic peak	Not close to corridor, unlikely to be directly affected	Not close to corridor, unlikely to be directly affected	Not close to corridor, unlikely to be directly affected
Cluster of volcanic hills	Not close to corridor, unlikely to be directly affected	Not close to corridor, unlikely to be directly affected	Not close to corridor, unlikely to be directly affected
Open air chapel	–	–	Along I-19, unlikely to be directly affected

5 SOURCE: ADOT 2017j (Record of FHWA, ADOT, and Four Southern Tribes cultural resource meeting, June 27, 2017); Pascua
 6 Yaqui Tribe 2020.

7 **3.7.5 Preferred Alternative**

8 **3.7.5.1 Archaeological Sites and Historic Structures**

9 Prior cultural resource surveys covered 28 percent of the Preferred Alternative with west option
 10 in Pima County and 39 percent of the Preferred Alternative with east option in Pima County,
 11 recording 257 and 436 archaeological sites and historic structures in those respective corridors
 12 (Table 3.7-2). A majority of recorded archaeological sites date to the prehistoric era, others date

1 to the historic period, some have both prehistoric and historic components, and a few are
2 undated (**Table 3.7-3**).

3 Artifact scatters, with or without features, are the most common type of known prehistoric sites
4 in both options of the Preferred Alternative (77 to 81 percent), and 15 to 17 percent are
5 classified as village or habitation sites. Other types include rock features, canals, trails, and
6 cleared areas.

7 The most common type of known historic archaeological sites in both options of the Preferred
8 Alternative also are artifact scatters, with or without archaeological features (44 to 63 percent).
9 Approximately 17 percent of the known historic sites in the Preferred Alternative with west
10 option in Pima County reflect more permanent occupation (homesteads, habitations, or building
11 foundations). The Preferred Alternative with east option has considerably more, including entire
12 city blocks (39 percent). Other sites are classified as ranching, military, agricultural, and mining.
13 The most common types of known historic structures in both options are roads (62 to
14 73 percent), railroads (8 to 12 percent), and irrigation canals (8 to 14 percent). Other types
15 include utilities and cemeteries.

16 As was done for the Draft Tier 1 EIS, the Project Team assessed the potential for unrecorded
17 archaeological sites and historic structures in parts of the Preferred Alternative that have had
18 little prior survey for cultural resources. The analysis classified five areas, totaling 4.2 miles, as
19 having high potential for unrecorded archaeological sites and historic structures along the
20 Preferred Alternative with west option in Pima County and 14 areas, totaling 6.7 miles, with the
21 east option. The average recorded densities suggest there could be approximately 900 to 1,000
22 archaeological sites and historic structures in the 2,000-foot-wide corridor of the west option and
23 1,000 to 1,100 in the east option.

24 No archaeological sites in the Preferred Alternative with west option in Pima County are listed in
25 the NRHP. One archaeological site, AZ BB:15:13(ASM), in the Preferred Alternative with east
26 option is listed in the NRHP. The site is along a segment co-located with I-19.

27 Although not listed in the NRHP, one known archaeological site and eight known historic
28 structures in the Preferred Alternative with west option in Pima County were previously
29 determined to be eligible for the NRHP under Criteria A, B, or C, in addition to, or rather than
30 their potential to yield important information (Criterion D) (**Table 3.7-4**). Two archaeological sites
31 and 11 historic structures were previously determined to be eligible for the NRHP under Criteria
32 A, B, or C in the Preferred Alternative with east option. Those resources may warrant efforts to
33 preserve in place. Bridging or other measures have good potential to avoid any adverse effects
34 on those archaeological sites and historic structures, as ADOT has done on other projects.

35 Prior reviews evaluated 146 of the 246 archaeological sites and historic structures recorded in
36 the Preferred Alternative with west option in Pima County and determined or recommended
37 63 percent eligible for the NRHP. Prior reviews evaluated 280 of the 420 archaeological sites
38 and historic structures recorded in the Preferred Alternative with east option and determined or
39 recommended 66 percent eligible for the NRHP (**Table 3.7-5**).

40 The Final Tier 1 EIS assessment concluded the Preferred Alternative with west option in Pima
41 County could have high impacts for approximately 6 miles and moderate impacts for 59 miles
42 and affect approximately 110 NRHP-eligible sites and historic structures. The Final Tier 1 EIS
43 assessment concluded the Preferred Alternative with east option in Pima County could have

1 high impacts for approximately 34 miles, moderate impacts for 42 miles, and affect
2 approximately 70 NRHP-eligible sites and historic structures.

3 **3.7.5.2 Historic Districts and Buildings**

4 Two NRHP-listed historic districts overlap the part of the Preferred Alternative that is co-located
5 with I-19 but are unlikely to be affected. The recently nominated Tucson Mountain Park Historic
6 District does not overlap the Preferred Alternative with west option but is within approximately
7 200 feet at its closest point and on the opposite side of the Tucson Aqueduct of the CAP
8 Although that historic district would not be directly affected, potential indirect effects would need
9 to be considered during Tier 2. Eight other NRHP-listed historic districts and buildings and one
10 eligible historic district overlap the Preferred Alternative with east option in Pima County, and
11 four of those could be directly affected if the I-10 right-of-way has to be widened to
12 accommodate additional lanes between the I-19 interchange and Prince Road (**Table 3.7-6**).

13 Preliminary evaluation of 121 unrecorded historic-period properties (7 districts, 114 individual
14 properties) along the Preferred Alternative with west option in Pima County concluded 22 were
15 likely eligible, 43 possibly eligible, and 56 not eligible. Preliminary evaluation of 169 unrecorded
16 historic-period properties (14 districts, 155 individual properties) along the Preferred Alternative
17 with east option concluded 28 were likely eligible, 40 possibly eligible, and 101 not eligible. The
18 impact analysis concluded the west option was unlikely to have high impacts on any unrecorded
19 historic-period properties preliminarily evaluated as likely or possibly eligible, and potential
20 moderate impacts on three. The Final Tier 1 EIS assessment concluded the east option could
21 have potential high impacts on five unrecorded historic-period properties preliminarily evaluated
22 as likely or possibly eligible and moderate impacts on none (**Table 3.7-7**).

23 **3.7.5.3 Traditional Cultural Properties**

24 In consultation with FHWA and ADOT, tribes identified four traditional cultural properties that
25 could be affected along the Preferred Alternative with west option in Pima County (**Table 3.7-8**).
26 Specific locations of two of those were not revealed and they could be directly affected. The two
27 others are not close to the corridor, but potential for indirect effects would be considering during
28 Tier 2, if warranted. Tribes identified five traditional cultural properties that could be affected
29 along the Preferred Alternative with east option. Two are along I-19 where a need for additional
30 right-of-way is not anticipated but one could be affected by construction of additional lanes in
31 the existing right-of-way. The specific location of another was not revealed and it could be
32 directly affected. The two others are not close to the corridor, but potential for indirect effects
33 would be considering during Tier 2, if warranted. Tribes also oppose disturbance of human
34 burials and formal animal burials.

35 **3.7.5.4 Summary**

36 The Final Tier 1 EIS impact assessment concluded that, compared to the Recommended
37 Alternative and the Preferred Alternative with west option in Pima County, the Preferred
38 Alternative with east option in Pima County is likely to:

- 39 • Pass through a high-density area of archaeological sites in the Tucson area but affect
40 approximately 30 to 40 fewer NRHP-eligible archaeological sites and historic structures



- 1 • Potentially have high impacts on 4 NRHP-listed or eligible historic districts and buildings and
- 2 5 preliminarily evaluated as likely or possibly eligible
- 3 • Affect the same number of tribally identified traditional cultural properties (Table 3.7-9,
- 4 Figure 3.7-1, and Figure 3.7-2)

Table 3.7-9. Summary of Comparison of Impacts on Cultural Resources: Recommended and Preferred Alternatives

Assessment	Recommended Alternative	Preferred Alternative with West Option in Pima County	Preferred Alternative with East Option in Pima County
Archaeological Sites and Historic Structures			
Percent covered by previous cultural resource surveys	23%	28%	39%
Potential high impacts	7.8 miles	6.3 miles	34.4 miles
Potential moderate impacts	60.6 miles	59.4 miles	41.5 miles
Potential low impacts	159.6 miles	152.6 miles	124.2 miles
No impacts anticipated	48.1 miles	57.7 miles	67.7 miles
Estimated NRHP-eligible properties affected	100	110	70
Historic Districts and Buildings			
Potential high impacts on NRHP-listed or determined eligible properties	0	0	4
No direct impacts anticipated on NRHP-listed properties	2 ^a	2 ^a	7
Potential high impacts on unrecorded historic-period parcels preliminarily evaluated as likely or possibly NRHP eligible	0	0	5
Potential moderate impacts on unrecorded historic-period parcels preliminarily evaluated as likely or possibly NRHP eligible	4	3	0
Potential low impacts on unrecorded historic-period parcels preliminarily evaluated as likely or possibly NRHP eligible	27	26	16
No impacts anticipated on unrecorded historic-period parcels preliminarily evaluated as likely or possibly NRHP eligible	35	36	47
Traditional Cultural Properties			
Potentially directly affected	2	2	2

7 SOURCE: ADOT 2020a, 2020b

8 ^a In addition to the two NRHP-listed properties, the recently nominated Tucson Mountain Park Historic District is near but does not
 9 overlap the corridor. Potential indirect effects would be assessed during Tier 2.

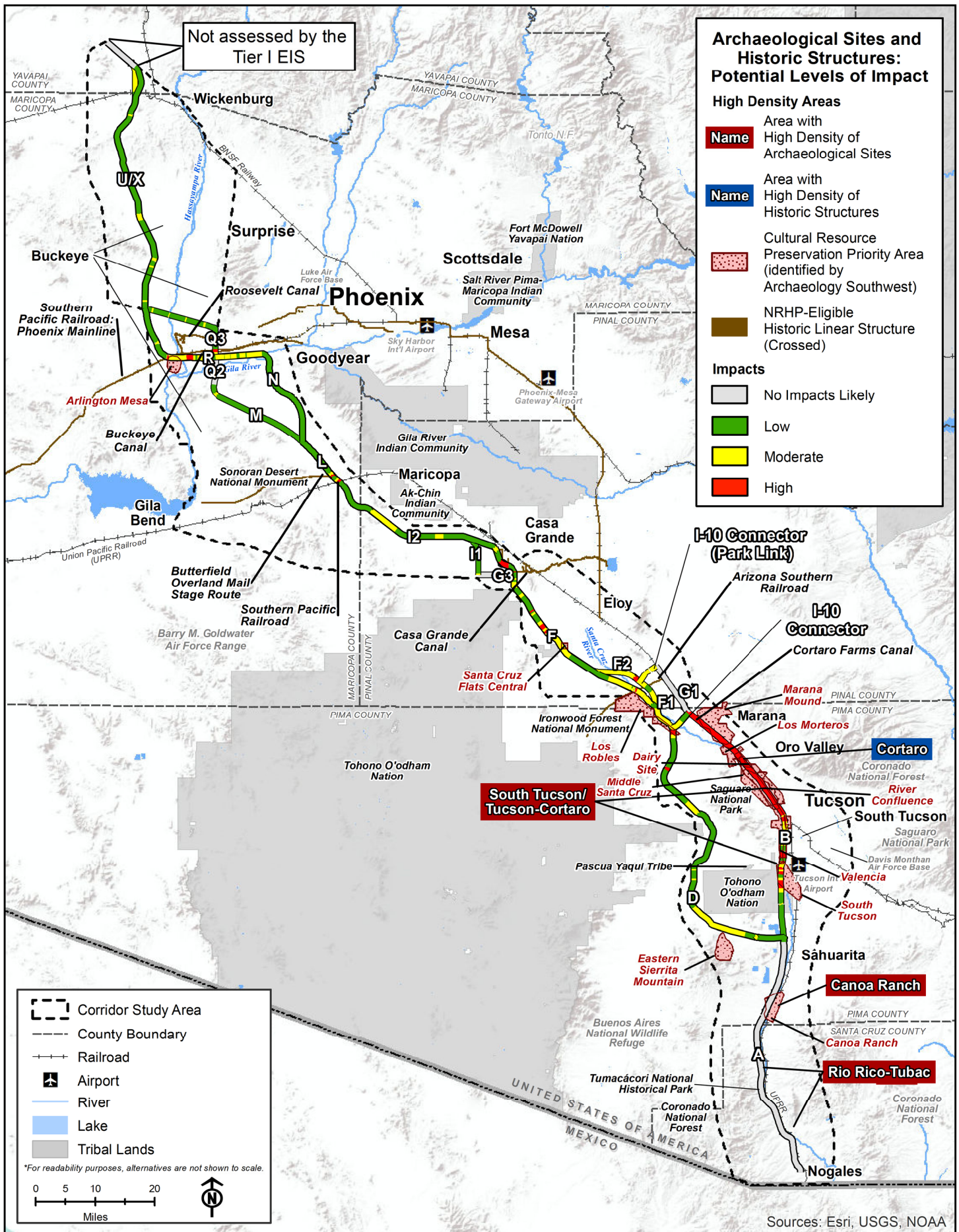


Figure 3.7-1 Potential Levels of Impact on Archaeological Sites and Historic Structures in the Recommended and Preferred Alternatives

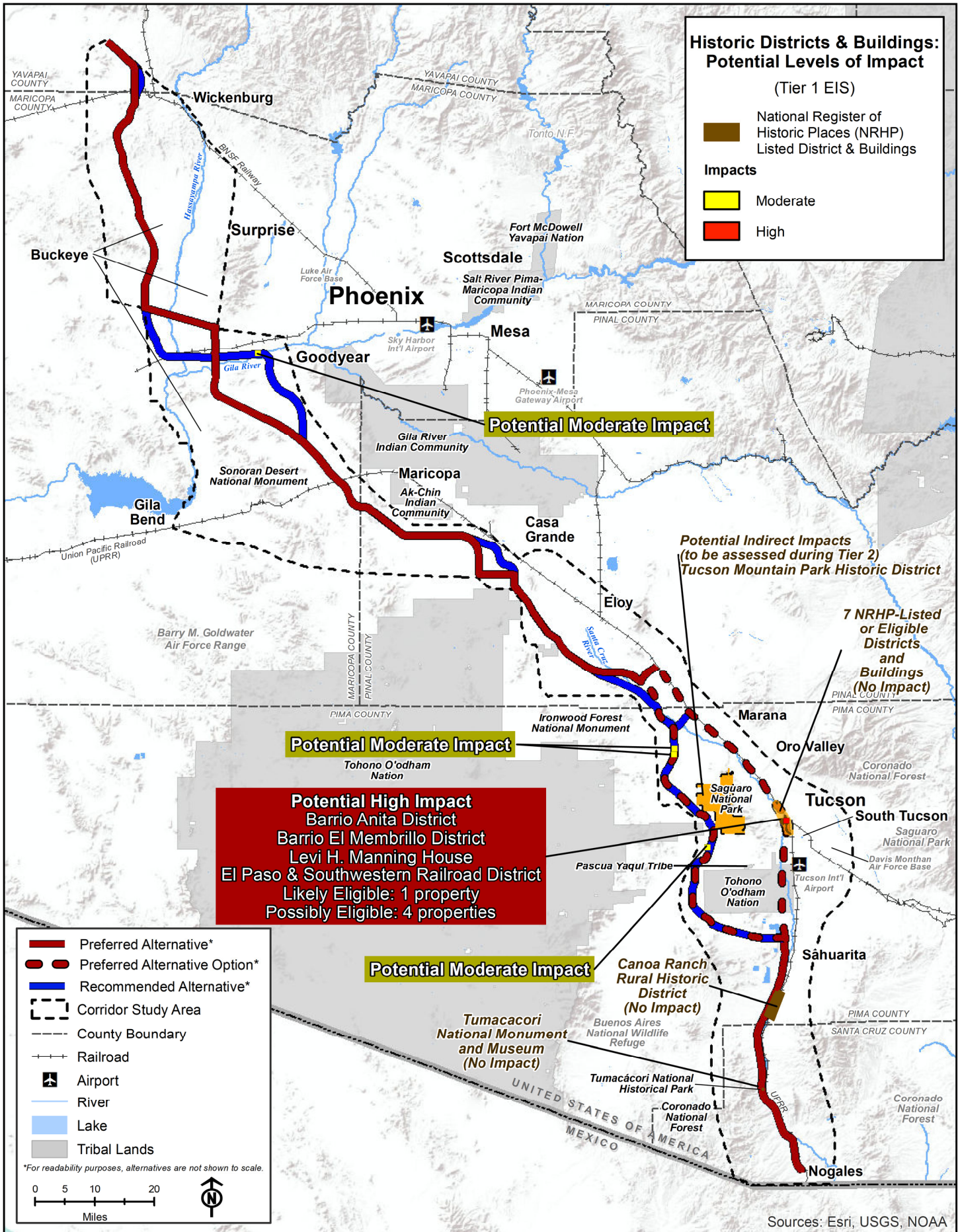


Figure 3.7-2. Potential Levels of Impact on Historic Districts and Buildings in the Recommended and Preferred Alternatives



- 1 Tier 2 studies will further evaluate the west and east options of the Preferred Alternative in Pima
2 County, but the primary differences identified by the Tier 1 analysis (ADOT 2020a, 2020b) are:
- 3 • Considerably more of the east option has been surveyed for cultural resources (64 percent
4 compared to 22 percent along the west option), and therefore the cultural resources of the
5 east option are more thoroughly documented.
 - 6 • The recorded density of archaeological sites and historic structures along the east option is
7 higher (5.5 per corridor mile compared to 3.6 along the west option), and the impact
8 assessment estimated a few more NRHP-eligible sites and structures could be affected
9 (approximately 35 to 45 compared to 30 to 40 along the west option).
 - 10 • The archaeological sites along the east option corridor include more complex prehistoric
11 habitation sites along the Santa Cruz River (prior surveys suggest there could be
12 approximately 25 compared to 10 along the upland west option). Many of the east option
13 archeological sites are deeply buried in floodplain alluvium and could require considerable
14 mitigation efforts, but many have been at least partially excavated to mitigate impacts of
15 prior improvements of I-10. In contrast, development has disturbed fewer of the
16 archaeological sites along the west option.
 - 17 • The east option has potential to directly affect the NRHP-listed Barrio Anita and Barrio El
18 Membrillo Historic Districts and Levi H. Manning House, and the NRHP-eligible El Paso and
19 Southwestern Railroad District along I-10. The west option has potential to indirectly affect
20 the recently nominated but not yet listed Tucson Mountain Park Historic District.

21 **3.7.6 Mitigation and Tier 2 Analysis**

22 **3.7.6.1 Tier 2 Analysis Commitments**

23 FHWA and ADOT completed an initial level of analysis in this Final Tier 1 EIS to identify a
24 2,000-foot-wide preferred Build Corridor Alternative. Additional analysis in Tier 2 will inform
25 (1) the selection of a specific alignment (approximately 400 feet wide) within the selected
26 2,000-foot-wide corridor and (2) the selection of the west option or east option in Pima County.
27 Tier 2 analyses will also identify measures to avoid, minimize, or mitigate impacts to cultural
28 resources. Specifically, ADOT commits to carrying out the following analysis during the Tier 2
29 process:

- 30 • **T2-Cultural-1:** Collect additional information to further evaluate the west and east options of
31 the Preferred Alternative in Pima County and arrange for cultural resource surveys to
32 inventory and evaluate the NRHP eligibility of cultural resources within the area of potential
33 effects of each Tier 2 project, in coordination with the Section 106 Consulting Parties and
34 pursuant to the requirements of Section 106 of the National Historic Preservation Act, any
35 other applicable regulations, and any executed agreement documents. This will include, as
36 necessary and upon request from Consulting Tribes, additional ethnographic and/or
37 traditional cultural property studies.

38



1 3.7.6.2 Mitigation Commitments

2 As required by NEPA, FHWA and ADOT considered measures to avoid, minimize, and mitigate
3 impacts to cultural resources from the Project (generally referred to as mitigation measures)
4 during this Tier 1 process. Specific mitigation that ADOT is committing to implement if a Build
5 Alternative is selected includes:

- 6 • **MM-Cultural-1:** Implement commitments identified during the Tier 1 process; commitments
7 in the I-11 Final Programmatic Agreement (**Appendix E7** [Section 106 Consultation
8 Summary and Programmatic Agreement]), if executed; and any additional commitments from
9 the Tier 2 process. During the Tier 1 process, ADOT has committed to the avoidance of
10 adverse effects upon AZ T:14:115(ASM). ADOT has also committed to the avoidance of
11 adverse effects upon historic canals that have been or may be determined eligible for listing
12 in the NRHP pursuant to 36 CFR 60.4(a), (b), and/or (c); and in such instances as the
13 consulting party or parties with jurisdiction over said structures request avoidance.
- 14 • **MM-Cultural-2:** Work to avoid or minimize adverse effects on historic properties listed in or
15 eligible for the NRHP, including traditional cultural properties, as well as cultural resources
16 not yet evaluated for NRHP eligibility. In coordination with the Section 106 Consulting
17 Parties, ADOT would develop treatment measures to mitigate any unavoidable adverse
18 effects. This will include, as necessary and upon request from Consulting Tribes, additional
19 ethnographic and/or traditional cultural property studies.

20 3.7.6.3 Additional Mitigation to be Evaluated in Tier 2

21 During the Tier 2 process, ADOT will evaluate mitigation measures in addition to those listed
22 above, to include best practices, permit requirements, and/or other mitigation strategies
23 suggested by agencies, tribes, or the public.



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