

WESTERN JOSHUA TREE CENSUS

CITY OF ADELANTO, CALIFORNIA

APN: 3128-111-06

Prepared for:

**Blue Engineering & Consulting, Inc.
9320 Baseline Road, Ste D
Rancho Cucamonga, CA 91701**

Prepared by:

**RCA Associates, Inc.
15555 Main Street, #D4-235
Hesperia, CA 92345
(760) 956-9212**

Biologists:

**Ryan Hunter, Lead Environmental Scientist & Wildlife Biologist
Brian Bunyi, Environmental Scientist & Wildlife Biologist**



Project No: RCA#2023-122 JT

October 30, 2023

TITLE PAGE

Date Report Prepared: October 30, 2023

Field Work Completed: October 19, 2023

Report Title: Western Joshua Tree Census

Project Location: Adelanto, California
APN: 3128-111-06
NW Corner: 34.55016548°, -117.43011603°
NE Corner: 34.55016849°, -117.42802016°
SW Corner: 34.54843794°, -117.43012111°
SE Corner: 34.54844263°, -117.42802296°

Datum of Coordinates: World Geodetic System 1984 (WGS 84)

Prepared For: Blue Engineering & Consulting, Inc.
9320 Baseline Road, Ste D
Rancho Cucamonga, CA 91701

Principal Investigators: Ryan Hunter,
Lead Environmental Scientist & Wildlife Biologist
Brian Bunyi,
Environmental Scientist & Wildlife Biologist

Contact Information: Randall C. Arnold, Jr.
RCA Associates, Inc.
15555 Main Street, #D4-235
Hesperia, CA 92345
(760) 956-9212
rarnold@rcaassociatesllc.com
www.rcaassociatesllc.com

Ryan Hunter
RCA Associates, Inc.
15555 Main Street, #D4-235
Hesperia, CA 92345
(760) 998-7165
rhunter@rcaassociatesllc.com
www.rcaassociatesllc.com

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1.0 SUMMARY

At the request of the project proponent, RCA Associates, Inc. surveyed a 9.11-acre property located southeast of the intersection of Daisy Rd. and Cassia Rd. in the City of Adelanto, California (APN: 3128-111-06) (Figures 1 and 2). The properties corners are marked in figure 3 and the coordinates of the corners are displayed on the title page under location. The property site is located in Section 5, Township 5 North, Range 5 West (USGS Adelanto, CA 7.5-minute quadrangle).

The purpose of the survey was to evaluate the western Joshua trees present on the site to determine possible impacts to the population and to calculate approximate mitigation measures prior to site clearing activities. This report provides the results of the Western Joshua Tree Census performed on October 19, 2023. Following completion of the survey, RCA Associates, Inc. prepared this Western Joshua Tree Census to assist the project proponent with future planning regarding the possible relocation or removal of any Joshua trees and applying for an Incidental Take Permit (ITP). Information on the Joshua trees is provided in Section 4.0. The City of Adelanto Municipal Code has a chapter (Chapter 17.57.040) stating the purpose of the Western Joshua Tree Census, the importance of preserving the Joshua tree as important native desert vegetation, and the consequences of removing a tree without authorization. The requirements of the Ordinance (Chapter 17.57.040) and the City of Adelanto's Protected Plant Plan are provided in Appendix B.

Based on the results of the background data search it was determined that the project site is located within the reduced fee mitigation area for the Western Joshua Tree Conservation Act. Results of the field investigations yielded that there are 84 Joshua trees which occur within the boundaries of the property (Figures 1, 2 and 3). Based on the evaluation and analysis of each tree it was determined that 16 (19.1%) Joshua trees were less than 1 meter in height, 50 (59.5%) Joshua trees were 1 meter or greater but less than 5 meters in height, 11 (13.1%) Joshua trees were 5 meters or greater in height and 7 (8.3%) Joshua trees were dead. A summary of the mitigation fees is located in Table 4-1 and the GPS locations and information on each tree are provided in Table 4-2.

2.0 INTRODUCTION AND PROJECT LOCATION

The area surveyed is located on the southeast of Daisy Rd. and Cassia Rd. in the City of Adelanto, California. Vacant land borders the property boundary to the north and south. Directly west of the site is the Adelanto Power Conversion Station and to the east are residential properties. The biological resources on the site consist of a desert scrub community typical of the area which include Joshua tree (*Yucca brevifolia*), rubber rabbitbrush (*Ericameria nauseosa*), London rocket (*Sisymbrium irio*), fiddleneck (*Amsinckia tessellata*), white bursage (*Ambrosia dumosa*), puncture vine (*Tribulus terrestris*), and red brome (*Bromus rubens*).

Joshua trees occur throughout the Mojave Desert in Southern California and are typically found at an elevation of 400 to 1,800 meters (~1,200 to ~5,400 feet). Joshua trees within the western portion of the Mojave Desert typically receive more annual precipitation during “normal” years; consequently, cloning occurs more often resulting in numerous trunks sprouting from the same root system (Rowland, 1978). Joshua tree habitats provide habitat for a variety of wildlife species including desert woodrats (*Neotoma* sp.) and night lizards (*Xantusia* sp.) both of which utilize the base of the trees. A variety of birds also utilize Joshua trees for nesting such as hawks, common ravens, and cactus wrens. CDFW consider Joshua tree woodlands as areas that support relatively high species diversity and as such are considered to be a sensitive desert community. Joshua trees are also considered a significant resource under the California Environmental Quality Act (CEQA) and are included in the Desert Plant Protection Act, Food and Agricultural Code (80001 – 80006).

3.0 METHODOLOGIES

Pedestrian surveys were walked throughout the site and biologists from RCA Associates, Inc. evaluated each Joshua tree to determine the height, life stage, and a general health assessment based on CDFW survey protocol (Section 1927.3[a][b]). Each Joshua tree received a metal numbered tag which was affixed on the north side of each tree for orientation purposes if future transplanting is required by CDFW. A piece of flagging was affixed to each tree while taking pictures to indicate the tree of focus. The precise location and assessment of each tree was recorded using a Juniper Systems Cedar CT8X2 GPS tablet and a Nikon Forestry Pro II rangefinder was utilized to determine the extent of the property boundaries and accurate tree height. Those Joshua trees which occur on the property site are presented in Table 4-2 and the locations are provided in Figure 3. A 15-meter (~50 ft) is recommended as part of the census area surrounding the project site but was not surveyed due to landowner permission not being obtained. A KML with geographic data on the positions of the trees will be provided to help locate trees in projects with significant tree density and for future mapping.

4.0 RESULTS

There are 84 Joshua trees on the property and the GPS locations of the Joshua trees are provided in Table 4-2. A total of 84 Joshua trees occur within the boundaries of the property (Figures 1, 2 and 3). Based on the evaluation and analysis of each tree it was determined that 16 (19.1%) Joshua trees were less than 1 meter in height, 50 (59.5%) Joshua trees were 1 meter or greater but less than 5 meters in height, 11 (13.1%) Joshua trees were 5 meters or greater in height and 7 (8.3%) Joshua trees were dead. A summary of the mitigation fees is located in Table 4-1 and the GPS locations and information on each tree are provided in Table 4-2.

Table 4-1: Summary of mitigation fees based on “Western Joshua Tree Conservation Act Mitigation Fee Map
(<https://experience.arcgis.com/experience/40690ac231124bccb07cbce42fc95ebd/>)

Reduced Mitigation Fees (within blue area) [See Section 1927.3 (d)]:	Number of trees per Size Class (A, B or C)	Approximate Cost per Size Class (A, B or C)
(A) Trees less than 1 meter in height - \$150	16	\$2400
(B) Trees 1 meter or greater but less than 5 meters in height - \$200	50	\$10,000
(C) Trees 5 meters or greater in height - \$1,000	11	\$11,000
Total number of trees eligible for mitigation	77	
Approximate total mitigation cost		\$23,400
Standard Fees (anywhere in State, outside blue area) [See Section 1927.3 (e)]:	Number of trees per Size Class (A, B or C)	Approximate Cost per Size Class (A, B or C)
(A) Trees less than 1 meter in height - \$340	N/A	N/A
(B) Trees 1 meter or greater but less than 5 meters in height - \$500	N/A	N/A
(C) Trees 5 meters or greater in height - \$2,500	N/A	N/A
Total number of trees eligible for mitigation	N/A	N/A
Approximate mitigation cost	N/A	N/A

Table 4-2: Western Joshua Tree Census. (Note: The GPS locations of the Joshua trees are provided below along with the height and a general health assessment.) (Note: The JT numbers correspond to the tag numbers placed on the Joshua trees.)

Total Number of Joshua Trees On Site	Number of Dead Joshua Trees	Number of Size Class “A” Joshua Trees	Number of Size Class “B” Joshua Trees	Number of Size Class “C” Joshua Trees
84	7	16	50	11

Joshua Tree	Latitude (WGS 84)	Longitude (WGS 84)	Live or Dead	Height of Tree (meters)	Size Class	Mature Tree (Branched)	Flowering or Fruiting Stage (flowers, fruits, or none)	Impact to Tree (removal, trim, relocation, other or none)	Will project activities be within 15 meters of tree	Relocation	Joshua Tree
JT 101	34.54967867	-117.4285753	Live	2.3	B	No	None			Not Applicable	JT 101
JT 102	34.549685	-117.4283735	Live	7.3	C	Yes	None			Not Applicable	JT 102
JT 103	34.55009517	-117.428039	Live	2	B	No	None			Not Applicable	JT 103
JT 104	34.54949983	-117.428028	Live	1.1	B	No	None			Not Applicable	JT 104
JT 105	34.54949017	-117.4285763	Live	3.8	B	Yes	None			Not Applicable	JT 105
JT 106	34.54959483	-117.4288788	Live	3.6	B	Yes	None			Not Applicable	JT 106
JT 107	34.54943183	-117.4288933	Live	3.5	B	Yes	None			Not Applicable	JT 107
JT 108	34.54938833	-117.4289688	Dead							Not Applicable	JT 108

Joshua Tree	Latitude (WGS 84)	Longitude (WGS 84)	Live or Dead	Height of Tree (meters)	Size Class	Mature Tree (Branched)	Flowering or Fruiting Stage (flowers, fruits, or none)	Impact to Tree (removal, trim, relocation, other or none)	Will project activities be within 15 meters of tree	Relocation	Joshua Tree
JT 109	34.54943467	-117.4290445	Dead							Not Applicable	JT 109
JT 110	34.54952967	-117.4290132	Live	5.2	C	Yes	None			Not Applicable	JT 110
JT 111	34.54955233	-117.4289983	Live	0.7	A	No	None			Not Applicable	JT 111
JT 112	34.54959317	-117.4292563	Dead							Not Applicable	JT 112
JT 113	34.54950767	-117.4293192	Live	1.8	B	No	None			Not Applicable	JT 113
JT 114	34.54937183	-117.4293495	Live	4.2	B	Yes	None			Not Applicable	JT 114
JT 115	34.549551	-117.429449	Live	1.7	B	No	None			Not Applicable	JT 115
JT 116	34.54956433	-117.4295522	Live	3.3	B	Yes	None			Not Applicable	JT 116
JT 117	34.54955	-117.4296417	Live	1.1	B	No	None			Not Applicable	JT 117
JT 118	34.549684	-117.429711	Live	3.2	B	Yes	None			Not Applicable	JT 118
JT 119	34.54938583	-117.430034	Live	4	B	Yes	None			Not Applicable	JT 119
JT 120	34.54945417	-117.4298053	Live	5	C	Yes	None			Not Applicable	JT 120
JT 121	34.54942033	-117.4297173	Live	0.6	A	No	None			Not Applicable	JT 121
JT 122	34.549228	-117.4297028	Live	1.8	B	Yes	None			Not Applicable	JT 122

Joshua Tree	Latitude (WGS 84)	Longitude (WGS 84)	Live or Dead	Height of Tree (meters)	Size Class	Mature Tree (Branched)	Flowering or Fruiting Stage (flowers, fruits, or none)	Impact to Tree (removal, trim, relocation, other or none)	Will project activities be within 15 meters of tree	Relocation	Joshua Tree
JT 123	34.54922667	-117.4296595	Live	0.9	A	No	None			Not Applicable	JT 123
JT 124	34.54920933	-117.4289175	Live	4.5	B	Yes	None			Not Applicable	JT 124
JT 125	34.5493085	-117.4286358	Live	5.3	C	Yes	None			Not Applicable	JT 125
JT 126	34.54920617	-117.4283797	Live	5.9	C	Yes	None			Not Applicable	JT 126
JT 127	34.54910783	-117.4283123	Live	5.8	C	Yes	None			Not Applicable	JT 127
JT 787	34.55011383	-117.4298468	Live	1.2	B	No	None			Not Applicable	JT 787
JT 788	34.549758	-117.4301002	Live	2	B	No	None			Not Applicable	JT 788
JT 789	34.55002767	-117.4295628	Live	2.3	B	No	None			Not Applicable	JT 789
JT 790	34.55011083	-117.4295442	Dead							Not Applicable	JT 790
JT 791	34.54998383	-117.4294298	Live	2.5	B	No	None			Not Applicable	JT 791
JT 792	34.54989767	-117.4293958	Live	2.2	B	No	None			Not Applicable	JT 792
JT 793	34.54974233	-117.4295085	Dead							Not Applicable	JT 793
JT 794	34.54984083	-117.4292182	Live	1.8	B	No	None			Not Applicable	JT 794
JT 795	34.5499235	-117.4290745	Live	5.6	C	Yes	None			Not Applicable	JT 795

Joshua Tree	Latitude (WGS 84)	Longitude (WGS 84)	Live or Dead	Height of Tree (meters)	Size Class	Mature Tree (Branched)	Flowering or Fruiting Stage (flowers, fruits, or none)	Impact to Tree (removal, trim, relocation, other or none)	Will project activities be within 15 meters of tree	Relocation	Joshua Tree
JT 796	34.54993883	-117.4288368	Dead							Not Applicable	JT 796
JT 797	34.55014767	-117.4285598	Live	4.6	B	Yes	None			Not Applicable	JT 797
JT 798	34.54980867	-117.4286462	Live	2.7	B	Yes	None			Not Applicable	JT 798
JT 799	34.54975417	-117.4286157	Live	2.9	B	Yes	None			Not Applicable	JT 799
JT 800	34.5496695	-117.4287798	Live	1.2	B	No	None			Not Applicable	JT 800
JT 918	34.54864917	-117.4299332	Live	0.9	A	No	None			Not Applicable	JT 918
JT 919	34.5485945	-117.4298393	Live	0.3	A	No	None			Not Applicable	JT 919
JT 920	34.54866583	-117.4297202	Live	0.9	A	No	None			Not Applicable	JT 920
JT 921	34.548569	-117.4296155	Live	1	B	No	None			Not Applicable	JT 921
JT 922	34.54853417	-117.4294015	Live	2	B	No	None			Not Applicable	JT 922
JT 923	34.54846517	-117.4293615	Live	1.1	B	No	None			Not Applicable	JT 923
JT 924	34.54853267	-117.4292682	Live	0.9	A	No	None			Not Applicable	JT 924
JT 925	34.54853067	-117.4292165	Live	0.3	A	No	None			Not Applicable	JT 925
JT 926	34.54852067	-117.4290898	Live	3.6	B	No	None			Not Applicable	JT 926

Joshua Tree	Latitude (WGS 84)	Longitude (WGS 84)	Live or Dead	Height of Tree (meters)	Size Class	Mature Tree (Branched)	Flowering or Fruiting Stage (flowers, fruits, or none)	Impact to Tree (removal, trim, relocation, other or none)	Will project activities be within 15 meters of tree	Relocation	Joshua Tree
JT 927	34.54850833	-117.4290797	Live	4.4	B	Yes	None			Not Applicable	JT 927
JT 928	34.54852717	-117.4290923	Live	1	B	No	None			Not Applicable	JT 928
JT 929	34.54852733	-117.429073	Live	0.9	A	No	None			Not Applicable	JT 929
JT 930	34.54860633	-117.4288615	Live	1.2	B	No	None			Not Applicable	JT 930
JT 931	34.54864817	-117.428746	Live	2.1	B	No	None			Not Applicable	JT 931
JT 932	34.548479	-117.4286612	Live	2.2	B	No	None			Not Applicable	JT 932
JT 933	34.54853883	-117.428373	Live	3.4	B	Yes	None			Not Applicable	JT 933
JT 934	34.54852017	-117.4280385	Live	4.1	B	Yes	None			Not Applicable	JT 934
JT 935	34.548516	-117.4280492	Live	2.9	B	Yes	None			Not Applicable	JT 935
JT 936	34.54850883	-117.4280362	Live	0.3	A	No	None			Not Applicable	JT 936
JT 937	34.548497	-117.428044	Live	0.3	A	No	None			Not Applicable	JT 937
JT 938	34.5489155	-117.4286608	Live	5	C	Yes	None			Not Applicable	JT 938
JT 939	34.54889733	-117.4289137	Live	1.6	B	No	None			Not Applicable	JT 939
JT 940	34.54895033	-117.4289607	Live	5.5	C	Yes	None			Not Applicable	JT 940

Joshua Tree	Latitude (WGS 84)	Longitude (WGS 84)	Live or Dead	Height of Tree (meters)	Size Class	Mature Tree (Branched)	Flowering or Fruiting Stage (flowers, fruits, or none)	Impact to Tree (removal, trim, relocation, other or none)	Will project activities be within 15 meters of tree	Relocation	Joshua Tree
JT 941	34.54894233	-117.4289768	Live	0.8	A	No	None			Not Applicable	JT 941
JT 942	34.54892783	-117.428996	Dead							Not Applicable	JT 942
JT 943	34.54891367	-117.4290175	Live	0.8	A	No	None			Not Applicable	JT 943
JT 944	34.548871	-117.4290182	Live	5.1	C	Yes	None			Not Applicable	JT 944
JT 945	34.54896517	-117.42912	Live	1.9	B	No	None			Not Applicable	JT 945
JT 946	34.54904967	-117.4290323	Live	0.9	A	No	None			Not Applicable	JT 946
JT 947	34.549098	-117.4291365	Live	3.2	B	Yes	None			Not Applicable	JT 947
JT 948	34.54906983	-117.4291443	Live	2.8	B	Yes	None			Not Applicable	JT 948
JT 949	34.54912167	-117.429257	Live	1.7	B	No	None			Not Applicable	JT 949
JT 950	34.54894933	-117.4295717	Live	1.6	B	No	None			Not Applicable	JT 950
JT 951	34.54882217	-117.4299277	Live	1	B	No	None			Not Applicable	JT 951
JT 952	34.54896067	-117.4299762	Live	0.3	A	No	None			Not Applicable	JT 952
JT 953	34.54903233	-117.4299668	Live	1.3	B	No	None			Not Applicable	JT 953
JT 954	34.54913967	-117.4299332	Live	0.9	A	No	None			Not Applicable	JT 954

Joshua Tree	Latitude (WGS 84)	Longitude (WGS 84)	Live or Dead	Height of Tree (meters)	Size Class	Mature Tree (Branched)	Flowering or Fruiting Stage (flowers, fruits, or none)	Impact to Tree (removal, trim, relocation, other or none)	Will project activities be within 15 meters of tree	Relocation	Joshua Tree
JT 955	34.54913133	-117.4297697	Live	4.1	B	Yes	None			Not Applicable	JT 955
JT 956	34.5491385	-117.429621	Live	1.5	B	No	None			Not Applicable	JT 956
JT 957	34.54917633	-117.4295787	Live	2.2	B	Yes	None			Not Applicable	JT 957
JT 958	34.54918833	-117.4289802	Live	4.4	B	Yes	None			Not Applicable	JT 958
JT 959	34.5491815	-117.4287575	Live	3	B	Yes	None			Not Applicable	JT 959
JT 960	34.54919567	-117.428423	Live	5.8	C	Yes	None			Not Applicable	JT 960

5.0 CONCLUSIONS

The site is located within the reduced mitigation fee area by CDFW for the Western Joshua Tree Conservation Act. A total of 84 Joshua trees occur within the boundaries of the property (Figures 1, 2 and 3). As stated above based on the evaluation and analysis of each tree it was determined that 16 (19.1%) Joshua trees are less than 1 meter in height and are categorized under size class “A”. There are 50 (59.5%) Joshua trees 1 meter or greater but less than 5 meters in height categorized under size class “B”. There are 11 (13.1%) Joshua trees 5 meters or greater in height categorized under size class “C”. A total of 7 (8.3%) Joshua trees were tagged as dead. As indicated in Table 4-1, the majority of the Joshua trees are less than 5 meters in height.

As of July 10, 2023, California legislature passed and signed the Western Joshua Tree Conservation Act (WJTCA, Senate Bill 122) into effect listing the western Joshua tree (*Yucca brevifolia*) as a candidate endangered species. The WJTCA authorizes CDFW to oversee the various permitting processes dealing with mitigation and/or removal of western Joshua trees. Therefore, any attempt to remove a Joshua tree from its current position will require a California Endangered Species Act Incidental Take Permit (CESA, ITP) or a Western Joshua Tree Conservation Act Incidental Take Permit (WJTCA, ITP). CDFW is the lead agency in the decision making of the projects forward progress pertaining to western Joshua trees.

The City of Adelanto’s Municipal Code (Chapter 17.57.040) requires preservation of Joshua trees given their importance in the desert community. A qualified City-approved biologist or arborist should be retained to conduct any future removal/transplanting activities and should follow the protocol of the City’s Municipal Code and Protected Native Vegetation Plan provided by the City’s Planning Division.

6.0 REFERENCES

- Brittingham, S. and W. Lawrence. 2000. Facilitation of *Yucca brevifolia* Recruitment by Mojave Desert Shrubs. *Western North American Naturalist* 60(4), pp. 374-383.
- Cal. Fish & G. Code § 1927.3, Added by Stats 2023 ch 51 (SB 122),s 5, eff. 7/10/2023.
- City of Hesperia. 1990. Native Desert Vegetation Ordinance, Municipal Code: Chapter 16.24.
- Hickman, James C. The Jepson Manual Higher Plants of California. University of California Press. Berkeley, CA. 3rd Edition. 1996.
- Holland, Robert F. 1986 Preliminary Description of the Terrestrial Natural Communities of California. Prepared for the California Natural Diversity Data Base. California Department of Fish and Game. Sacramento, California. 160 pp.
- Johnson, H. 1976 vegetation and Plant Communities of Southern California Deserts- a functional view. In Symposium proceedings: Plant communities of Southern California. June Latting, editor. California Native Plant Society, Spec. No. 2 Berkeley, CA.
- Munz, Philip A. 1974. A Flora of Southern California. University of California Press, Berkeley, California. 1086 pp.
- SB 122, Committee on Budget and Fiscal Review. Public resources trailer bill. SEC 5, Chapter 11.5. Western Joshua Tree Conservation Act.

7.0 CERTIFICATION

I hereby certify the statements furnished above and in the attached exhibits, present the data and information required for this Joshua tree survey and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief. Field work conducted for this survey was performed by Ryan Hunter and Brian Bunyi.

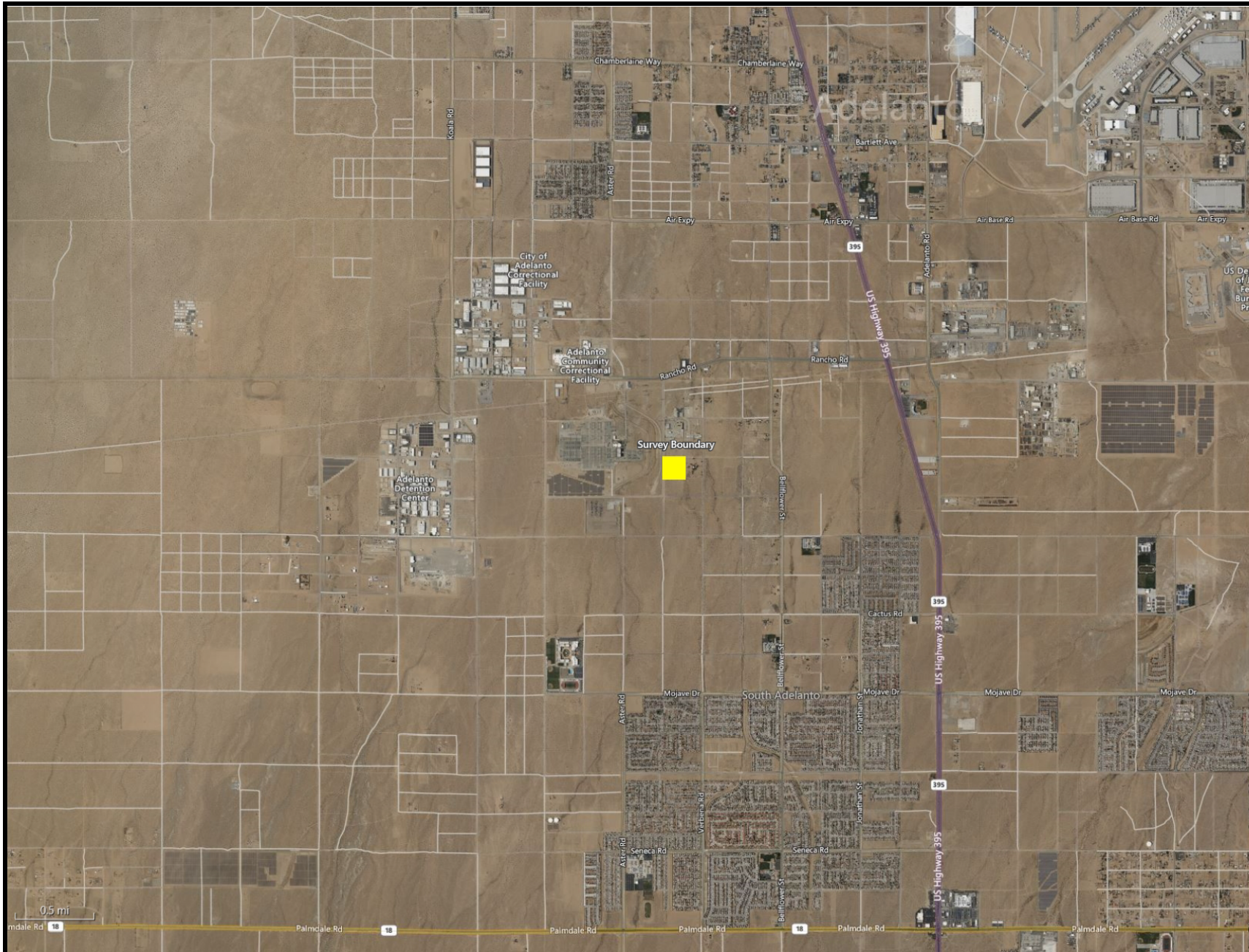
Date: October 30, 2023, Signed: *Ryan Hunter*
Brian Bunyi

Field Work Performed by: Ryan Hunter
Lead Environmental Scientist & Wildlife Biologist

Brian Bunyi
Environmental Scientist & Wildlife Biologist

APPENDIX A

Figures



Legend
 Survey Boundary

	Figure 1: Regional Exhibit Produced By: RCA Associates Inc.	SE of the Intersection of Daisy Rd. and Cassia Rd. in Adelanto, CA.	Source:	Uinta Software
			Acreage:	9.11-Acres (Approximately)
			Project #:	2023-122





Legend

 Survey Boundary



Figure 2: Vicinity Exhibit

Produced By: RCA Associates Inc.

SE of the Intersection of Daisy Rd. and Cassia Rd. in Adelanto, CA.

Source: Uinta Software

Acreage: 9.11-Acres (Approximately)

Project #: 2023-122



APPENDIX B

City of Adelanto
Municipal Code: Chapter 17.57.040