Appendix D-3

Joshua Tree Relocation Plan

Pre-Construction Joshua Tree Preservation, Protection, and Relocation Plan for the Hesperia Commerce Center II Project

Prepared for:

City of Hesperia, Planning Department
9700 Seventh Avenue
Hesperia, California 92645
Contact: Ryan Leonard, Senior Planner

Prepared by:

DUDEK
38 North Marengo Avenue
Pasadena, California 91101
Contact: Chris Kallstrand

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APPENDIX

A Project Location

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Acronyms and Abbreviations

Acronym/Abbreviation	Definition
City	City of Hesperia
HMC	Hesperia Municipal Code
ISA	International Society of Arboriculture
JTRTP	Joshua Tree Report and Transplanting Plan
project	Hesperia Commerce Center II Project

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1 Introduction

The purpose of this Joshua Tree Preservation, Protection, and Relocation Plan for the proposed Hesperia Commerce Center II Project (project) is to provide detailed specifications for the Covington Group to meet the requirements of Chapter 16.24 of the City of Hesperia's (City) Municipal Code to protect, preserve, and mitigate impacts to Joshua trees (*Yucca brevefolia*) as a result of the proposed project. Chapter 16.24 of the Hesperia Municipal Code (HMC) states that "it is in the public interest to preserve and protect specified desert native plants and provide for the conservation and wise use of our desert resources, through regulation, guidelines and enforcement that manage the removal or harvesting of such plants. They are also necessary to augment and coordinate with the State Department of Food and Agriculture in its efforts to implement and enforce the Desert Native Plant Act." Furthermore, the City's Protected Plant Policy (HMC 16.24) states the following for Tentative Tract, non-single-family residential (commercial, industrial, apartments):

- A protected plant plan shall be prepared by a certified arborist or registered botanist.
- An application and fee shall be completed and paid to the City.
- Healthy, transplantable plants shall be relocated on-site or may be placed in an adoption program.

As such, this Joshua Tree Preservation, Protection, and Relocation Plan addresses the requirements of the City's Protected Plant Policy and provides details for the initial survey of the site's Joshua trees, detailed specifications for the protection of trees to be preserved on site, and relocation/salvage requirements for those trees requiring removal and relocation.

1.1 Applicability

The provisions of this Joshua Tree Preservation, Protection, and Relocation Plan apply toward the protection and removal of Joshua trees located within the City of Hesperia, California, as defined in the City's Protected Plant Policy (HMC 16.24).

1.2 Project Location

The project site is located in the eastern part of the City, within the Victor Valley region in San Bernardino County (Figure 1, Regional Map). The project site is bound by Yucca Terrace Drive to the north, Highway 395 to the east, Phelan Road to the south, and Los Angeles Bureau of Power and Light Road to the west (Figure 2, Vicinity Map). Freeway access to the project site includes Highway 395 immediately adjacent to the east, and Interstate 15, located approximately 1 mile east. The approximately 197.26 acres of vacant land are located at the northwest quadrant of Highway 395 and Phelan Road/Main Street. The project site consists of Assessor's Parcel Numbers 306435103, 306436101, 306439101, and 306440102. Specifically, the project site is located in Section 16, Township 4 North, Range 5 West, as depicted on the U.S. Geological Survey Baldy Mesa, California 7.5-minute topographic quadrangle map.

1.3 Project Characteristics

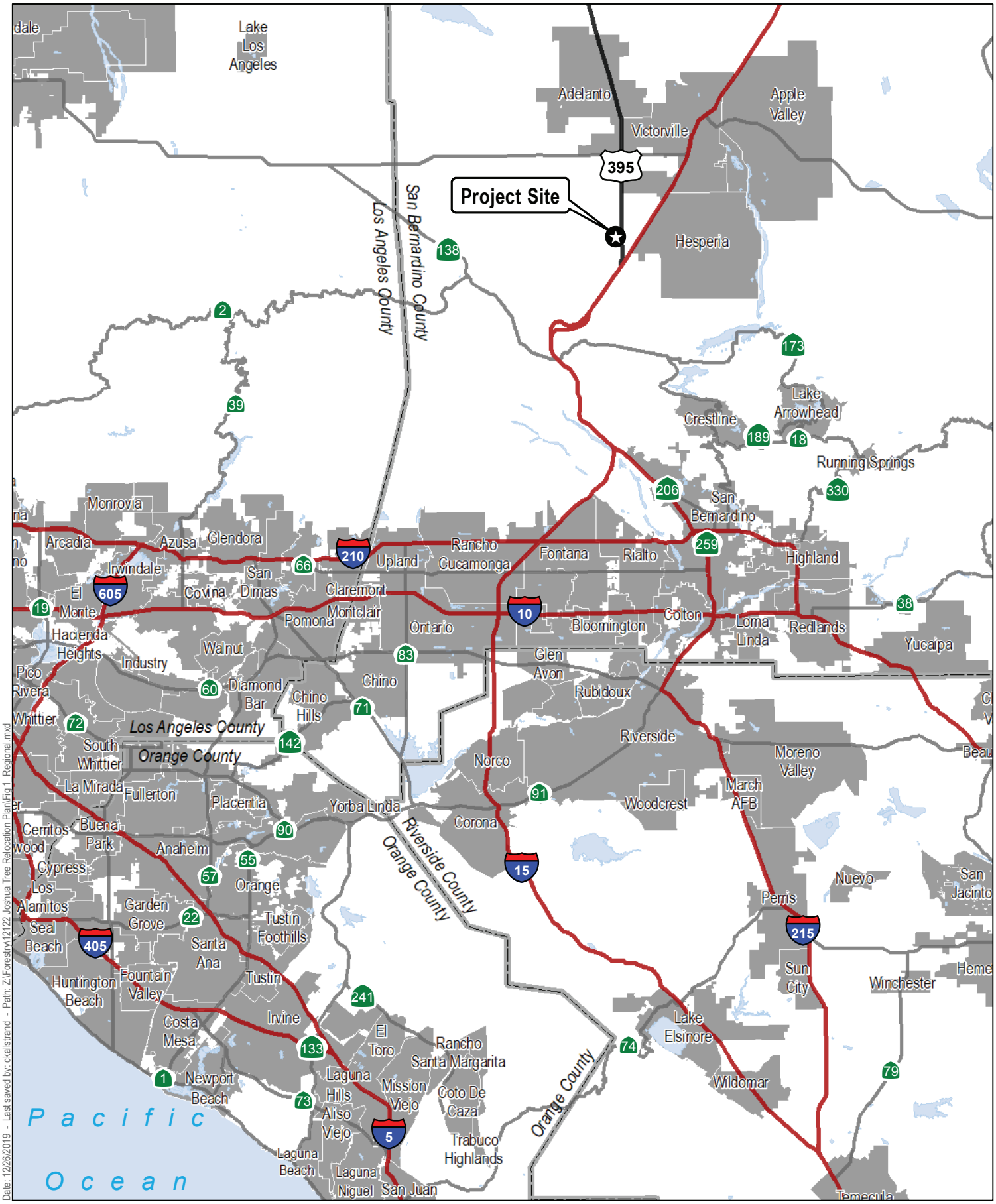
The project applicant, Covington Group, proposes to develop approximately 194.8 acres of vacant land in the City with the proposed Hesperia Commerce Center II Project (Appendix A), which would include construction and operation of three industrial distribution warehouse buildings.

Building 1 (the northwestern-most building) would be 1,571,582 square feet (inclusive of 20,000 square feet of office/mezzanine); Building 2 (the southernmost building) would be 2,073,000 square feet (inclusive of 20,000 square feet of office/mezzanine), which would potentially be divided into two spaces within the same building; and Building 3 (the eastern-most building) would be 108,366 square feet (inclusive of 20,000 square feet of office/mezzanine). In total, the project would provide 3,758,908 square feet of industrial/warehouse space and associated improvements, including loading docks, approximately 1,762 tractor-trailer stalls, roughly 1,635 passenger-vehicle parking spaces, and approximately 7% landscape area coverage.

1.4 Site Characteristics

The approximately 194.8-acre, irregularly shaped project site consists of vacant, undeveloped land that is generally located on the northwestern corner of Phelan Street and Highway 395. Directly north of the project site is vacant, undeveloped land and scattered commercial and light industrial uses. Highway 395; vacant, undeveloped land; and multi-family residential uses occur east of the project site. Vacant, undeveloped land and scattered rural single-family residential, commercial, and light industrial uses occur south of the project site. A utility corridor runs along the eastern edge of the project site. Additionally, vacant, undeveloped land and rural single-family residential uses occur east of the project site.

Topography on site is generally flat and ranges in elevation from approximately 3,565 to 3,610 feet above mean sea level. Vegetation on site is Joshua Tree Woodland, a designated California Department of Fish and Wildlife Natural Community of Concern. Species found on site include Joshua tree, California juniper (*Juniperous californica*), creosote (*Larrea tridentata*), California buckwheat (*Eriogonum fasciculatum*), and rubber rabbitbrush (*Ericameria nauseosa*).



SOURCE: Esri

FIGURE 1

Regional Map

Pre-Construction Joshua Tree Preservation, Protection, and Relocation Plan for the Hesperia Commerce Center II Project

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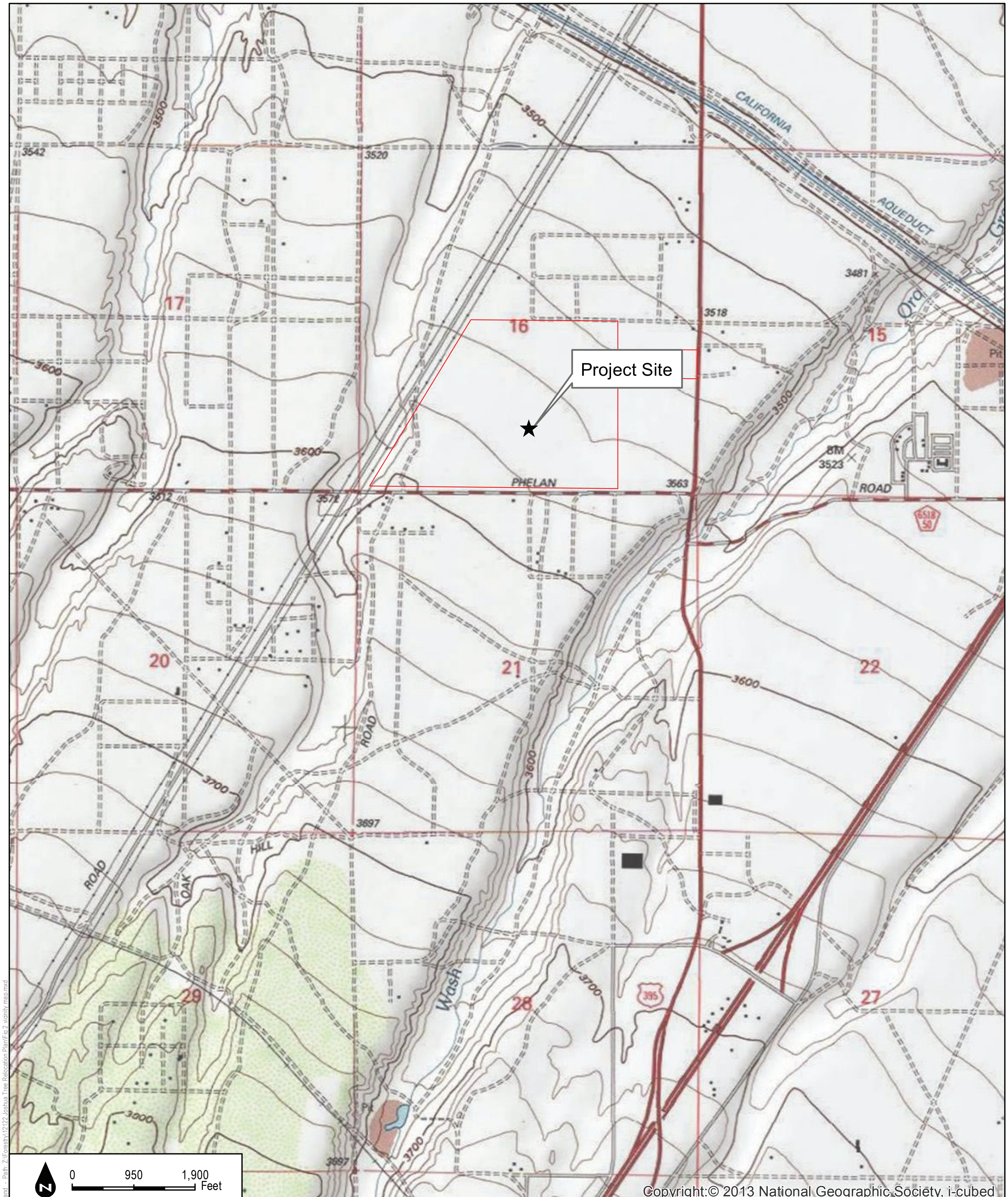

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SOURCE: USGS 7.5' Poway, CA Quadrangle

Figure 2

Vicinity Map

Pre-Construction Joshua Tree Preservation, Protection, and Relocation Plan for the Hesperia Commerce Center II Project

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2 Policy and Permits

2.1 Policy

Per the City's Protected Plant Policy (HMC 16.24), the City seeks to preserve the natural environment in the City while respecting the lawful development of private property. As such, native protected plants create a dilemma because of their high public appeal coupled with very limited transplant success and potential safety concerns for the public. Furthermore, HMC 16.24 states the following regarding Tentative Tract, non-single-family residential (commercial, industrial, apartments):

- Tentative Tract, non single-family residential (commercial, industrial, apartments, etc.):
  - A protected plant plan shall be prepared by a certified arborist or registered botanist.
  - An application and fee shall be completed and paid to the City.
  - Healthy, transplantable plants shall be relocated on-site or may be place in an adoption program.

In addition to the requirements previously stated, HMC 16.24 discusses Approval of an Adoption Program, as follows:

1. Approved Adoption Program

   To qualify as an approved adoption program the developer shall provide a letter on company letterhead, describing the program and the community notification process. The program shall identify the following, as a minimum.

   A. A public notice process which may include publication in local newspapers, radio advertisement, hand distributed fliers, and other noticing techniques. Noticing must occur over a period of not less than three weeks.
   B. The location where the trees may be viewed by the public and a clearly identified period of at least two weeks (including weekends) when trees/plants are available for adoption.
   C. The person that will be available on-site to assist those adopting trees to find the actual trees/plants for removal. An on-site or cell phone number for that person is required.
   D. A note that a copy of the City Joshua Tree Transplanting Guidelines will be provided to each adopter.
   E. A log showing the name, address, and phone number of each adopter and the number and type of trees/plants they received.

Note: At least 50% of the transplantable trees and plants shall be adopted or the remaining number below 50% shall be purchased at $350 per transplantable tree.

Purchased trees must be recycled at Advance Disposal.

2.2 Permits

Per the City's Protected Plant Policy (HMC 16.24), a Joshua tree relocation and removal application must be completed and fee paid to the City prior to initiation removal and/or relocation of Joshua trees. HMC Section 16.24.040 states the following:

A removal permit shall be required for the removal of any native tree or plant that is subject to the provisions of this chapter.

A. A land use application, a building permit and all other development permits (e.g. grading, mobile home set downs, etc.), shall consider and include a review of any proposed native tree or plant removal. Any approved land use application and/or development permit shall be a permit for the removal of native plants, if such land use application or development permit specifically reviews and approves such removals. Such reviews shall consider and require compliance with the provisions of this chapter.
B. The reviewing authority may require certification from an appropriate tree expert or desert native plant expert that such tree removals are appropriate, supportive of a healthy environment and are in compliance with the provisions of this article.
C. Removals of native trees or plants that are not requested in conjunction with a land use application or development permit may be accomplished only under a permit issued by either the county agricultural commission or the fire marshal, subject to the provisions of this article.
D. The building official shall require a preconstruction inspection prior to approval of development permits.
E. The duration of a plant or tree removal permit when issued in conjunction with a land use application and/or a development permit shall be coterminous with the duration of the associated application or permit, unless otherwise specified. The reviewing authority shall specify the expiration date for all other tree and/or plant removal permits.

2.3 Findings for Removals

Per HMC Section 16.24.040, the reviewing authority must authorize the removal of a native tree or plant subject to the provisions of the HMC only if the following findings are made:

A. The removal of the native tree or plant does not have a significant adverse impact on any proposed mitigation measures, soil retention, soil erosion and sediment control measures, scenic routes, flood and surface water runoff and wildlife habitats (flora and fauna), especially those with limited habitats (e.g., eagles).
B. The removal of the native tree or plant is justified for one of the following reasons:
    1. The location of the native tree or plant and/or its drip line interferes with the reasonable improvement of the site with an allowed structure, sewage disposal area, paved area or other approved improvement or ground disturbing activity. Also such improvements have been designed in such a manner as to save as many healthy native trees and/or plants as reasonably practicable in conjunction with the proposed improvements;
    2. The location of the native tree or plant and/or its drip line interferes with the planned improvement of a street or development of an approved access to the subject or adjoining private property;
    3. The location of the native tree or plant is hazardous to pedestrian or vehicular travel or safety as determined by the director of transportation, flood control and airports or other county reviewing authority;

4. The native tree or plant or its presence interferes with or is causing excessive damage to utility services or facilities, roadways, sidewalks, curbs, gutters, pavement, sewer line(s), drainage or flood control improvements, foundations, existing structures, or municipal improvements;
5. The condition or location of the native plant or tree is adjacent to and in such close proximity to existing or proposed structure that the native plant or tree has or will sustain significant damage.

C. Joshua trees that are proposed to be removed have been transplanted or stockpiled for future transplanting wherever possible. In the instance of stockpiling the permittee has posted a bond to insure such Joshua trees are transplanted appropriately.

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3 Pre-Development Joshua Tree Survey and Report

3.1 Joshua Tree Survey

Prior to project initiation, the project applicant is required to conduct a Joshua tree survey of the approximately 194.8-acre project site to detail the location and total number of Joshua trees located on the site. The survey will encompass the entire site and any off-site improvement areas. The inventory will be conducted by a certified arborist or registered botanist, and will map the GPS position of each Joshua tree found on site for inclusion in a report.

During the survey, the attributes of each tree will be collected, to include the following information, at a minimum:

- Species
- Diameter at standard height (4.5 feet above ground level)
- Height (feet)
- Spread (feet)
- Health (Excellent, Good, Fair, Poor, Nearly Dead, and Dead)[1]
- Number of branches
- Clonal status (clone or single trunk)

All inventoried and assessed protected trees will be tagged with an aluminum tag bearing a unique identification number, which will be placed on the main trunk on the north side of each Joshua tree. Due to relocation requirements, it is important that each tree be tagged on the north side to allow for proper orientation during relocation (each relocated Joshua tree will need to be orientated in the same direction as its original location).

3.2 Joshua Tree Report and Transplanting Plan

Following completion of the Joshua tree survey, a Joshua Tree Report and Transplanting Plan (JTRTP) will be prepared that details the findings of the survey. The JTRTP will comply with the requirements of the City and will discuss the regulatory setting, permitting requirements, survey methods, survey findings, recommendations, and detailed relocation specifications. The JTRTP will include a tree information matrix detailing the attributes of each tree and its relocation potential. It will include a plot plan showing the on-site locations of all Joshua trees in accordance with the HMC, and detail the relocation and/or future storage location of all trees proposed for relocation.

[1] **Health Rating Description**
A = Excellent. Tree has excellent health and strong vigor. No damage. Flowering and fruiting expected. Typically only given to large, high-quality specimens (taller than 15 feet in height). Transplanting generally not recommended due to size.
B = Good. Tree has good health and vigor. All branches are alive and healthy. Damage is very localized and minimal. Flowering and fruiting likely, if tree is large enough. Tree is transplantable.
C = Fair. Tree health average. Some stressors or damage possible, but any damage is minimal to moderate (e.g., rodent grazing, insect damage). No dead/broken branches. Tree is transplantable.
D = Poor. Tree under stress, and overall health in decline, or tree has taken significant damage. Mortality likely unless stressors relieved and/or conditions change. Broken/dead limbs likely present. Tree is generally not transplantable.
E = Nearly Dead. Tree in extreme decline. One or more branches dead. One or more branches dying. Physical damage likely present. Damage is significant and extensive. Mortality expected within 2 to 4 years. Tree is not transplantable.
F = Dead. Tree is dead.

3.3 Plot Plan Requirements

The HMC Section 16.24.060 states the following:

> Prior to the issuance of a native tree or plant removal permit in conjunction with a development permit and/or approval of a land use application which authorizes such removal, a plot plan or grading plan shall be approved by the appropriate City review authority for each site indicating exactly which trees of plants are authorized to be removed. The required information can be added to any other required site plan. Prior to issuance of development permits in areas with native trees or plants that are subject to the provisions of this chapter, a preconstruction inspection shall be conducted by the appropriate authority. Such preconstruction inspections may be combined with any other required inspection.

4 Relocation Requirements

4.1 Joshua Tree and Relocation Plan Criteria

The JTRTP will identify the location and number of each tree proposed to be transplanted, removed, protected, and/or adopted (see Section 5, Adoption Program). Furthermore, the JTRTP will identify a designated storage and relocation location for the proposed transplanted/salvaged trees. The following details and specifications will be included in the JTRTP:

- **Contractor:** A contractor with experience relocating Joshua trees, who will be salvaging/transplanting the trees and relocating them to the designated storage and/or relocation site, will be identified.
- **Oversight/Monitoring:** Tree relocation, stockpiling, maintenance, and watering will be monitored by a certified arborist or registered botanist.
- **Tree size:** Due to the low success rate of mature Joshua tree relocation, it is recommended that the JTRTP only propose the relocation of trees found to be in fair to good health and are less than 10 feet in height.
- **Timeframe:** The timeframe during which the relocation will occur will be detailed. To increase the chances of a successful relocation, it is recommended that the trees be relocated from October through March. To increase Joshua tree survivability, the trees will not be dug-out and/or salvaged in warmer months (April through September). Trees will be replanted in the same season they were initially dug-out. The JTRTP will detail the expected timeframe for digging and transplanting the trees.
- **Location:** The JTRTP will detail all temporary storage and final relocation planting locations. Should it be found that all or some of the transplantable trees cannot be relocated on site the applicant may qualify for an approved adoption program. Details regarding the City's adoption program can be found in Section 5 of this report and Section 16.24 of the HMC.
- **Transplant location soil conditions:** The Joshua tree relocation receiver sites will have excellent drainage, since Joshua trees do not grow well in poorly drained sites, such as valleys. Acceptable soil types for relocation sites include silts, loams, and/or sands described as fine, loose, well-drained, and/or gravelly. Prior to selection of the Joshua tree relocation receiver sites it is recommended that a soil analysis report be provided to confirm appropriate soil conditions.
- **Method of relocation:** Joshua trees have fragile, shallow root systems that are easily damaged during the salvaging and relocation process. It is important during the excavation of the rootball, that as much of the existing root structure as possible is captured, so that an intact rootball is maintained during the salvaging and relocation process. As such, the following is recommended to help increase the chances of successful salvage/relocation:
    - Trees will be salvaged and relocated by a contractor with experience successfully relocating Joshua trees.
    - Tree relocation is best completed through the use of machinery. A front-end-loader or hydraulic tree spade is recommended. However, the hydraulic tree spade may be best used in instances where the soil type is sandy or silty. The goal of relocation is to maintain a high root-to-shoot ratio.
    - Damaged and exposed roots will be cleaned up and dusted with sulfur or a fungicide to decrease the likelihood of root pathogens (Bainbridge 2007).
    - Hand excavation may be recommended for site preparation, rocky/compacted soils, and/or relocation.
    - Joshua trees will be pre-watered 24 hours prior to relocation.
    - Equipment will be sterilized prior to digging up and transplanting each tree. Sterilization will reduce the likelihood of pathogens being passed from tree to tree.

- **Planting direction:** Proper orientation of the relocated trees is important to the success of the salvaged trees. Improper planting can result in sunburn and growth distortion. As such, the north side of each tree will be clearly marked/tagged prior to digging, and each tree will be replanted (or stored) in the same orientation as it was prior to removal.
- **Post-transplant stabilization:** Larger plants may require stabilization until the roots have had the opportunity to become reestablished. To support larger trees, guy-wire staking may be necessary. Guy-wires will be connected to the ground (i.e. preferably via a "dead-man" anchor below grade) and attached to the trunk or limbs with an expandable, non-abrasive connector. Multiple guy-wires may be required (i.e., recommended three equally spaced around the rootball for stability).
- **Storage:** Storage or stockpiling in the short-term (i.e., 1 to 4 weeks), is intended to allow for the storage of Joshua trees for replanting later on the project site or at an approved off-site location. Following are instructions for tree storage:
    - During storage all trees will be orientated in the same direction that they were prior to removal.
    - Trees will be stabilized as necessary through the use of guy-wires, as previously described (see "Post-transplant stabilization").
    - To reduce sun scalding and stress, shading the trees is recommended through the use of a shade cloth that has a minimum shade value of 30%.
    - Duration of stockpiling/storage: A minimum of 3 days of stockpiling/storage is recommended to allow for root callusing. A maximum of 2 weeks without boxing or ditching stockpiled trees is recommended.
        - Trees stockpiled/stored for extended periods (i.e., longer than 2 weeks) will be temporarily stored in tree box containers or within shallow ditches, backfilled with native soils, and tamped down.
        - Trees shall be adequately staked/guyed during the stockpile storage period
    - Extended stockpiling (over 30 days) is not recommended.

- **Watering and Irrigation:**
    - Stockpiled trees: Depending on ambient daytime temperatures, it is recommended that stockpiled trees be watered one to two times per week. Soil moisture levels will be routinely checked by the monitoring arborist or biologist to ensure appropriate soil moisture levels. Irrigation should be completed through either temporary irrigation systems or by hand watering. The soil should be allowed to dry out between irrigation cycles.
    - Final planting location trees: Trees that have been relocated into their final planting location will be watered 1 to 2 times per week for an initial 2 to 3 months depending on the season and rainfall averages, tree size, and watering zone size. Irrigation will be adjusted seasonally, with a goal of removing the transplanted trees from supplemental irrigation after 2 years, and growth resumes.

        Note: The total amount of water required for each tree will be dependent on the season and tree size. Irrigation needs may range from 2 to 20 gallons per watering cycle. The specific irrigation schedule and watering requirements for each tree will be defined in the JTRTP. Persistent wet soil will cause mildew and root rot. As such, soil moisture levels will be routinely checked at the time of watering, and the soil will be allowed to dry out between watering cycles. The watering zone for each tree (distance from the trunk) will be defined for each tree, based upon the tree height and rootball size. The JTRTP will detail the method of irrigation (i.e., irrigation systems or hand watering) for each tree.

- **Post-relocation care:** The JTRTP will identify the party responsible for future care and maintenance of all relocated Joshua trees. Post-relocation care will include the following:
  - Approval of and adherence to the irrigation schedule
  - Staking and guy-wiring inspection and removal
  - Monitoring schedule

- **Monitoring and Reporting:**
  - Monitoring: An arborist or registered biologist will be on site to oversee all phases of the Joshua trees transplantation, stockpiling, maintenance and watering, and replanting if necessary.
  - Reporting: Status reports will be prepared following all salvaging and replanting activities. For the initial 3 months, weekly monitoring by a certified arborist or registered biologist is recommended to ensure that the watering needs of each relocated tree are being met. Following the initial 3-month monitoring period, it is recommended that the relocated trees be monitored on a monthly basis for 9 months. Following, the first year of monitoring, it is recommended that the trees be monitored quarterly (every 3 months) for 3 years. Annual reports will be prepared at the end of each calendar year to document the status of the transplantation program and health/survivability of the relocated trees.
  - Long-term mitigation monitoring requirements: The City does not define a minimum post-transplant monitoring period. However, an annual inspection and report for 4 years is recommended. Reports of all monitoring will be submitted to the City. Monitoring will track the location, health, and status of each transplanted Joshua tree. The monitoring arborist or registered biologist should include recommendations for maintenance and irrigation, should they be needed.

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5 Adoption Program

Should it be found that all or some of the transplantable trees cannot be relocated on site, the applicant may qualify for an Approved Adoption Program. Details regarding the City's adoption program are contained its Protected Plant Policy and are as follows (HMC Section 16.24):

Approved Adoption Program:

To qualify as an Approved Adoption Program, the developer shall provide a letter on company letterhead, describing the program and the community notification process. The program shall identify the following, as a minimum:

A. A public notice process which may include publication in local newspapers, radio advertisement, hand distributed fliers, and other noticing techniques. Noticing must occur over a period of not less than three weeks.

B. The location where the trees may be viewed by the public and a clearly identified period of at least two weeks (including weekends) when trees/plants are available for adoption.

C. The person that will be available on-site to assist those adopting trees to find the actual trees/plants for removal. An on-site or cell phone number for that person is required.

D. A note that a copy of the City Joshua Tree Transplanting Guidelines will be provided to each adopter.

E. A log showing the name, address, and phone number of each adopter and the number and type of trees/plants they received.

Note: At least 50% of the transplantable trees and plants shall be adopted or the remaining number below 50% shall be purchased at $350 per transplantable tree.

Purchased trees must be recycled at Advance Disposal.

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6 Success Criteria

6.1 Transplantation Success Criteria

The City does not define a minimum success ratio for transplanted Joshua trees. Due to the low relocation success rate of Joshua trees, the transplantation program would be considered successful following four growing seasons—including two growing seasons with supplemental irrigation and two without—and the transplanted trees maintain a minimum of 70% survivability. The final number of trees required to meet the recommended 70% threshold will be defined in the JTRTP. Should the threshold drop below 70%, it is recommended that trees be obtained from an un-related adoption program or from a local nursery to meet the 4-year, 70% threshold.

The achievement of the success criteria percentage, or lack thereof, will be documented in each annual monitoring report. Remedial measures will be specified if the success criteria are not being met.

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7 Fees

Per HMC Section 16.24.080, where permits or reviews are required and they are not incorporated into other review or permit procedures, fees will be paid in accordance with the City's fee schedule.

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8 Tree Protection Measures

For Joshua trees that do not require relocation, the following measures are recommended to protect the remaining Joshua trees so that they have protected zones (crown/canopy width plus 6 feet) around each tree within all active construction areas. For protected trees on site that remain within undisturbed areas, similar tree protection measures are recommended as an assurance against potential inadvertant disturbance.

8.1 Tree Protection Measures Prior to Construction

Fencing: Orange polyethylene construction fencing, no less than 4 feet in highth, with tree protection signs, will be erected around all undisturbed trees (or tree groups). The protective fencing will be installed at the protected zone boundary of each tree (or tree group), which is defined as 6 feet beyond the tree crown/canopy dripline. The intent of protective fencing is to prevent root damage and/or compaction of the soil by grading equipment. An arborist certified by the International Society of Arboriculture (ISA) may be required on site if grading activities occur within a tree's protected zone. Fencing will be secured to 6-foot-tall, heavy-gauge T-bar line posts pounded in the ground a minimum of 18 inches and spaced a minimum of 8 feet on-center. Fencing will be attached to the T-bar posts with minimum 14-gauge wire fastened to the top, middle, and bottom of each post. Tree protection signs will be attached to every fourth post. The contractor will maintain the fence to keep it upright, taut, and aligned at all times. Fencing will be removed only after all construction activities in the vicinity of the protected tree(s) are complete. Trees requiring protection will be clearly identified in a tree location exhibit included in the JTRTP. The exhibit should detail the protection zone for each tree (or tree group (i.e., crown/canopy width plus 6 feet).

Pre-Construction Meeting: A pre-construction meeting will be held between all contractors (including grading, tree removal/pruning, and builders) and an ISA Certified Arborist or registered biologist. The meeting will focus on instructing the contractors on tree protection practices and answering any questions. All equipment operators and spotters, assistants, and those directing operators from the ground will provide written acknowledgement of receiving tree protection training. This training will include information on the location and marking of protected trees, the necessity of preventing damage, and the discussion of work practices that will accomplish these tasks.

8.2 Protection and Maintenance during Construction

Once construction activities have begun, the following protection measures will be followed:

Equipment Operation and Storage: Contractors will avoid heavy equipment operation around protected trees. Operating heavy machinery around the root zones of trees will increase soil compaction, which decreases soil aeration and subsequently reduces water penetration into the soil. All heavy equipment and vehicles will, at minimum, stay out of the fenced protected tree zone unless where specifically approved in writing and under the supervision of a qualified arborist or registered biologist.

Materials Storage and Disposal: Contractors will not store or discard any supplies or materials, including paint, lumber, and concrete overflow, within the protected zone, and will remove all foreign debris within the protected zone. However, the contractors will leave the duff, mulch, chips, and other organic material around the retained trees for water retention and nutrient supply. In addition, the contractors will avoid draining or leakage of equipment fluids near retained trees. Fluids such as gasoline; diesel; oils; hydraulics, brake, and transmission fluids; paint; paint thinners; and glycol (anti-freeze) will be disposed of properly. Contractors will ensure that equipment is parked

at least 50 feet from the protected zone to avoid the possibility of leakage of equipment fluids into the soil. The effect of toxic equipment fluids on the trees could result in tree decline and mortality.

Grade Changes: Contractors will ensure that grade changes, including adding fill, will not be permitted within the protected zone without special written authorization and under supervision by an ISA qualified arborist or registered biologist. Lowering the grade within the protected zone would necessitate cutting main support and feeder roots, jeopardizing the health and structural integrity of the trees. Adding soil, even temporarily, on top of the existing grade would compact the soil further and decrease water and air availability to the tree roots. Contractors will ensure that grade changes made outside of the protected tree zone will not create conditions that allow water to pond at the base of the tree. Water trapped at the base of a tree could lead to root rot and other detrimental tree impacts.

Moving Construction Materials: Contractors will ensure that care be exercised when moving construction equipment and supplies near undisturbed Joshua trees, especially overhead. Contractors will ensure that damage to the trees will be avoided when transporting or moving construction materials and working around trees (even outside of the fenced protected zone). Contractors will flag aboveground tree parts that could be damaged (e.g., low limbs, scaffold branches, and trunks) with high-visibility flagging, such as florescent red or orange flagging.

Trenching: Except where specifically approved in writing beforehand, all trenching will be outside of the fenced protected zone. Where trenching is necessary in areas that contain roots from retained trees, contractors will use trenching techniques that include the use of either a root pruner (Dosko root pruner or equivalent) or an Air-Spade to limit root impacts. An ISA qualified arborist or registered biologist will ensure that all pruning cuts are clean and sharp to minimize ripping, tearing, and fracturing of the root system. Root damage caused by backhoes, earthmovers, dozers, or graders is severe and may result in tree mortality. Use of root-pruning and Air-Spade equipment will be accompanied only by hand removal of soil from trench locations. The trench will be made no deeper than necessary to accommodate the intended materials.

Irrigation/Hand Watering: Irrigation/hand watering of retained Joshua trees on site will seek to mimic natural rainfall patterns in Southern California. As such, irrigation/hand watering is not required unless recommended by the monitoring qualified arborist or registered biologist.

Inspection/Reporting: An ISA qualified arborist or registered biologist will inspect the preserved trees adjacent to grading and construction activity on a monthly basis for the duration of the proposed project's construction period. A site observation report summarizing site conditions, observations, tree health, and recommendations for minimizing tree damage will be submitted by the qualified arborist or registered biologist following each inspection. Annual monitoring reports will also be submitted, to document year end conditions.

8.3 Maintenance after Construction

Following completion of the construction activity within 20 feet of the protected zones of undisturbed Joshua trees, the tree protection fencing may be removed, and the following measures may be performed to sustain and enhance the vigor of the trees:

Pruning: Regular pruning of the trees is not required.

Watering: The retained trees should not require regular irrigation/hand watering, other than during the 12 months following substantial root pruning, if applicable. Supplemental irrigation/hand watering for the retained trees that sustained root pruning and any newly planted trees may be necessary, especially in years with low winter rainfall.

Watering Adjacent Plant Material: All watering near retained Joshua trees and adjacent vegetation should mimic natural rainfall patterns. Supplemental irrigation of adjacent plant material should not be required.

Monitoring: For the initial 3 months, weekly monitoring by a certified arborist or registered biologist is recommended to ensure that the watering needs of each relocation tree is being met. Following the initial 3-month monitoring period, it is recommended that the relocated trees be monitored on a monthly basis for 9 months. Following, the first year of monitoring, it is recommended that the trees be monitored quarterly (every 3 months) for 3 years. Following each monitoring visit, a site observation report summarizing site conditions, observations, tree health, and recommendations for promoting tree health should be submitted. Any tree mortality will be noted, and any tree dying during the monitoring period will be replaced with the same species as specified per City replacement standards.

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9 Reference

Bainbridge, David A. 2007. *A Guide for Desert and Dryland Restoration: A New Hope for Arid Lands*. pp 203.

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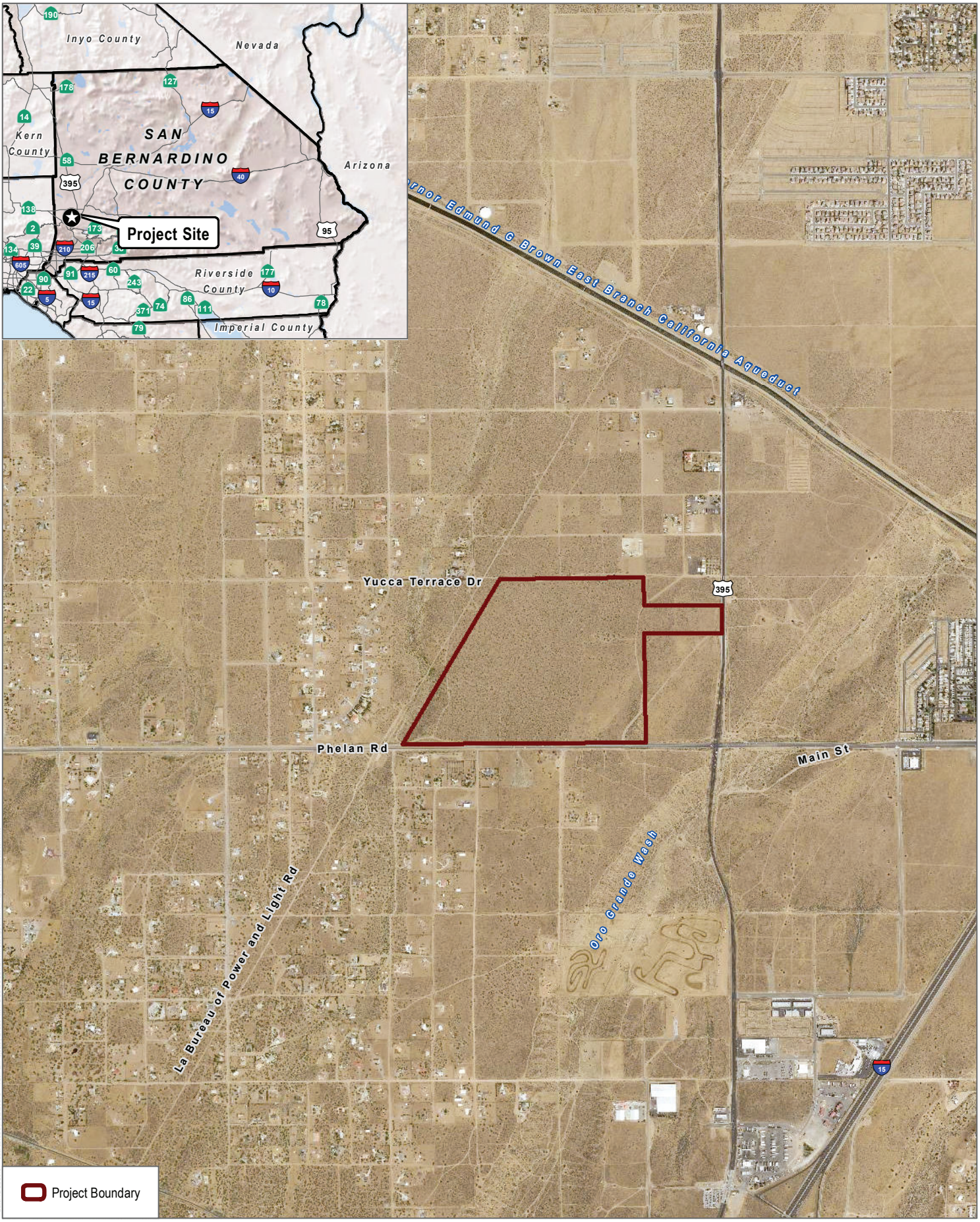
Appendix A

Project Location



SOURCE: USDA 2016

Appendix A

Project Location

DUDEK

0 1,000 2,000 Feet