Joshua Tree Inventory

Tentative Tract Map TTM 61678/CUP 20-05

Lancaster, California

Prepared for Royal Investors Group

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Joshua Tree Inventory for TTM 61678/CUP 20-05, Lancaster, California

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Development is planned for TTM 61678 which includes APNs 3204-009-002, 007, 044, and 045. For parcels containing Joshua trees (*Yucca brevifolia*) the City of Lancaster requires preparation of a Joshua Tree Inventory. The inventory should contain the following:

- Number of Joshua trees on the project site
- Size range and number in each range
- General health of the trees
- Location map if appropriate to show distribution within the site

The proposed project area is characterized as a Joshua tree and desert scrub habitat. The approximately 25 acre (10 ha) project area is located east of 57th Street West and south of Avenue K which forms the northern boundary. Residential single-family housing is adjacent to the southwest boundary of the study site. Desert habitat is present to the east and south of the study site. Residential housing and desert habitat are north of Avenue K.

Transects were walked across the study site to locate, count, assess the health, and determine the size class of Joshua trees. Joshua tree locations were recorded and noted on an aerial photograph. The health of each tree was assessed and documented.

The following definitions were used to assess the health of individual Joshua trees.

Good: No outward sign of damage, appears healthy, good transplant survivability.

Fair: Small amount of rodent activity at base, root to crown ration questionable, minimal damage, moderate transplant survivability.

Poor: Shows sign of severe damage, insect borings, potential compromise of root system by rodents, low transplant survivability.

A total of 143 Joshua trees were counted during the line transect survey (Table 1, Figure 1). A total of 58 Joshua trees were considered to be in good to fair+ condition. A total of 51 Joshua trees were considered to be in fair condition and another 34 were considered to be in poor condition. An example of good, fair and poor condition is portrayed in photographs (Figures 2 to 4). Overall health of the Joshua trees in the northwestern portion of the project site appeared to be poor increasing in health to the east of the site. The size class of Joshua trees at this project site is skewed to older (>12 foot) individuals which is unusual in the Antelope Valley area. Multiple Joshua tree studies over the last 30 years in the Antelope Valley have shown the typical distribution of size classes for Joshua trees, particularly in Palmdale, have lower numbers in the 1 to 3 and > 12 foot classes, with the highest representation between 4 to 12 foot. Four >12 trees were down and uprooted. These four trees did have green limbs but were discounted.

This appears to be a very old Joshua tree community that has not seen a lot of direct impacts. The eastern portion of the site has a greater number of Joshua trees in good condition. Joshua trees typically provide roosting and nesting sites for birds. Six inactive nests were observed within the Joshua trees present on-site. A nesting bird survey should be accomplished prior to removal or relocation of Joshua trees during the breeding season.

Table 1. Number of Joshua trees by size class occurring within the proposed project area.

Size Class of Joshua trees (in feet)	Total Number of Joshua trees (25 Acres)
1-3	5
4-6	5
7-9	5
10-12	13
>12	115
Total	143

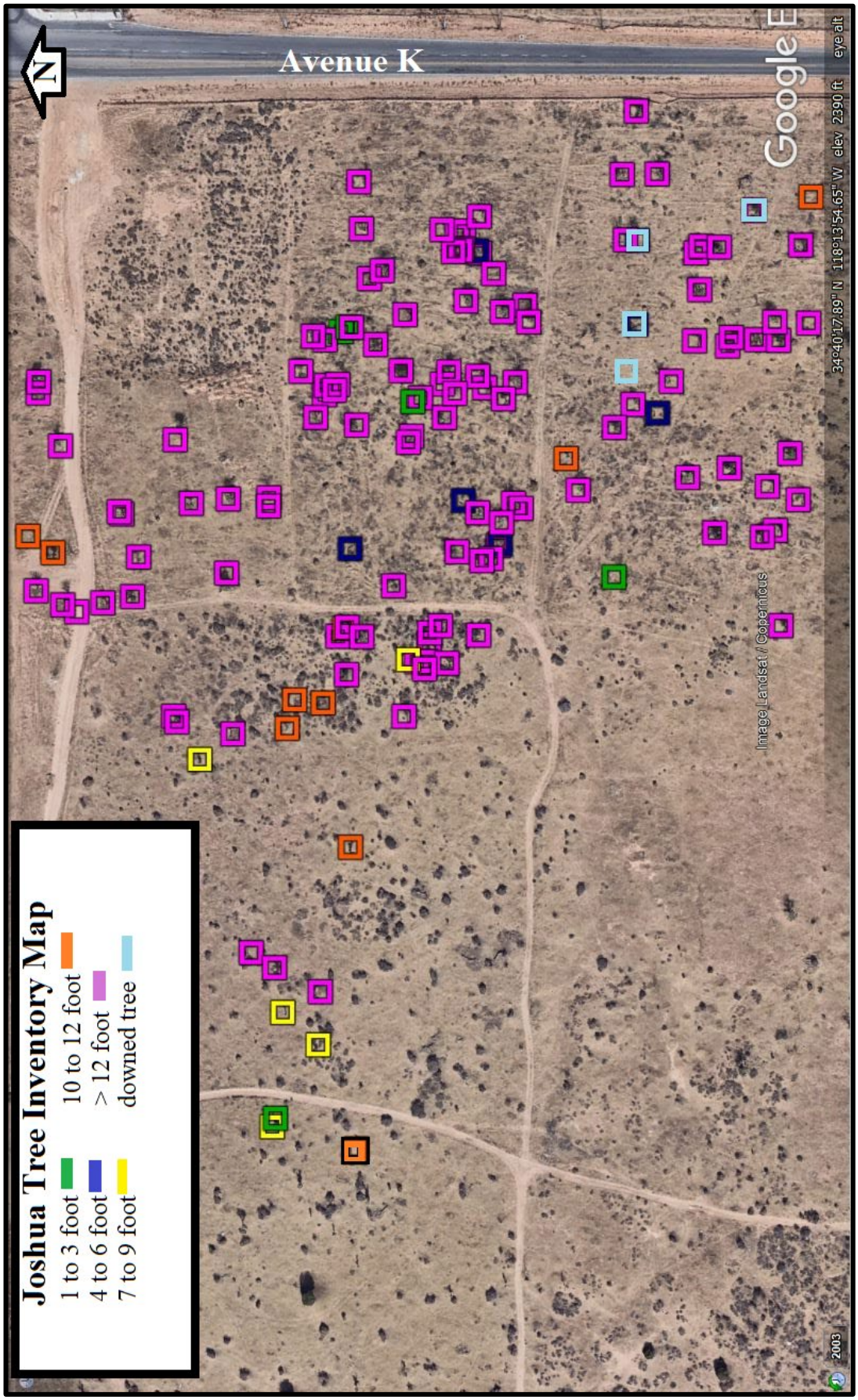

Figure 1. Joshua Tree Inventory Map

When transplanting, an appropriate sized tree spade should be used to increase the chance of Joshua tree survival. Care should be taken not to damage root systems and to keep moist soil around the root ball during transplanting, otherwise success of the transplants could be jeopardized. Joshua trees should be planted in sandy, well-drained soil. Transplanted Joshua trees should be planted at least ten feet (3 m) apart and well-watered immediately. Transplanting with any native vegetation that exists immediately adjacent to the Joshua tree may help in survival of individual trees. Maintenance inspections of relocated Joshua trees appear to suggest retention of immediately adjacent native vegetation around the tree may assist in tree survival. Construction activity should not occur within twenty-five feet (8 m) of transplanted Joshua trees. Joshua trees that are smaller than five feet in height could be transplanted by hand, but are expected to have a low survivability rate if moved using hand tools.

A two year maintenance program should be established for trees that are transplanted. Joshua trees transplanted during fall, winter, or early spring should be adequately watered once a week for two months following transplanting. Joshua trees transplanted during late spring or summer should be adequately watered until the end of hot weather. If sufficient rainfall or low evaporation rates occur and the soil remains moist these watering schedules should be reduced in frequency.

Multiple photographs of each tree were taken for future use in a potential Incidental Take Permit. Photographing a large number of Joshua trees on all four sides results in a very large unwieldy data set. Photographing each cardinal side of a tree can be challenging due to the proximity of trees or the size of tree (< 3 foot). This compromises the photographs. Photographs of each cardinal side of a single tree can cause a perceptual problem. This should be considered and resolved by California Department of Fish and Wildlife as they develop the Incidental Take Permit requirements. It is suggested that 1 photograph per tree is sufficient along with an extra photograph of specific areas of individual trees when needed to further explain why a particular assessment was made. This was not a particularly large Joshua tree woodland. Many of those accomplished in the past have contained in excess of 600 trees. The issues discussed above will be exacerbated when large Joshua tree woodlands are inventoried.

Figure 2: Example of a good condition Joshua tree.

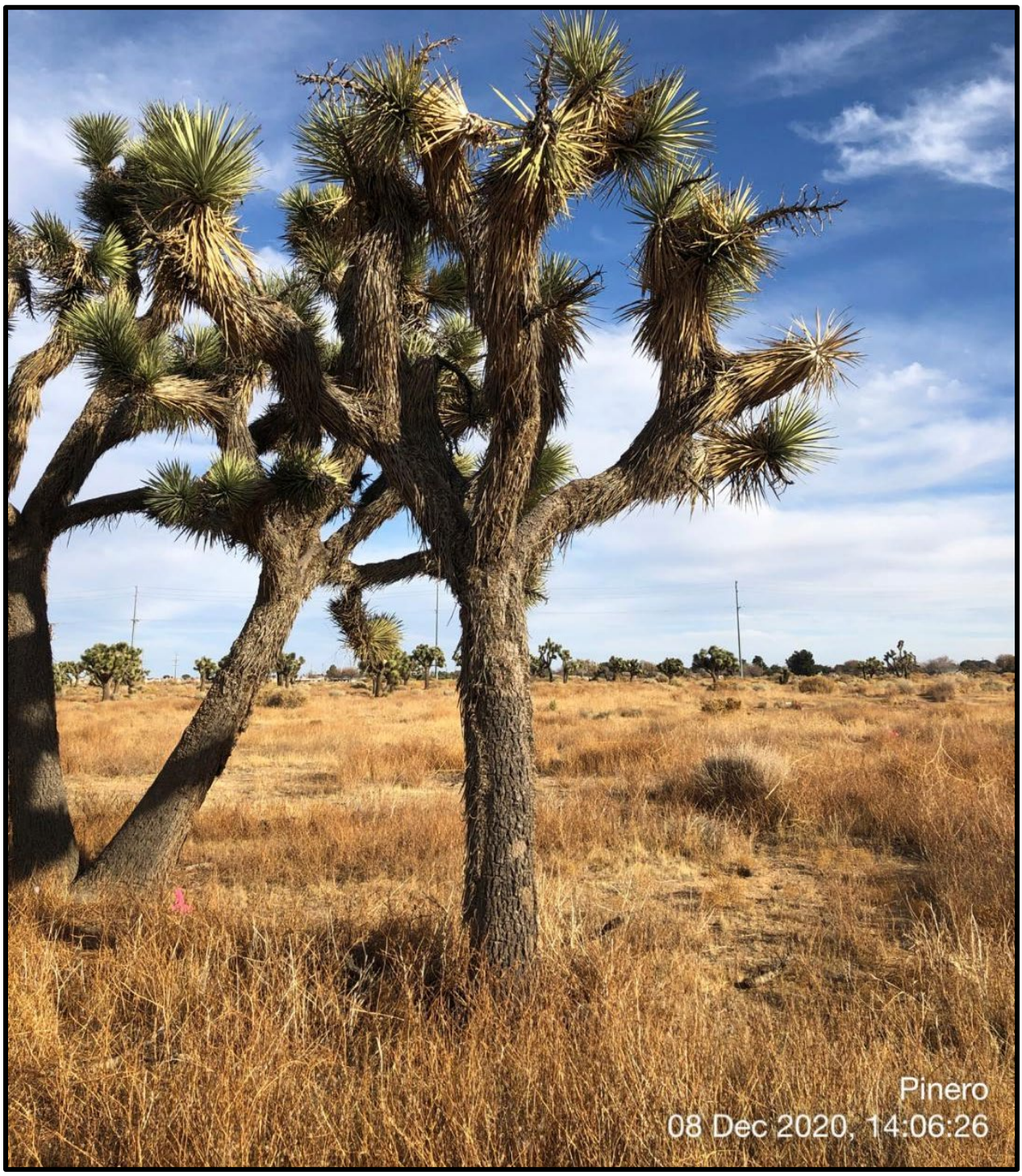

Figure 3: Example of fair condition Joshua tree. Note damage along trunk of tree.

Figure 4: Example of poor condition Joshua tree. Note severe damage at base of tree.