

## APPENDIX B

### Biological Resources Report

### Tree Survey and Landscape Plan



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**ZERO WASTE ANAEROBIC DIGESTION FACILITY  
BIOLOGICAL RESOURCES REPORT**

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## EXECUTIVE SUMMARY

The Zero Waste Energy Development Company, a subsidiary of Green Waste Recovery, Inc., proposes to construct a 270,000-ton per year dry fermentation Anaerobic Digestion (AD) facility (hereafter, the “Project”) on bufferlands owned by the San José/Santa Clara Water Pollution Control Plant (WPCP), located at 2100 Los Esteros Road in San José, California. The proposed Project would include the construction of three approximately 60,000 square foot enclosed buildings that will house Anaerobic Digestion and composting processes, a maintenance shop, administrative office, and washroom facilities for employees. The facilities will be run 24 hours per day, 7 days per week.

H. T. Harvey & Associates conducted field surveys and a review of existing information concerning biological resources in the Project area to identify potential impacts to biological resources that may occur as a result of the Project. The Project site supports limited plant species diversity with a high proportion of non-native and weedy species due to the disturbed nature of most of the property and the fill soils that have been placed there in the past. Four land use/habitat types are present within the property boundaries: ruderal grassland, ruderal *Baccharis* scrub, developed, and seasonal wetland ditch. Extensive natural wetlands and areas of coastal salt marsh occur adjacent to, but outside of, the Project boundaries to the north, east, and west.

The Project will result in conversion of up to 25.7 acres (ac) of ruderal grassland, 7.6 ac of ruderal *Baccharis* scrub, 0.9 ac of developed habitat, and 0.2 ac of seasonal wetland ditch habitat to developed uses associated with the Project. An additional 0.9 ac of ruderal/bare ground on the adjacent ZRRROL site will be impacted by grading for the driveway connecting the two sites.

No special-status plant species were observed on the Project site, and none are expected to occur there. Thus, the Project is not expected to result in impacts to special-status plant species. The Project vicinity provides potential habitat for a number of special-status wildlife species. However the Project site itself provides suitable breeding and foraging habitat for only three wildlife species, the burrowing owl (*Athene cunicularia*), loggerhead shrike (*Lanius ludovicianus*), and Bryant’s savannah sparrow (*Passerculus sandwichensis alaudinus*). Impacts to habitat and individuals of the loggerhead shrike and Bryant’s savannah sparrow will be less than significant because Project implementation will not substantially reduce the habitat that is regionally available to these species, or substantially reduce the number or restrict the range of these species. However, if burrowing owls are present on the site, the Project would result in the loss of 25.7 acres of ruderal grassland habitat for this species, and could potentially result in the loss of individuals during grading or the loss of reproductive effort due to disturbance of active nests. Measures to mitigate impacts to burrowing owls to less than significant levels include pre-construction surveys, buffers between active nests and construction activities during the breeding season, relocation of burrowing owls from impact areas if necessary (to occur only during the nonbreeding season), and compensatory mitigation for habitat loss if burrowing owls are found to nest or roost on the Project site.

A vector management plan (VMP) will be developed for the Project and implemented during all materials processing. The purpose of the VMP will be to minimize the degree to which nuisance bird and mammal species increase in the vicinity of the site as a result of materials processing

activities. The VMP will focus on minimizing accessibility of food waste to nuisance species so that these species are not attracted to the facility, and for insects and rodents, on minimizing features that would support breeding by and refugia for these species. Because completely eliminating access to food waste and refugia for nuisance species may not be feasible, the VMP also includes measures to capture and remove individual nuisance mammals and treat areas with nuisance insects. Implementation of the VMP will prevent significant impacts to sensitive wildlife species in adjacent areas, or even more broadly in the South Bay, that may occur if handling of materials attracts or subsidizes populations of nuisance predators and competitors.

Salt marsh harvest mice and salt marsh wandering shrews are expected to occur in the wetlands immediately adjacent to the Project area, but are not expected to occur on the site itself due to a lack of suitable habitat. Lighting associated with the Project could result in impacts to salt marsh harvest mice and salt marsh wandering shrews by increasing the likelihood of predation and/or deterring these species from using well-lit habitat, thus resulting in potential loss of individuals and effective habitat loss in well-lit areas immediately adjacent to the Project site. Use of inwardly directed and appropriately shielded lighting to protect harvest mice and vagrant shrews and their habitat will reduce these potential impacts to less-than-significant levels.

Approximately 0.2 acres of seasonal wetland ditch will be impacted by the construction of an access road and stormwater outfall. This ditch may not be subject to jurisdiction by the U.S. Army Corps of Engineers (USACE) as Waters of the U.S. because one source of hydrology, possibly the main source, appears to be runoff from dust suppression efforts on the adjacent Zanker Road Resource Recovery Operation and Landfill site. Determination of the regulatory status of this ditch would require preparation of a Waters of the U.S. delineation report and a field review by the USACE. Due to the very low habitat quality in this ditch and the primarily artificial source of hydrology, impacts to seasonal wetlands within this ditch are considered less than significant under CEQA, and no mitigation is required.

The proposed Project includes extending an approximately 18-inch diameter water main from the closest available water source at the corner of Spreckles Avenue and Grand Boulevard to the Project site. This 6,500-foot segment of pipe will be installed within the public right-of-way in Los Esteros and Zanker Roads, in habitat that is currently developed (*i.e.*, paved or bare shoulder lacking wetlands or other sensitive habitats). As a result, no direct impacts to high-quality jurisdictional wetlands are expected to result from the installation of this pipe. However, this component of the Project, as well as grading in areas of the main portion of the Project site adjacent to existing wetlands, could potentially result in significant impacts to adjacent wetlands due to sedimentation or unintentional fill. Measures such as implementation of Best Management Practices and dust suppression will reduce potential construction-phase impacts to wetlands to less than significant levels.

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## ENVIRONMENTAL SETTING

### PROJECT DESCRIPTION

The Zero Waste Energy Development Company, a subsidiary of Green Waste Recovery, Inc., proposes to construct a 270,000-ton per year dry fermentation Anaerobic Digestion (AD) facility (hereafter, the “Project”). The proposed Project will be located at 2100 Los Esteros Road in San José, adjacent to the Zanker Road Resource Recovery Operation and Landfill (ZRRROL) and the Zanker Material Processing Facility (ZMPF). The 41.32-acre (ac) Project site (Figure 1) is part of an approximately 96-ac property that is part of the buffer lands of the San José/Santa Clara Water Pollution Control Plant (WPCP). Currently unused, the 96-ac property contains a portion of the former Nine Par Landfill, a tidal marsh area, and the inactive WPCP recycled water filling station. As part of the proposed Project, the owners of the WPCP (the City of San José and the City of Santa Clara) would execute a land lease with Zero Waste, which would be responsible for developing, constructing, and operating the proposed AD facility on the Project site.

The proposed Project entails the construction and operation of an AD facility, which will utilize a proprietary technology to convert organic waste sourced from the City of San José and surrounding communities into a biogas containing 50 to 60 percent methane. Controlled composting of organic materials in large airtight containers produces carbon dioxide and methane, which are captured to create biogas. The biogas will be used to power onsite generators. Organic waste (feedstock) used in this process will consist mainly of food waste, source separated organics, and organic residue from other Municipal Solid Waste (MSW) processing facilities.

Biogas is harvested within enclosed buildings in “digesters”, which are large airtight containers. These digesters are filled with feedstock and processed using an anaerobic digestion procedure. During this process biogas is continuously generated and extracted from the digesters. After the digestion phase is complete (up to 28 days), the remaining material is removed from the digesters and placed into composting tunnels the same day, where a bulking agent such as woodchips is added. The woodchips and feedstock are combined and processed using an aerobic composting procedure (up to 21 days). The material is then removed from the composting tunnels and transported outside for curing and screening (2-4 weeks). This byproduct material becomes compost which is sold as soil amendment. A small amount of residual material is left over from the curing and screening process, which may be reused as bulking material or properly discarded.

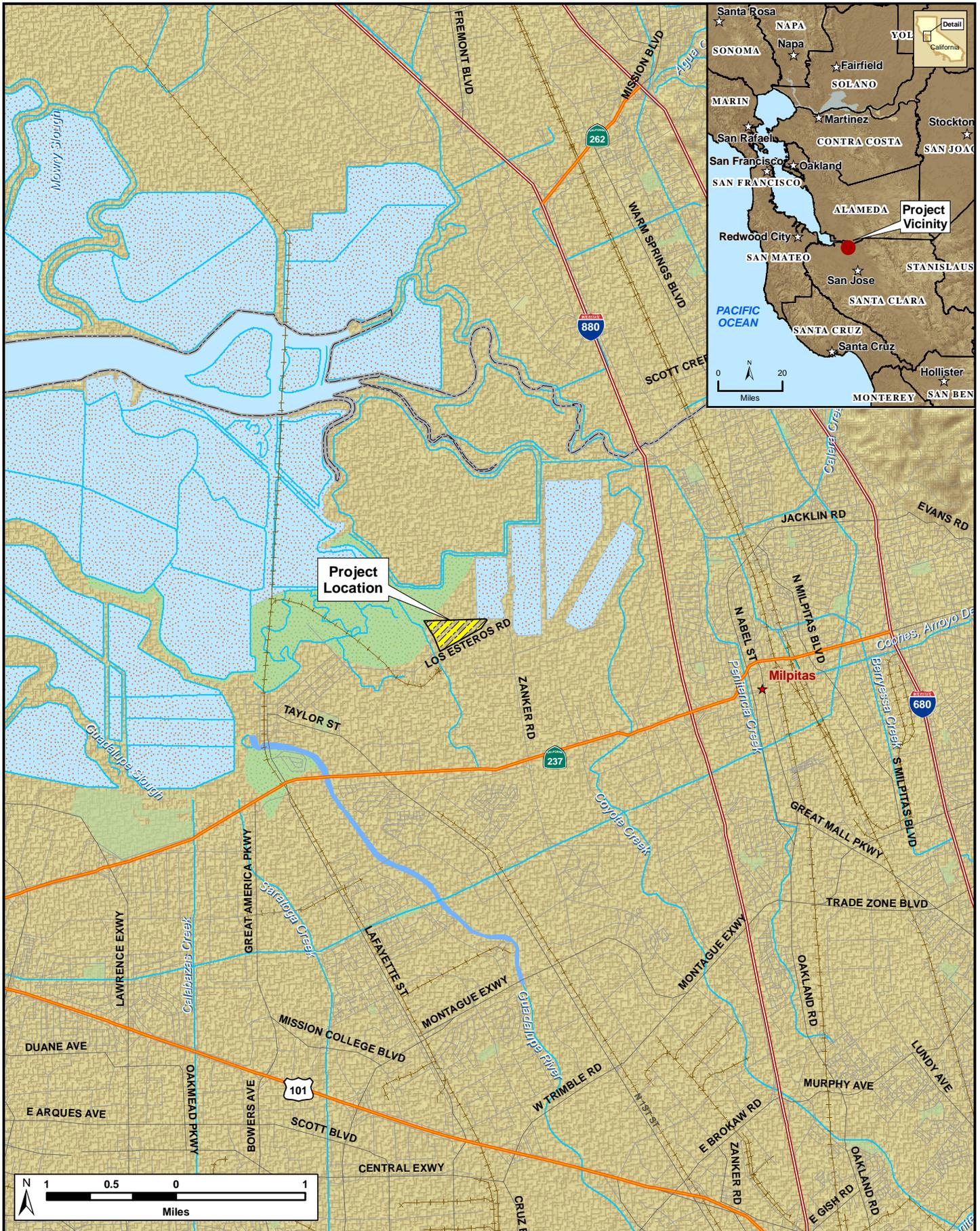
The Project will be developed in three phases, with each phase being capable of handling an additional 75,000 tons of organic waste material per year, for an eventual total of 225,000 tons of organic feedstock and 45,000 additional tons of bulking agent to be used in the AD process per year. The proposed Project includes three approximately 60,000 square foot (ft) enclosed buildings that will house the AD process. These buildings will be constructed of concrete with metal frame roofs, with a maximum height of approximately 52 ft. Each building will include an enclosed receiving area for organic feedstock delivery and storage, sixteen digesters for the extraction of biogas, an engine room, eight compost curing tunnels, and a biogas storage area. The enclosed buildings will be equipped with an air circulation control system that regulates air

within the structure and exhausts air through biofilters to control odors. Additionally, the facility will include a maintenance shop, administrative office, and washroom facilities for employees. The administrative building will be of wood frame construction with cement-board siding, with a maximum height of 27 feet.

The proposed AD facility will operate continuously 24 hours per day, 7 days per week, 365 days per year. The facility will be open to accept inbound materials and transport outbound materials from approximately 8:00 am to 6:00 pm everyday. During initial operations (Phase I), the facility is expected to directly employ approximately 15 full-time employees. At full build-out (Phase III), the facility is expected to directly employ approximately 26 full-time employees.

Sanitary facilities will be provided onsite for employees and visitors, including a washroom and toilet facility within the administrative building built in Phase I. Sewer lines will be extended under Los Esteros Road (public right-of-way) to the WPCP facility to adequately handle waste from the washroom facilities. Potable water will also be provided onsite requiring the extension of a municipal water line to the property. The closest available water source is at the corner of Spreckles Avenue and Grand Boulevard. The proposed Project includes extending an approximately 18-inch diameter water main from this source to the driveway of the Project site which includes approximately 6,500 feet along the public right-of-way. This pipe will be installed in Los Esteros and Zanker Roads entirely in habitat that is currently developed (*i.e.*, paved or bare shoulder lacking wetlands or other sensitive habitats). Outside lighting is proposed to allow continued operations after darkness, accommodate safe traffic flow, and provide for employee safety. The proposed lighting will consist of energy efficient lights positioned to minimize off-site impacts by being directed downward and away from Los Esteros Road and from nearby sensitive habitat and the U.S. Fish and Wildlife Service (USFWS) Don Edwards National Wildlife Refuge (Refuge).

Entry to the proposed Project site for feedstock deliveries will share the access driveway from the adjacent ZRRROL property, which is accessed via Los Esteros Road. A separate public, employee, and emergency fire entrance will be located in the southwest corner of the facility with direct access to Los Esteros Road. The site will include public and employee parking consisting of fourteen parking spaces including two handicap parking spaces. Regional access to the Project area is provided via State Route 237 and Zanker Road. The proposed facility will accept commercial and municipal organic waste, and may include some public material deliveries. Municipal feedstock materials are to be trucked directly to the proposed facility or conveyed from the nearby ZRRROL and/or ZMPF facilities. These trucks will first enter vehicle-weighing scales located at the adjacent ZRRROL facility before entering the AD Facility. An attendant at the scale house will inspect incoming trucks and direct them to the appropriate receiving location. Transportation of feedstock within the facility will be accomplished with front end loaders for material handling, mixing, loading and unloading of haul trucks. The Project proposes a perimeter barrier to discourage unauthorized entry and will feature lockable gates at the entrance to the ZRRROL property and the public/employee entrance on Los Esteros Road, as well as a manned vehicle scale house located on the ZRRROL property.



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The proposed Project will include a Grading and Drainage Plan, as required by the Special Use Permit. Plans for the Project construction require additional imported soil in the amount of approximately 100,000 cubic yards brought in over five weeks. A Stormwater Control Plan will also be prepared for the Project, which will detail existing hydrologic conditions and changes from the proposed AD facility. Plans for the Project include six vegetated swales as well as four drainage outfalls.

The Nine Par property is currently a a non-operating inactive landfill site. As a former landfill, special consideration is required in dealing with existing and future soil conditions. There is no engineered cap over the previous waste fill, although a generally two to twelve foot layer of sands and gravels exists in varying (low to medium) plasticity.

A vector management plan (VMP) will be developed for the Project and implemented during all materials processing. The purpose of the VMP will be to minimize the degree to which nuisance bird and mammal species increase in the vicinity of the site as a result of materials processing activities. The VMP will focus on minimizing accessibility of food waste to nuisance species so that these species are not attracted to the facility, and for insects and rodents, on minimizing features that would support breeding by and refugia for these species. Because completely eliminating access to food waste and refugia for nuisance species may not be feasible, the VMP also includes measures to capture and remove individual nuisance mammals and treat areas with nuisance insects. The VMP to be implemented may be the same as that prepared for the adjacent ZMPF or may be a different plan that includes measures to minimize access of waste materials to wildlife, minimize refugia for nuisance species, and trap nuisance mammals as needed. The VMP will also include a monitoring and adaptive management component to ensure that it is effective.

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<sup>1</sup> SCS Engineers. *Field Investigation and Site Development Feasibility Summary Report*. September 17, 2007.

## **GENERAL PROJECT AREA DESCRIPTION**

The 41.32-ac Project site is located at 2100 Los Esteros Road in San José, California (United States Geologic Survey [USGS] Milpitas 7.5-minute quadrangle), approximately 0.5 miles northeast of the community of Alviso (Figure 1). The surrounding land use around the proposed Project site is primarily characterized by existing waste management facilities, although the site is bounded by the Don Edwards San Francisco Bay National Wildlife Refuge to the north, northwest. Project lands fall between the Zanker Material Processing Facility to the west across the WPCP outfall channel and the Zanker Road Resource Recovery Operation and Landfill to the east. To the south, the Project area is bounded by Los Esteros Road and WPCP facilities.

The Project site is situated at a natural elevation of approximately 0-6 ft above mean sea level (MSL), but fill soils have been placed on-site such that the elevation now reaches to 30 ft in some areas on-site according to LIDAR elevation contour data (San José, 2004). The average annual precipitation at the site is approximately 16 inches, and the average annual temperature is 58 degrees Fahrenheit (NRCS 2002).

The National Wetland Inventory (NWI) depicts one historic wetland within Project site, which is Palustrine emergent, seasonally flooded/diked impounded (NWI 1985). This wetland is historic, as surveys conducted in December 2009 did not find any evidence of its existence. Other wetlands and estuarine waters are located just outside of Project boundaries to the west, north, and east of the Project site. Historically, tidal marsh soils underlay the Project site, although current landfill operations have deposited various fill materials on top of the native soil.

## BIOTIC SURVEYS

Reconnaissance field surveys of the Project site were conducted on 3 December 2009 by H. T. Harvey & Associates wildlife ecologist Nellie Thorngate, M.S., and senior plant ecologist Kelly Hardwicke, Ph.D. The purpose of these surveys was to document existing site conditions and biotic resources associated with the site that could be impacted by the proposed improvements. Specifically, surveys were conducted to: 1) describe existing biotic habitats and wildlife communities; 2) assess the site for its potential to support regulated habitats and special-status species and their habitats; and 3) conduct focused surveys for jurisdictional habitats and evidence of burrowing owl occupancy. In addition, H. T. Harvey & Associates senior plant/wetlands ecologist Patrick Boursier, Ph.D. visited the site on 13 May 2010 to determine the dimensions and location of the seasonal wetlands in the ditch along the northeastern edge of the site.

A number of studies have been conducted previously in the Project vicinity. These studies, in conjunction with a review of the California Department of Fish and Game's California Natural Diversity Database (CNDDDB 2010), species information from technical reports and other scientific sources, and current site visits, provided information on the potential occurrence of special-status plants and animals in the Project area. These studies included a biotic assessment and impact analysis for the ZRRROL Project (H. T. Harvey & Associates 2004, 2008) and the biological resources report produced for the adjacent ZMPF Project (H. T. Harvey & Associates 2007).

## BIOTIC HABITATS

Four habitat types are present within the Project site: ruderal grassland, ruderal Baccharis scrub, developed, and seasonal wetland ditch (Table 1, Figure 2). These biotic habitats and associated vegetation and wildlife are described in further detail below. Plant communities were described in terms of dominant tree, shrub, and herbaceous vegetation composition, but were too disturbed to be accurately classified strictly according to the nomenclature of Holland (1986), Sawyer and Keeler-Wolf (1995), or Sawyer, Keeler-Wolf, and Evans (2008). Figure 2 shows the distribution of these habitats and land-use types. A complete list of species recorded on-site is presented as Appendix A.

**Table 1. Summary of Biotic Habitats and Land-Use Types Present on the Project Site.**

Habitat Type	Acreage	Percent of Total
Ruderal Grassland	30.21	73%
Ruderal Baccharis Scrub	8.05	19%
Developed	2.84	7%
Seasonal Wetland Ditch	0.22	<1%
<b>Totals</b>	<b>41.32</b>	<b>100%</b>

### Ruderal Grassland

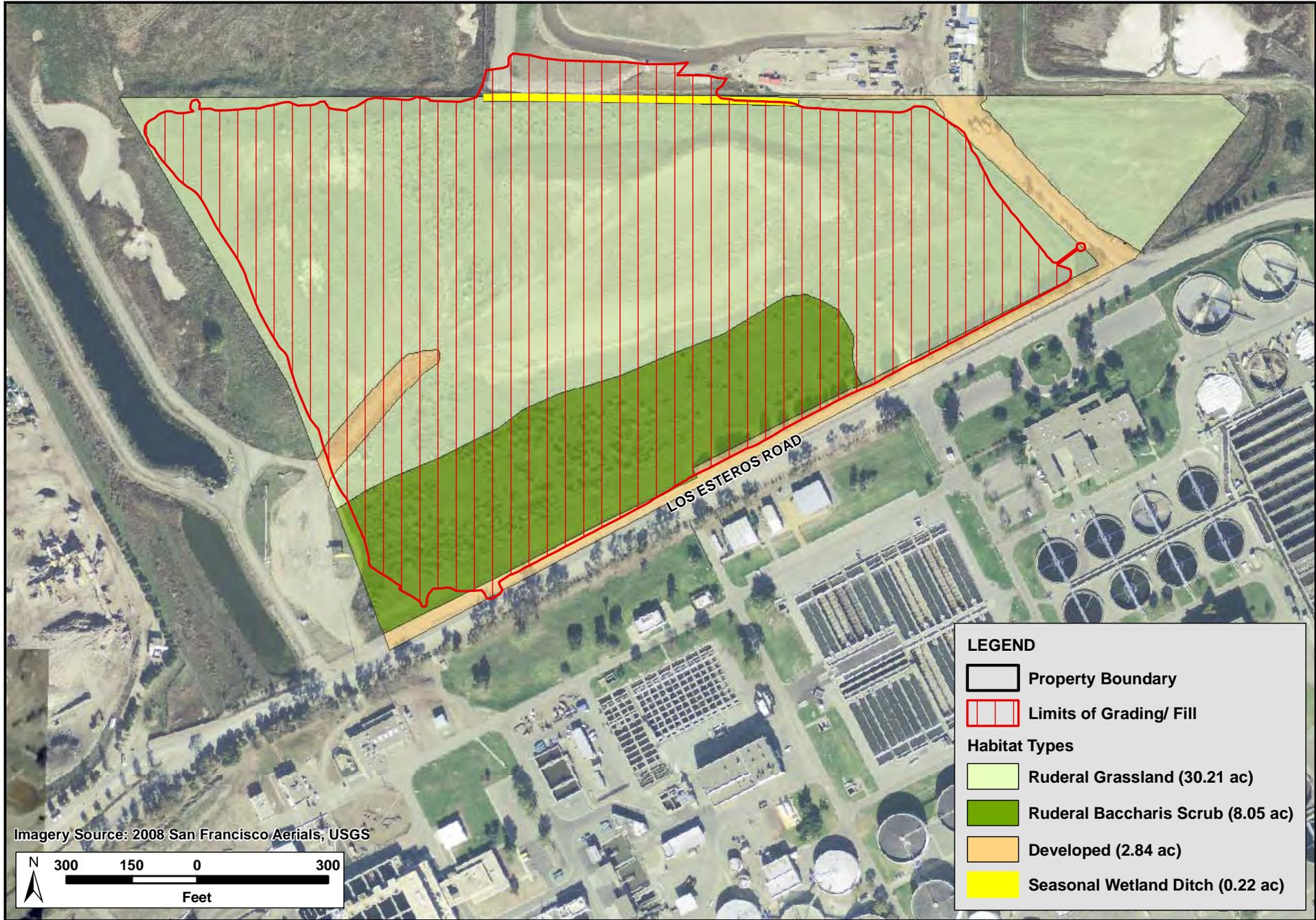
**Vegetation.** Non-native, annual grassland/ruderal habitat typical of fill material soils comprises approximately 30.21 ac of the property on the majority of the recently filled areas and along the northern, western, and eastern areas of the site. Ruderal communities are assemblages of plants

that thrive in disturbed areas, and weedy, non-native annual forbs and grasses are typically the first species to colonize these sites following disturbance. In some areas, especially in the north-central section of the Project site (Figure 2), these grassy areas are codominated by scrub species such as California sagebrush (*Artemisia californica*) and coyote brush (*Baccharis pilularis*), but these areas are limited and are growing in very thick monocultural bands on fill slopes or in sparse, short-statured (< 2 ft tall) assemblages typical of fill soils and landfill-related disturbance. The majority of the areas mapped as ruderal grassland on the Project site are dominated by non-native, annual grasses such as rip-gut brome (*Bromus diandrus*), wild oats (*Avena fatua*), hare barley (*Hordeum murinum*), and Italian ryegrass (*Lolium multiflorum*). Ruderal species observed on the Project site included black mustard (*Brassica nigra*), wild radish (*Raphanus sativus*), yellow star-thistle (*Centaurea solstitialis*), milk thistle (*Silybum marianum*), Italian thistle (*Carduus pycnocephalus*), and willowherb (*Epilobium ciliatum*). The area on top of the highest fill soils and the area comprising the landfill cap in the center of the site is the most disturbed, with sparse vegetation and very rocky, compacted soils, and is dominated by yellow star-thistle, filarees (*Erodium* sp.), and Russian thistle (*Salsola tragus*). In addition, planted eucalyptus trees (*Eucalyptus globulus*) line the area just outside the southern site boundary.

**Wildlife.** The ruderal grassland habitat that dominates the Project site is of relatively low quality to most native wildlife species due to its history of disturbance and relatively low structural diversity. Nevertheless, a number of wildlife species associated with grasslands and ruderal habitats in the South Bay occur, or could potentially occur, in this habitat. Common reptiles such as western fence lizards (*Sceloporus occidentalis*) and gopher snakes (*Pituophis catenifer*) are expected to occur here. During the site visit we observed foraging flocks of white-crowned sparrows (*Zonotrichia leucophrys*) and western meadowlarks (*Sturnella neglecta*) in the on-site grassland, and several savannah sparrows (*Passerculus sandwichensis*) were noted foraging there as well. A red-tailed hawk (*Buteo jamaicensis*) was seen foraging in the Project area, and a white-tailed kite (*Elanus leucurus*) was observed in the grassy area immediately north of the Project site. Other raptors such as red-shouldered hawks (*Buteo lineatus*), American kestrels (*Falco sparverius*), and barn owls (*Tyto alba*) are also likely to forage in the grassland on the site on occasion. We found evidence of small mammals including valley pocket gophers (*Thomomys bottae*), California voles (*Microtus californicus*), and California ground squirrels (*Spermophilus beecheyii*) in grassland on the Project site during the site visit, and observed several black-tailed jackrabbits (*Lepus californicus*) throughout the Project area. Feral cat (*Felis catus*) scat on the Project site indicates the presence of at least one individual, and other mesocarnivores such as raccoons may also make use of the ruderal habitat in the Project area for foraging. No evidence of burrowing owls (*Athene cunicularia*) was observed on the Project site during our surveys, though the grassland habitat on the site could potentially support this species.

### **Ruderal Baccharis Scrub**

A band of mature coyote brush scrub occurs along the southern border of the site, located in the southeast corner. This area does not appear to have been filled as recently as other areas on-site, is unaffected by landfill operations, and has been undisturbed for long enough that a mature scrub canopy, dominated by coyote brush, reaches to some 10-12 ft tall. The mature bushes are interspersed with a thick cover of non-native grasses and some weedy forb species as described for the ruderal grassland habitat above. In general, however, this area supports a much denser assemblage of grass species and fewer weedy forb infestations.



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**Wildlife.** Many of the wildlife species occurring in the ruderal grassland habitat on the Project site will use the scrub habitat for cover. In addition, this scrub provides more habitat structure than the ruderal grassland and thus provides habitat for additional species. During the site visit we observed white-crowned sparrows, bushtits (*Psaltriparus minimus*), yellow-rumped warblers (*Dendroica coronata*), and European starlings (*Sturnus vulgaris*) in this habitat. Black phoebes and Anna's hummingbirds (*Calypte anna*) were observed using coyote brush shrubs as displaying perches. In the summer, this habitat is likely to be used by common nesting birds such as northern mockingbirds (*Mimus polyglottos*), house finches (*Carpodacus mexicanus*), and American goldfinches (*Spinus tristis*).

## Developed

**Vegetation.** Developed areas on-site include a road entrance leading onto the Project area, where trucks carrying fill soils presumably enter, and a road bisecting the eastern corner of the site leading to the off-site landfill operations located to the north of the Project area. These areas are sparsely vegetated. Soils are compacted on the entrance onto the Project site, and the road leading to the landfill is paved and covered in gravel.

**Wildlife.** The small areas of developed habitat on the Project site are unlikely to be used regularly by wildlife, although some animals may occasionally make use of these for foraging, basking, or shelter. Western fence lizards are present on the Project site and are likely to bask and forage occasionally on paved areas, and may shelter in or under the small service building near the recycled water filling station. Common urban-adapted birds may be found utilizing the developed areas of the Project site on occasion; for instance, European starlings and mourning doves (*Zenaida macroura*) may forage on insects moving across the paved areas, and house finches and black phoebes could potentially build nests under the eaves of the service building or in holes (such as pipe openings) in the recycled water equipment. Striped skunks (*Mephitis mephitis*), feral cats, raccoons, and Virginia opossums (*Didelphis virginiana*) are expected to forage in the developed habitats on the Project site.

## Seasonal Wetland Ditch

**Vegetation.** In a ditch that runs along the northern boundary of the site, curly dock (*Rumex crispus*) is present in some areas, and perennial peppergrass (*Lepidium latifolium*) grows sparsely along the northern portions of the site within grassland habitat, adjacent to wetlands. Otherwise, the vegetation in this ditch is dominated by upland-associated plant species. One source of hydrology, possibly the main source, appears to be runoff from dust suppression efforts on the adjacent ZRRROL site. During our 13 May 2010 site visit, water spread by a dust suppression truck was collecting in drainage features along the roads on the ZRRROL site and discharging into the seasonal wetland ditch. However, no water was pooled in the ditch on that date, nor was water present in this ditch during our 3 December 2009 site visit. The ditch does not empty into any other wetlands or aquatic habitats; rather, it is depressional, with higher-elevation areas separating it from the extensive, natural wetland to the west/northwest.

**Wildlife.** The seasonal wetland ditch does not provide high-quality wetland habitat for wildlife. Water may pond in the lowest portion of the ditch for a short duration after heavy rain events, but the source of dry-season hydrology (water from dust suppression trucks) does not provide

aquatic or marshy habitat. As a result, this ditch does not provide suitable breeding habitat for amphibians, nor open-water foraging habitat for ducks or shorebirds. Wildlife use of this ditch is expected to be similar to that of the adjacent ruderal grassland habitat, with birds such as red-winged blackbirds (*Agelaius phoeniceus*) and savannah sparrows, reptiles such as western fence lizards and gopher snakes, and mammals such as California voles and valley pocket gophers foraging in the ditch.

## SPECIAL-STATUS SPECIES AND SENSITIVE HABITATS

### SPECIAL-STATUS SPECIES REGULATIONS OVERVIEW

Federal and state endangered species legislation gives special status to several plant and animal species known to occur in the vicinity of the Project site. In addition, state resource agencies and professional organizations, whose lists are recognized by agencies when reviewing environmental documents, have identified as sensitive some species occurring in the vicinity of the Project site. Such species are referred to collectively as “species of special status” and include plants and animals listed, proposed for listing, or candidates for listing as threatened or endangered under the federal Endangered Species Act (ESA) or the California Endangered Species Act (CESA); animals listed as “fully protected” under the California Fish and Game Code; animals designated as “Species of Special Concern” by the CDFG; and plants listed as rare or endangered by the California Native Plant Society (CNPS) in the *Inventory of Rare and Endangered Plants of California* (2001).

ESA provisions protect federally listed threatened and endangered species and their habitats from unlawful take. Under the ESA, “take” is defined as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any of the specifically enumerated conduct.” The U.S. Fish & Wildlife Service’s (USFWS) regulations define harm to mean “an act which actually kills or injures wildlife.” Such an act “may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering” (50 CFR § 17.3). Activities that may result in “take” of individuals are regulated by the USFWS. The USFWS produced an updated list of candidate species May 11, 2005 (50 CFR Part 17). Candidate species are not afforded any legal protection under ESA; however, candidate species typically receive special attention from federal and state agencies during the environmental review process.

Provisions of CESA protect state-listed threatened and endangered species. CDFG regulates activities that may result in “take” of individuals (*i.e.*, “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill”). Habitat degradation or modification is not expressly included in the definition of “take” under the California Fish and Game Code. Additionally, the California Fish and Game Code contains lists of vertebrate species designated as “fully protected” (California Fish & Game Code §§ 3511 [birds], 4700 [mammals], 5050 [reptiles and amphibians], 5515 [fish]). Such species may not be taken or possessed.

In addition to federal and state-listed species, the CDFG also has produced a list of “species of special concern” to serve as a “watch list.” Species on this list are of limited distribution or the extent of their habitats has been reduced substantially, such that threat to their populations may be imminent. Species of special concern may receive special attention during environmental review, but they do not have statutory protection. USFWS also uses the label “species of special concern” as an informal term that refers to those species that might be in need of concentrated conservation actions. Species of special concern receive no legal protection as a result of their designation as Species of special concern, and the use of the term does not necessarily mean that

the species will eventually be proposed for listing as a threatened or endangered species. However, most, if not all, of these species are currently protected by state and federal laws.

Vascular plants listed as rare or endangered by the CNPS, but which might not have designated status under state endangered species legislation, are defined as follows:

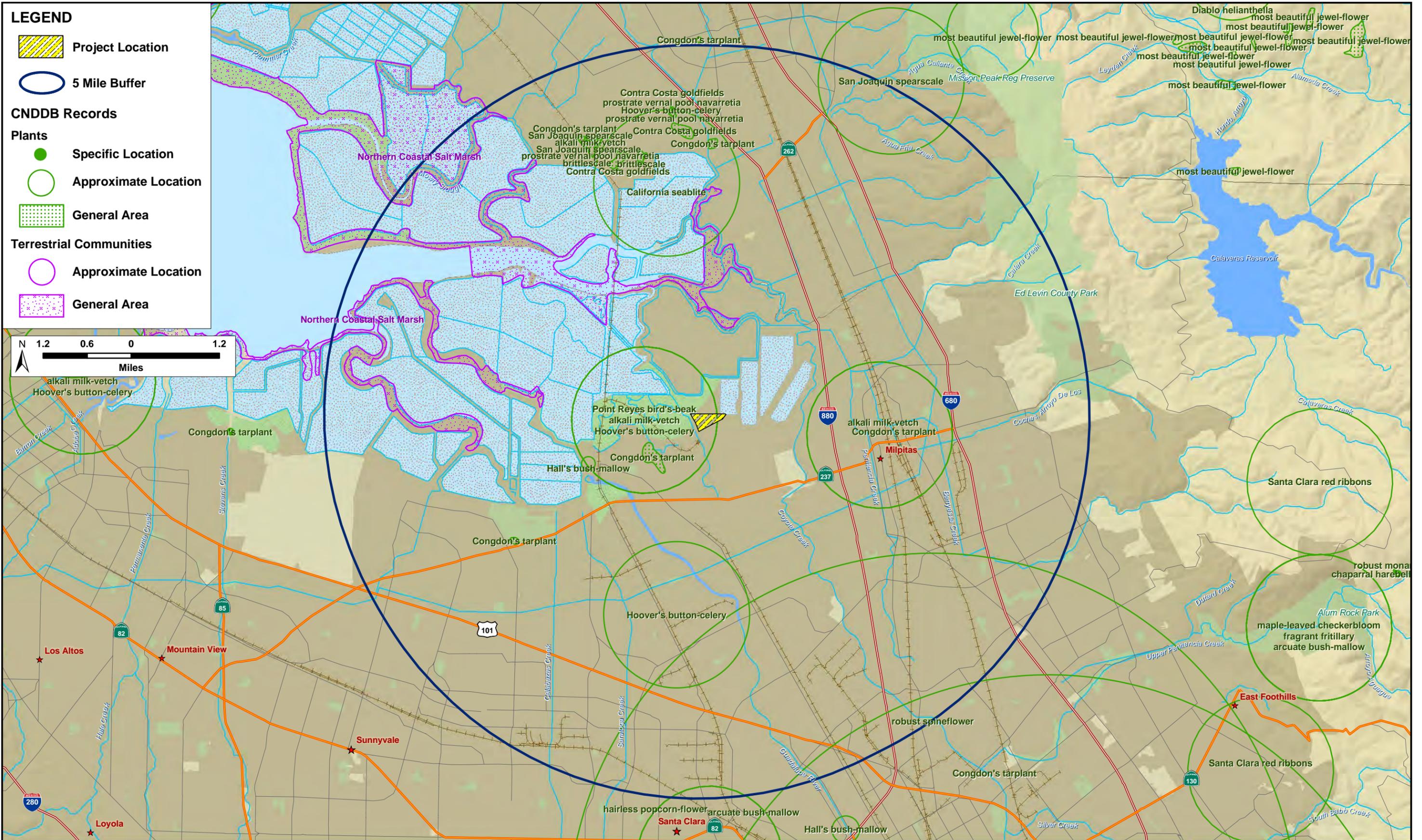
- List 1A Plants considered by the CNPS to be extinct in California.
- List 1B Plants rare, threatened, or endangered in California and elsewhere.
- List 2 Plants rare, threatened, or endangered in California, but more numerous elsewhere.
- List 3 Plants about which we need more information – a review list.

### **SPECIAL-STATUS PLANT SPECIES**

Reconnaissance-level surveys were conducted on 3 December 2009 for habitats capable of supporting special-status plant species. Prior to the site surveys, information concerning the known distribution of threatened, endangered, or other special-status plant species with potential to occur in the area was collected from several sources and reviewed. The sources included the CDFG's Natural Diversity Database (CNDDDB 2010) and information available through the USFWS, CDFG, and technical publications. The CNPS's *Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2010) and *The Jepson Manual* (Hickman 1993) supplied information regarding the distribution and habitats of vascular plants in the vicinity. Additionally, the previous special-status plant analyses for the ZRRROL Project (H. T. Harvey & Associates 2004, 2008) and the biological resources report produced for the adjacent ZMPF Project (H. T. Harvey & Associates 2007) were consulted.

A query of special-status plants in the CNDDDB (Figure 3a) was first performed for the USGS Milpitas topographical quadrangle in which the Project site occurs, as well as the eight quadrangles surrounding the Project site, which includes the Niles, La Costa Valley, Mountain View, Cupertino, Newark, Calaveras Reservoir, San Jose West, and San Jose East quadrangles. The CNPS Inventory was then queried to produce a similar list for Santa Clara County CNPS list 4 species, which are not tracked by 7.5-minute quadrangle, but instead are only tracked using county-level data. The final list of special-status plant species considered included 65 species known to occur within the above quadrangles or for list 4s, in Santa Clara County.

Many of the special-status plant species that occur in the Milpitas quadrangle or the surrounding quadrangles, or in Santa Clara County, are associated with habitats or soil types that did not occur on the Project site historically, or no longer occur on the Project site due to the extensive removal of soil and addition of fill and landfill material. Such habitats and soil types that are absent from the Project site include serpentine soils, clay soils, rock outcrops, vernal pool habitat, riparian habitat, chaparral, coastal salt marshes, and cismontane woodland habitat. Additionally, many of the species identified as potentially occurring in the area occur at much higher elevations than are present at the Project site. Finally, the site is extremely disturbed by fill soil placement and non-native weedy plant invasions, and as such, was too degraded to be considered to support many species. Therefore, 53 species were eliminated from further consideration as shown in Appendix B.



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Only 12 species associated with valley and foothill grassland or coastal scrub habitats that occur within elevations present at the Project site, that did not require a specific soil type that would be very unlikely to occur within the fill and landfill matrix, or that have been recorded within the immediate site vicinity (5 miles of the Project site) were analyzed further for rarity, none of which were identified as potentially occurring in the Project site. CNDDDB (2010) records list 12 species as occurring within five miles (8 km) of the Project site: brittlescale (*Atriplex depressa*), San Joaquin spearscale (*Atriplex joaquiniana*), Congdon's tarplant (*Centromadia parryi* ssp. *congdonii*), Contra Costa goldfields *Lasthenia conjugens*), alkali milk-vetch (*Astragalus tener* var. *tener*), hairless popcorn flower (*Plagiobothrys glaber*), robust spineflower (*Chorizanthe robusta* var. *robusta*), Hoover's button-celery (*Eryngium aristulatum* var. *hooveri*), California seablight (*Suaeda californica*), Hall's bush mallow (*Malacathamnus hallii*), prostrate vernal pool navarretia (*Navarretia prostrata*), and Point Reyes bird's-beak (*Cordylanthus maritimus* ssp. *palustris*) (Figure 3a). All of these special-status species were rejected from consideration as potentially occurring on-site due to the degraded nature of habitat on the site, the lack of associated native species or potential habitat (such as chaparral habitat for Hall's bush mallow), and/or the absence of specific microhabitat variables such as alkaline soil type or appropriate wetland hydrology (Table 2). The only habitat on-site that is not disturbed on a continual basis is the ruderal *Baccharis* scrub habitat that occurs on the southeastern portion of the Project site. This habitat is not suitable for any special-status species listed, as it is well drained upland, with older fill soils and a very thick grassy canopy cover dominated by non-native grasses. Alkali milk-vetch, Congdon's tarplant, Point Reyes bird's-beak, and Hoover's button-celery are discussed in greater detail below because these species have been recorded, at least historically, very close to the Project site.

**Alkali Milk-vetch (*Astragalus tener* var. *tener*).** **Federal Listing Status: None; State Listing Status: None; CNPS List: 1B.2.** Alkali milk-vetch is an annual herb in the pea family (Fabaceae) that blooms from March to June. It occurs in alkaline soils in playas, valley and foothill grasslands underlain by adobe clay, and vernal pool habitats at elevations between 3 and 197 feet (CNPS 2010). Associate species include calicoflower (*Downingia* spp.), woolly marbles (*Psilocarphus* spp.), and popcorn flower (*Plagiobothrys* spp.).

An occurrence, which has not been observed since 1905 and is likely extirpated, is recorded from the Alviso marshes directly adjacent to the west and north of the Project site (CNDDDB 2009CNDDDB 2010). However, no suitably alkaline wetlands underlain by adobe clays occur in the Project site, and thus this species is considered absent.

**Congdon's Tarplant (*Centromadia parryi* ssp. *congdonii*).** **Federal Listing Status: None; State Listing Status: None; CNPS List: 1B.2.** Congdon's tarplant is an annual herb in the composite family (Asteraceae) that has a variable blooming period extending from June through November. It occurs in valley and foothill grasslands, particularly those with alkaline substrates, and in slumps or disturbed areas where water collects in lower elevation wetlands below approximately 760 feet. The subspecies tolerates disturbance and often occurs in disked fields with non-native, California annual grassland habitat with Harding grass (*Phalaris paradoxa*) and alkali mallow (*Malvella leprosa*).

**Table 2. Special-status Species, Their Status, and Potential Occurrence on the Zero Waste Anaerobic Digestion Facility Project Site.**

NAME	*STATUS	HABITAT	POTENTIAL FOR OCCURRENCE ON SITE
<b>Federal or State Endangered and Threatened Species</b>			
Robust Spineflower ( <i>Chorizanthe robusta</i> var. <i>robusta</i> )	FE, CNPS List 1B.1	Chaparral (maritime), cismontane woodland (openings), coastal dunes, coastal scrub- sandy or gravelly	One historical occurrence recorded some 5 miles south of the Project site; however, this occurrence is considered extirpated. It is highly likely that all suitable interior stabilized dunes that historically occurred in the area have been developed. No dune soils exist on the Project site. Therefore, the species is absent.
Contra Costa Goldfields ( <i>Lasthenia conjugens</i> )	FE, CNPS List 1B.1	Cismontane woodland, playas (alkaline), mesic areas in valley and foothill grassland, vernal pools	Species occurs north of the Project site, in Alameda County. Presumed extirpated from Santa Clara County; no suitable vernal pool habitat or wetlands exist within the Project area. Therefore, the species is absent.
California Seablite ( <i>Suaeda californica</i> )	FE, CNPS List 1B.1	Coastal salt marshes, transition zones along such marshes	The only documented occurrence in the region was located in marshy baylands to the north of the Project site. However, this species has since been extirpated from the San Francisco Bay. This species is absent from the Project site.
Vernal Pool Tadpole Shrimp ( <i>Lepidurus packardii</i> )	FE	Vernal pools and swales containing clear to highly turbid water.	Only Bay Area records are from Fremont, well north of the Project site. No vernal pool habitat is present on the Project site. Presumed absent.
Central California Coast Steelhead ( <i>Oncorhynchus mykiss</i> )	FT	Cool streams with suitable spawning habitat (gravel substrate free of aquatic vegetation).	No suitable habitat on-site. Not expected to occur in portion of Artesian Slough adjacent to the Project site due to lack of spawning habitat upstream and distance from confluence with Coyote Creek. Presumed absent.
California Red-legged Frog ( <i>Rana draytonii</i> )	FT, SP, CSSC	Streams, freshwater pools and ponds with overhanging vegetation	No records from the Alviso area, and no suitable freshwater habitat on the Project site. Presumed absent.
California Tiger Salamander ( <i>Ambystoma californiense</i> )	FT, ST	Vernal or temporary pools in annual grasslands, or open stages of woodlands.	No records from the Alviso area, and no vernal pool habitat on the Project site. Presumed absent.
American Peregrine Falcon ( <i>Falco peregrinus anatum</i> )	SE, SP	Forages in many habitats; requires cliffs for nesting.	Occasional forager on site; no suitable breeding habitat on site.
Western Snowy Plover ( <i>Charadrius alexandrinus nivosus</i> )	FT, CSSC	Sandy beaches on marine and estuarine shores.	No suitable foraging or nesting habitat present on-site; the species has not been recorded utilizing marshes immediately adjacent to the Project site. Presumed absent.
California Clapper Rail ( <i>Rallus longirostris obsoletus</i> )	FE, SE, SP	Tidal salt marsh dominated by cordgrass and pickleweed; occasionally occurs in brackish marshes.	No suitable habitat on Project site, and has never been recorded in Artesian Slough upstream of the Environmental Education Center. Presumed absent.
California Least Tern ( <i>Sterna antillarum browni</i> )	FE, SE, SP	Nests on beaches and localized open areas (e.g., an old runway at Alameda National Wildlife Refuge), forages in tidal waters and managed ponds.	No suitable habitat on Project site. Presumed absent.
Willow Flycatcher ( <i>Empidonax traillii</i> )	SE FE ( <i>extimus</i> )	Breeds in riparian habitats in mountains and southern deserts.	Uncommon migrant; does not breed in region. It is likely that none occurring on-site are of the listed forms.
Salt Marsh Harvest Mouse ( <i>Reithrodontomys raviventris</i> )	FE, SE	Pickleweed in saline emergent wetlands.	Pickleweed-dominated habitat in nearby salt marshes provide suitable habitat, and this species has been found in these areas; however, no suitable habitat occurs on the Project site. Presumed absent.

**Table 2. Special-status Species, Their Status, and Potential Occurrence on the Zero Waste Anaerobic Digestion Facility Project Site.**

<b>NAME</b>	<b>*STATUS</b>	<b>HABITAT</b>	<b>POTENTIAL FOR OCCURRENCE ON SITE</b>
<b>CNPS-Listed Plant Species</b>			
Alkali Milk-vetch ( <i>Astragalus tener</i> var. <i>tener</i> )	CNPS List 1B.2	Playas, valley and foothill grassland (adobe clay), vernal pools on alkaline soils/	Four recorded populations from the general vicinity, with one occurrence known from New Chicago Marsh in Alviso within 1 mile of the Project site. However, no suitable wetlands occur on-site, and therefore the species is absent.
Brittlescale ( <i>Atriplex depressa</i> )	CNPS List 1B.2	Chenopod scrub, meadows and seeps, playas, valley and foothill grasslands, and vernal pools on alkaline, clay soils	Closest known occurrence is in baylands north of Mud Slough in alkaline seasonal wetlands on clay soils. No such habitat or soils occur on Project site, and therefore, this species is absent.
San Joaquin Spearscale ( <i>Atriplex joaquiniana</i> )	CNPS List 1B.2	Chenopod scrub, meadows and seeps, playas, valley and foothill grassland on alkaline soils	Extant occurrences exist to the northeast and north of the Project Area in alkaline seasonal wetlands. No such habitat exists on site, and therefore this species is absent.
Congdon's Tarplant ( <i>Centromadia parryi</i> ssp. <i>congdonii</i> )	CNPS List 1B.2	Valley and foothill grassland (alkaline, mesic)	Several populations are recorded near the Project in the Warm Springs region of Fremont and west of the site in Alviso. The species often occurs in disturbed areas on alkaline soils and could occur in disturbed California annual grassland habitat if it were mesic. However, based on the dominant species on-site, the fill soils are not sufficiently alkaline and there are no wetland areas suitable for this species; considered absent.
Point Reyes Bird's-beak ( <i>Cordylanthus maritimus</i> ssp. <i>palustris</i> )	CNPS List 1B.2	Marshes and swamps (coastal salt)	Several historical occurrences in the South Bay, one within the marshes north of Alviso and within 0.5 miles of the Project site. However, the species is considered extirpated from the entire southern San Francisco Bay Area and is now only known from areas near San Francisco and north within San Pablo Bay. No suitable marshes occur on-site. Therefore, the species is absent from the site.
Hoover's Button-celery ( <i>Eryngium aristulatum</i> var. <i>hooveri</i> )	CNPS List 1B.1	Vernal pools, often in alkaline soils	There are several occurrences of the species from the vicinity, with one occurrence known from the New Chicago Marsh in Alviso immediately to the northwest of the Project site. However, no vernal pools or suitable alkaline soils occur on-site, and the species is therefore absent.
Hall's Bush-mallow ( <i>Malacothammus hallii</i> )	CNPS List 1B.2	Chaparral, coastal scrub	There is one known record of the species from the Project vicinity, where it occurs on a levee slope. However, it not expected to occur on Project site, and as a perennial shrub would have been detectable in December when surveys were performed. Therefore, this species is absent from the site.
Prostrate Vernal Pool Navarettia ( <i>Navarettia prostrata</i> )	CNPS List 1B.1	Meadows and seeps in coastal scrub, valley and foothill grassland(alkaline), and vernal pools	Several records occur in marshes north of the Project site in Alameda County. Suitable seepy or alkaline wetlands do not occur on site, therefore this species is considered absent.
Hairless Popcorn Flower ( <i>Plagiobothrys glaber</i> )	CNPS List 1A	Meadows and seeps (alkaline), marshes and swamps (coastal salt)	A population is recorded from 5 miles south of the Project site, although this population is currently believed extirpated. The species is also thought to be extirpated from Santa Clara County and the surrounding areas near San Francisco Bay. No suitable habitat occurs on-site. Therefore, the species is absent.
<b>California Species of Special Concern</b>			
Central Valley Fall- Run Chinook Salmon ( <i>Oncorhynchus tshawytscha</i> )	SSC	Cool rivers and large streams that reach the ocean and that have shallow, partly shaded pools, riffles, and runs.	No suitable habitat on-site. Not expected to occur in portion of Artesian Slough on-site due to lack of spawning habitat upstream and distance to confluence with Coyote Creek. Presumed absent.

<b>Table 2. Special-status Species, Their Status, and Potential Occurrence on the Zero Waste Anaerobic Digestion Facility Project Site.</b>			
<b>NAME</b>	<b>*STATUS</b>	<b>HABITAT</b>	<b>POTENTIAL FOR OCCURRENCE ON SITE</b>
Western Pond Turtle ( <i>Emys marmorata</i> )	CSSC	Permanent or nearly permanent fresh water in a variety of habitats.	No suitable habitat on site; presumed absent.
Golden Eagle ( <i>Aquila chrysaetos</i> )	CSSC	Nests on cliffs, in large trees, and occasionally on electrical towers, forages in extensive open areas.	Occasional forager on site; no suitable breeding habitat on site.
Northern Harrier ( <i>Circus cyaneus</i> )	CSSC (nesting)	Nests in extensive grassland or tall wetland vegetation, forages in a variety of open habitats.	Forages on site. No suitable undisturbed nesting habitat present. Presumed absent as a breeder.
Burrowing Owl ( <i>Athene cunicularia</i> )	CSSC	Nests and roosts in burrows, usually of ground squirrels, in grasslands and ruderal habitats.	Known to occur in the Project vicinity. Ground squirrels on the Project site provide potential burrows. No evidence of burrowing owls was found during the site visit. Burrowing owls could potentially breed, forage, and/or roost on the Project site in low numbers.
Short-eared Owl ( <i>Asio flammeus</i> )	CSSC (nesting)	Requires tall emergent vegetation or grasses for mating.	Possibly a rare forager during the non-breeding season, but not expected to breed on the site. Presumed absent as a breeder.
Loggerhead Shrike ( <i>Lanius ludovicianus</i> )	CSSC (nesting)	Nests in tall shrubs and dense trees, forages in grasslands, marshes, and ruderal habitats.	Likely forages on the site. Trees and shrubs provide potential breeding sites. Could breed on the Project site.
San Francisco Common Yellowthroat ( <i>Geothlypis trichas sinuosa</i> )	CSSC	Breeds in fresh and salt marshes around South San Francisco Bay where there is thick foraging cover; breeds in tall grass, tules, willows.	Breeds in brackish marsh near the Project site. May occasionally forage on the Project site, but no breeding habitat is present on Project site. Presumed absent as a breeder.
California Yellow Warbler ( <i>Dendroica petechia brewsteri</i> )	CSSC (nesting)	Nests in dense stands of willow and other riparian habitat.	Yellow warblers occur on-site during migration, but no breeding habitat is present on the Project site. Presumed absent as a breeder.
Alameda Song Sparrow ( <i>Melospiza melodia pusillula</i> )	CSSC	Breeds and forages primarily in salt marsh habitats in the South San Francisco Bay.	Song sparrows are known to breed adjacent to the Project site, but it is not known whether these are Alameda song sparrows or the more widespread freshwater race <i>gouldii</i> . May occasionally forage on the Project site, but no breeding habitat present on the Project site. Presumed absent as a breeder.
Bryant's Savannah Sparrow ( <i>Passerculus sandwichensis alaudinus</i> )	CSSC	Breeds and forages primarily in salt marsh habitats and adjacent grassland or ruderal habitats from Humboldt County to Monterey County.	Savannah sparrows of undetermined subspecies were observed on the site during reconnaissance surveys. Known to breed in the Project vicinity. Site provides marginal breeding habitat. Species could breed on the Project site in low numbers.
Tricolored Blackbird ( <i>Agelaius tricolor</i> )	CSSC (nesting)	Breeds near fresh water in dense emergent vegetation.	Occurs during non-breeding season in the brackish marsh adjacent to the Project site, but has never been documented breeding in the area. No breeding habitat is present on the Project site; could occur as an occasional forager.
Salt Marsh Wandering Shrew ( <i>Sorex vagrans halicoetes</i> )	CSSC	Pickleweed-dominated tidal salt marsh with substantial woody debris cover, such as driftwood.	Pickleweed marsh adjacent to the Project area provides potentially suitable conditions for this species, but no suitable habitat on the Project site. Presumed absent.
<b>State Protected Species</b>			
White-tailed Kite ( <i>Elanus leucurus</i> )	SP (nesting)	Forages in open areas of many habitats.	Forages on site, and known to nest immediately outside the Project area along Artesian Slough. Not expected to nest on the property due to small size of, and frequent disturbance near, the few trees on site.

**\*REGULATORY STATUS**

- FE = Federally listed Endangered
- FT = Federally listed Threatened
- SE = State listed Endangered
- ST = State listed Threatened
- CNPS = California Native Plant Society Rare Plant Inventory Lists
- CSSC = California Species of Special Concern
- SP = State Protected Species

Congdon's tarplant occurs in Alameda, Contra Costa, San Mateo, Monterey, San Luis Obispo, and Santa Clara counties, and it is presumed extirpated from its historical range in Solano and Santa Cruz counties (CNPS 2010). A record of Congdon's tarplant is listed in the CNDDDB (2009) as occurring very near the Project site, in Alviso, located north of State Route 237 and east of North 1<sup>st</sup> Street in a field bounded by Grand Avenue, Wilson Way, Nortech Parkway, and Disk Drive (CNDDDB 2009CNDDDB 2010). While this species can tolerate disturbance such as occurs on-site, it requires mesic, alkaline soils which do not occur on-site. The species is considered absent from the Project area.

**Point Reyes Bird's-beak (*Cordylanthus maritimus* ssp. *palustris*).** **Federal Listing Status: None; State Listing Status: None; CNPS List: 1B.2** Point Reyes bird's-beak is an annual, hemiparasitic herb in the figwort family (Scrophulariaceae) that blooms from June to October. This subspecies occurs only in coastal salt marshes and swamps at elevations from 0 to 34 ft. The Point Reyes bird's-beak was once common along the coastal regions of California, but extensive loss of suitable salt marsh habitat has severely restricted the range of this herb.

Point Reyes bird's-beak is documented in 23 USGS quadrangles in Humboldt, Marin, San Francisco, and Sonoma counties. It is listed as endangered in Oregon, and is presumed extirpated from Alameda, Santa Clara, and San Mateo counties. A historic population occurred in the marshes to the north and west of the Project area, but this population has not been observed since 1905 and is considered extirpated (CNDDDB 2009CNDDDB 2010). No suitable habitat for the species occurs on-site, and it is considered absent from the Project area.

**Hoover's Button Celery (*Eryngium aristulatum* var. *hooveri*)** **Federal Listing Status: None; State Listing Status: None; CNPS List: 1B.1.** Hoover's button celery is an annual to a perennial herb in the parsley (Apiaceae) family that blooms in July. It occurs in vernal pool habitats from 10 to 148 feet elevation. This California endemic is documented in nine USGS 7.5-minute quadrangles in Alameda, San Benito, Santa Clara, San Diego, and San Luis Obispo Counties (CNPS 2010). Associate species include calicoflower (*Downingia* spp.), woolly marbles (*Psilocarphus* spp.), and popcorn flower (*Plagiobothrys* spp.).

This variety may be extirpated from Santa Clara County. Although occurrences were historically located near to the Project site in roadside ditches to the west of Alviso or in nearby baylands, and approximately 0.5 mile north of Montague Expressway, west of Agnews State Hospital (CNDDDB 2009CNDDDB 2010), the species was last reported in these areas in 1902. Due to the degree of development in the area since they were last seen, these populations are likely no longer extant. Additionally, because of the lack of suitable vernal pool habitat in the Project site, this species is considered absent.

## **SPECIAL-STATUS WILDLIFE SPECIES**

Reconnaissance-level surveys were conducted on 3 December 2009 for habitats capable of supporting special-status wildlife species. Prior to the site survey, information concerning the known distribution of threatened, endangered, or other special-status wildlife species with potential to occur in the area was collected from several sources and reviewed. The sources included the California Natural Diversity Database (CNDDDB 2010, Figure 3b), information provided by the Sacramento office of the USFWS, and other technical information sources.



Additionally, the previous special-status plant analyses for the ZRRROL Project (H. T. Harvey & Associates 2004, 2008) and the biological resources report produced for the adjacent ZMPF Project (H. T. Harvey & Associates 2007) were consulted.

The CNDDDB was queried for occurrences of special-status wildlife species within the USGS Milpitas topographical quadrangle in which the Project site occurs, and the eight surrounding quadrangles. The specific habitat requirements and the locations of known occurrences of each special-status wildlife species were the principal criteria used for inclusion in the list of species potentially occurring on the property and the Project site (Table 2).

The Project is outside the known range of, or lacks suitable habitat for, a number of special-status wildlife species known to occur in the South Bay, including the vernal pool tadpole shrimp (*Lepidurus packardi*), Central California Coast steelhead (*Oncorhynchus mykiss*), Central Valley fall-run Chinook salmon (*Oncorhynchus tshawytscha*), California red-legged frog (*Rana aurora draytonii*), California tiger salamander (*Ambystoma californiense*), western pond turtle (*Emys marmorata*), western snowy plover (*Charadrius alexandrinus nivosus*), and California least tern (*Sterna antillarum browni*). Suitable habitat for these species is absent from the property, and none of these species has been recorded in the immediate Project vicinity. Therefore, these species are absent from the Project site. Other special-status species may occur on the property only as uncommon to rare visitors, migrants, or transients, or may forage on the site in low numbers while breeding in adjacent areas. However, these species are not expected to breed on the Project site, or to be substantially affected by the proposed Project. These species include the short-eared owl (*Asio flammeus*), northern harrier (*Circus cyaneus*), white-tailed kite (*Elanus leucurus*), American peregrine falcon (*Falco peregrinus*), golden eagle (*Aquila chrysaetos*), California yellow warbler (*Dendroica petechia brewsteri*), and tricolored blackbird (*Agelaius tricolor*). Any migrant willow flycatchers (*Empidonax traillii*) occurring on the site are likely from breeding populations outside the state, and thus would not be considered representatives of the state or federally listed California populations.

More detailed discussion is provided below for those species for which suitable breeding habitat is present on or immediately adjacent to the site, or for which resource agencies have expressed particular concern in the Project vicinity.

### **Federal or State Endangered or Threatened Species**

**California Clapper Rail (*Rallus longirostrus obsoletus*). Federal Listing Status: Endangered; State Listing Status: Endangered.** The California clapper rail is a year-round endemic of the tidal marshes fringing the San Francisco Bay (Schwarzbach et al. 2006), although historically populations also occurred in salt marshes in the Tomales, Monterey, and Morro Bays (Harvey 1990, Eddleman and Conway 1998). Rail populations were decimated by extensive habitat loss and hunting in the 19<sup>th</sup> and early 20<sup>th</sup> centuries (Baron and Takegawa 1994). Continued degradation and loss of tidal marsh habitat, pollution, and the ubiquitous presence of non-native predators such as red fox (*Vulpes vulpes*) and feral cats continue to limit rail populations throughout their remaining distribution (Foin et al. 1997, Schwarzbach et al. 2006). Rails are obligate salt-marsh inhabitants, particularly where pickleweed (*Salicornia* spp.) and/or non-native cordgrass (*Spartina* spp.) are the dominant vegetation. They construct cup nests in the upper marshes near tidal sloughs beginning in late March; the breeding season runs through

August. They forage in the mud of tidal sloughs, retreating to the upper marsh during high tides. Prime habitat for California clapper rails consists of broad patches of pickleweed-dominated salt marsh free from introduced predators, with abundant slough channels, a fringe of tall salt marsh vegetation above the high-tide line, and abundant invertebrate populations (Baron and Takegawa 1994, Eddleman and Conway 1998).

No suitable tidal marsh habitat is present on the Project site itself. California clapper rails have not been documented breeding along Artesian Slough, the only marsh channel in the Project vicinity, and the freshwater influence of WPCP effluent discharge here maintains marsh vegetation dominated by freshwater species. Although clapper rails are typically found in tidal salt marshes, they have also been documented in brackish marshes in the South Bay. However, brackish habitats where clapper rails have been found are dominated by alkali bulrush, as opposed to the tule-dominated habitat in the channel adjacent to the Project site. Clapper rails have been seen in Artesian Slough during the non-breeding season as far south (upstream) as the San Francisco Bay National Wildlife Refuge Environmental Education Center (January 1999 and January-February 2001; Santa Clara County unpublished bird data). However, they have never been seen south of this point, in areas closer to the Project site. Clapper rails are thus considered absent from the Project area and its vicinity.

**Western Snowy Plover (*Charadrius alexandrinus nivosus*).** **Federal Listing Status: Threatened; State Listing Status: Species of Special Concern.** The western snowy plover is a small shorebird distributed along the Pacific and Gulf coasts of the United States, and patchily in the interior west during the winter months (Page et al. 1995). The majority of coastal snowy plover habitat is threatened by habitat loss and degradation, disturbance due to human activities, and an influx of introduced nest predators (Ruhlen et al. 2003, Neuman et al. 2004). Snowy Plover breeding habitat on the Pacific coast is typified by sandy beaches, gravel spits, salt pans, and other open, sparsely vegetated habitats near the ocean (Colwell et al. 2005). Breeding begins in California around mid-February, and nesting birds lay one to three clutches of 2 to 6 eggs in shallow scrapes near patches of cover such as driftwood, kelp, or low vegetation. The breeding season runs through September, and in central California plover populations persist throughout the year, with nonbreeding birds foraging on invertebrates on shorelines, tidal flats, and salt ponds (Page et al. 1995). Optimal snowy plover nesting habitat is comprised of sandy substrates with sparsely distributed camouflaging debris or shrubs, supporting only low numbers of native predators and no introduced predators, and protected from human activities including off-road vehicles. Although Snowy Plovers are not thought to have bred historically within the San Francisco Bay due to lack of suitable habitat, they have begun breeding in salt ponds around the bay during this century. Here, they nest on the bottoms of dried-out ponds, on islands, and on undisturbed levees.

Snowy plovers breed in salt ponds throughout the south end of San Francisco Bay, although the closest nesting records to the Project site are at Pond A8, southwest of Alviso Slough, and at Ponds A22 and A23, north of Coyote Creek. They are also occasionally seen foraging in New Chicago Marsh, northwest of the Environmental Education Center entrance road. Habitat near the Project site is not suitable for nesting, in that there are relatively few areas of open salt pans, all of which are too small to be consistent with typical snowy plover nesting habitat.

Therefore, snowy plovers are considered to be absent from the property, and would not be expected to nest close enough to be disturbed by any Project activities.

**Salt Marsh Harvest Mouse (*Reithrodontomys raviventris*). Federal Listing Status: Endangered; State Listing Status: Endangered, Protected.** The salt marsh harvest mouse is a small rodent found only in saline wetlands of San Francisco Bay and its tributaries. The southern subspecies *R. r. raviventris* is restricted to an area from San Mateo County and Alameda County along both sides of San Francisco Bay south to Santa Clara County. The salt marsh harvest mouse occurs with the closely related, ubiquitous and abundant western harvest mouse (*R. megalotis*) at upper edges of marshes and in marginal areas. Both animals occur in pickleweed, but the salt marsh harvest mouse replaces the western harvest mouse in denser areas of pickleweed. The salt marsh harvest mouse has declined substantially in recent decades. This decline is thought to be due to diking and filling of marshes, subsidence, and changes in salinity brought about by increasing volumes of fresh water discharge into the bay.

No suitable pickleweed-dominated habitat occurs on the Project site. New Chicago Marsh, to the northwest of the Project area beyond the Zanker Material Processing Facility, supports a substantial population of salt marsh harvest mice (Shellhammer 2000a). In 1990, H. T. Harvey & Associates conducted trapping surveys for salt marsh harvest mice in marsh habitat near the Project area to the north and west (H. T. Harvey & Associates 1990). These surveys resulted in the capture of six salt marsh harvest mice during 800 trap nights (200 traps open for 4 nights). Therefore, the pickleweed-dominated marshes north of the western portion of the Project site are presumed to support this species. Although salt marsh harvest mice spend most of their lives in pickleweed habitat, they occasionally move into adjacent upland habitat, such as the grassland habitat to the north of the Project site. However, the Project site itself is far-removed from salt marsh habitat, and thus salt marsh harvest mice are not expected to occur on the site itself, or in immediately adjacent areas.

### **California Species of Special Concern**

**Burrowing Owl (*Athene cunicularia*). Federal Listing Status: None; State Listing Status: Species of Special Concern (Nesting Only).** In California burrowing owls are distributed throughout the state, with populations in the northeast; in the Central Valley, interior San Francisco Bay Area, and Salinas Valley; on the Carrizo Plain and in the Imperial Valley; and on several of the Channel Islands. Habitat loss has reduced the abundance of this species within its range and resulted in local extirpations, particularly along the central and southern coasts (Gervais et al. 2008). California hosts both migratory and sedentary populations of burrowing owls (Rosenberg et al. 2007). These owls favor flat, open grassland or gentle slopes and sparse shrubland ecosystems for breeding, though they will also readily colonize agricultural fields and other developed areas (Haug et al. 1993, Conway et al. 2006). Mammal burrows, or other structures that mimic burrows, provide secure nesting locations and nonbreeding refuges and are a fundamental ecological requirement of burrowing owls (Gervais et al. 2008); in California, owls are most often found in close association with California ground squirrel burrows (Rosenberg et al. 2007). Ideal habitat for burrowing owls is comprised of annual and perennial grasslands with low vegetation height, sparse or nonexistent tree or shrub cover, and an abundance of mammal burrows (Coulombe 1971, Haug and Oliphant 1990, Plumpton and Lutz 1993, Rosenberg et al. 2007). The nesting season as recognized by the California Department of Fish and Game (1995)

runs from February 1 through August 31. After nesting is completed, adult owls may remain in their nesting burrows or in nearby burrows, or may migrate (Rosenberg et al. 2007); young birds disperse across the landscape, from 0.1 to 33 miles from their natal burrows (Rosier et al. 2006). The South Bay region (from San Mateo on the Peninsula and Alameda County on the East Bay) supports the state's fourth largest discrete population, and this population has declined dramatically since the 1980s.

No evidence of burrowing owls was observed on the site during the reconnaissance-level survey conducted for the Project. However, this species is known to occur in the grasslands and ruderal habitats on WPCP lands south of the site, and in New Chicago Marsh to the west (Figure 3). Burrowing owls are expected to occur on the site at least as occasional foragers. California ground squirrel burrows on the site provide potential roosting and nesting sites for the species, and burrowing owls could potentially nest or roost on the site.

**Loggerhead Shrike (*Lanius ludovicianus*). Federal Listing Status: None; State Listing Status: Species of Special Concern (Nesting Only).** The loggerhead shrike is distributed throughout much of California, except in higher-elevation and heavily forested areas including the Coast Ranges, the Sierra Nevada, the southern Cascades, the Klamath and Siskiyou ranges, and the highest parts of the Transverse Ranges. While the species range in California has remained stable over time, populations have declined steadily (Cade and Woods 1997, Humple 2008). Loggerhead shrikes establish breeding territories in open habitats with relatively short vegetation that allows for visibility of prey; they can be found in grasslands, scrub habitats, riparian areas, other open woodlands, ruderal habitats, and developed areas including golf courses and agricultural fields (Yosef 1996). They require the presence of structures for impaling their prey; these most often take the form of thorny or sharp-stemmed shrubs, or barbed wire. Shrikes nest earlier than most other passerines, especially in the west where populations are sedentary. The breeding season may begin as early as late February, and lasts through July. Nests are typically established in shrubs and low trees including sagebrush, willow, and mesquite, through brush piles may also be used when shrubs are not available (Yosef 1996, Humple 2008). Loss and degradation of breeding habitat, as well as possible negative impacts of pesticides, are considered to be the major contributors to the population declines exhibited by this species (Cade and Woods 1997, Humple 2008).

Loggerhead shrikes forage in the ruderal habitats surrounding the Project area, and are also likely to utilize the Project site itself. A small number of pairs, but likely not more than two pairs based on an average territory size of 8.5 ha (Yosef 1996), could potentially breed on the site.

**San Francisco Common Yellowthroat (*Geothlypis trichas sinuosa*). Federal Listing Status: None State Listing Status: Species of Special Concern (Nesting Only).** The San Francisco subspecies of the widely-distributed common yellowthroat is found only on the immediate coast of California from Tomales Bay in the north to the southern edge of San Mateo County in the south, including the San Francisco Bay. Their current range reflects their historic distribution, but habitat degradation and loss dramatically reduced the abundance of the subspecies within its range, even resulting in local extirpations before increases in freshwater marsh habitats on the bay began increasing in the 1980s as a result of increases in freshwater effluent discharged from wastewater treatment plants. San Francisco common yellowthroats are typically associated with

brackish marshes and freshwater riparian swamps (Gardali and Evens 2008); they nest in the dense emergent vegetation that grows up in such moist areas (Guzy and Ritchison 1999). Common yellowthroats will use small and isolated patches of habitat as long as groundwater is close enough to the surface to encourage the establishment of dense stands of rushes (*Scirpus* spp.), cattails, willows (*Salix* spp.), *Juncus* spp., or other emergent vegetation (Nur et al. 1997, Gardali and Evens 2008). Ideal habitat, however, is comprised of at least 0.4 ha of thick riparian or marsh vegetation in perpetually moist areas, where populations of brown-headed cowbirds (*Molothrus ater*) are low (Menges 1998). Common yellowthroats build open-cup nests low in the vegetation, and nest from mid-march through late July. Common yellowthroats remain in their breeding range year-round (Gardali and Evens 2008).

In the South Bay, this species is a fairly common breeder in fresh and brackish marshes virtually wherever they occur, although very small patches of marsh often lack this species. Common yellowthroats breed in the brackish wetland habitat adjacent to the Project site, but suitable nesting habitat is not present within the Project area itself. San Francisco common yellowthroats may occasionally forage on the Project site, but they are considered absent as a breeding species.

**Alameda Song Sparrow (*Melospiza melodia pusillula*). Federal Listing Status: None; State Listing Status: Species of Special Concern (Nesting Only).** The Alameda song sparrow is a year-round endemic resident of the salt marshes of the San Francisco Bay from the cities of San Francisco and El Cerrito at the northern end of its range, to the southern limits of the Bay in Santa Clara County (Chan and Spautz 2008). While the range of the Alameda song sparrow has remained relatively unchanged over time, populations have been reduced substantially and are continually threatened by the loss and fragmentation of salt marshes around the Bay (Nur et al. 1997, Chan and Spautz 2008). Alameda song sparrows are inhabitants of tidally-influenced salt marshes dominated by pickleweed (*Salicornia* spp.) and cordgrass (*Spartina* spp.). They breed from February through August, and require some areas of high marsh for nesting habitat, in order to avoid inundation of nests during high tides (Arcese et al. 2002, Chan and Spautz 2008). While Alameda song sparrows will nest in exotic cordgrass as well as native pickleweed, birds nesting in cordgrass experience a significantly lower rate of nest success, largely due to tidal flooding, than birds nesting in native pickleweed, which is typically found at higher elevations in the marsh and is thus less susceptible to flooding (Nordby et al. 2008). Alameda song sparrows forage on bare ground along sloughs and in bare patches within the tidal marshes, consuming plants and invertebrates. Prime habitat for Alameda song sparrows is composed of large areas of tidally-influenced marsh intersected by tidal sloughs, offering dense vegetative cover, singing perches, and areas of high marsh for nesting; free from cordgrass and introduced predators; and adjacent to extensive upland habitat (Chan and Spautz 2008).

Song sparrows of indeterminate subspecies breed in the brackish marsh to the north of the Project site, and in the dense ruderal vegetation immediately outside the northwestern edge of the site. The location of the interface between populations of the Alameda song sparrow and those of the race breeding in freshwater habitats (*M. m. gouldii*) in the vicinity of the Project area is not well known due to difficulties in distinguishing individuals of these two subspecies in the field, and it is possible that the individuals on and near the site are *gouldii* rather than *pusillula*. Regardless, no breeding habitat for Alameda song sparrows is present within the Project site.

This species may occur as an occasional forager on the Project site, but is presumed to be absent from the Project site as a breeding species.

**Bryant's Savannah Sparrow (*Passerculus sandwichensis alaudinus*). Federal Listing Status: None; State Listing Status: Species of Special Concern (Nesting Only).** Bryant's savannah sparrow, a subspecies of the widely distributed savannah sparrow, is a California endemic ranging along the immediate coast from Humboldt Bay, Humboldt County in the north to Point Conception, Santa Barbara County in the south (Wheelwright and Rising 2008). Bryant's savannah sparrows breed from April through July (Dobkin and Granholm 1990) in the upper portions of tidally-influenced marshes, grasslands and ruderal habitats adjacent to tidal marshes, moist grasslands and pastures within the fog belt, and occasionally in drier grasslands up to 40 km inland. Ideal habitat is comprised of extensive moist grassland or upper marsh habitats with relatively short vegetation, some patches of bare ground, and nearby drainages (Fitton 2008). Cup nests are built on or near the ground in dense vegetation (Wheelwright and Rising 2008). Nonbreeding habitat preferences are little-known, but may be similar to breeding season habitats. The range of the Bryant's savannah sparrow has remained relatively stable, but numbers have declined, largely due to habitat loss, fragmentation, and degradation (Fitton 2008).

Historically, up to 1000 breeding pairs of this species were thought to occupy South San Francisco Bay (Wheelwright and Rising 2008). Declines concomitant with loss of marsh habitat have occurred, but savannah sparrows have been confirmed nesting recently near the Project site in the Coyote and Guadalupe watersheds (Rottenborn 2007). The pickleweed-dominated marshes north of the western portion of the site provide suitable nesting habitat for this species. The Project site provides much lower-quality breeding habitat due to frequent disturbance, less alkali-dominated vegetation, and presence of shrubs, but a few pairs of the species could potentially breed on the site.

**Salt Marsh Wandering Shrew (*Sorex vagrans halicoetes*). Federal Listing Status: None; State Listing Status: Species of Special Concern.** Formerly more widely distributed in the Bay Area, this small insectivorous mammal is now confined to salt marshes of the South Bay (Findley 1955). Salt marsh wandering shrews occur most often in medium-high wet tidal marsh (6 to 8 feet above sea level), with abundant driftwood and other debris for cover (Shellhammer 2000b). They have also been recorded occasionally in diked marsh. This species is typically found in fairly tall pickleweed, in which these shrews build nests.

This subspecies was formerly recorded from marshes of San Pablo and San Francisco Bays in Alameda, Contra Costa, San Francisco, San Mateo, and Santa Clara Counties, but captures in recent decades have been very infrequent anywhere in these areas. Shrews are occasionally captured during salt marsh harvest mouse trapping studies, but the difficulty in identifying them to species has precluded a better understanding of the current distribution of this species in the South Bay. As of 1986, there were only four locations, including Bair Island, the Alameda Creek mouth, Dumbarton Point, and Mowry Slough, where this species had been positively identified between 1980 and 1985, although the species was considered likely present in a number of other marshes in the South Bay (Western Ecological Services Company (WESCO) 1986). The pickleweed-dominated marshes north of the western portion of the Project site could

potentially support this species. However, there is no suitable salt marsh habitat on the Project site, and therefore this species is not expected to be present on the Project site.

## **SENSITIVE AND REGULATED HABITATS**

### **U.S. Army Corps of Engineers Jurisdictional Habitats**

**Overview.** Areas meeting the regulatory definition of “Waters of the U.S.” (jurisdictional waters) are subject to the jurisdiction of the USACE under provisions of Section 404 of the Clean Water Act (1972) and Section 10 of the Rivers and Harbors Act (1899). These waters may include all waters used, or potentially used, for interstate commerce, including all waters subject to the ebb and flow of the tide, all interstate waters, all other waters (intrastate lakes, rivers, streams, mudflats, sandflats, playa lakes, natural ponds, etc.), all impoundments of waters otherwise defined as “Waters of the U.S.,” tributaries of waters otherwise defined as “Waters of the U.S.,” the territorial seas, and wetlands (termed Special Aquatic Sites) adjacent to “Waters of the U.S.” (33 CFR, Part 328, Section 328.3). Wetlands on non-agricultural lands are identified using the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987).

Construction activities within jurisdictional waters are regulated by the USACE. The placement of fill into such waters must comply with permit requirements of the USACE. No USACE permit will be effective in the absence of state water quality certification pursuant to Section 401 of the Clean Water Act. The State Water Resources Control Board is the state agency (together with the Regional Water Quality Control Boards) charged with implementing water quality certification in California.

**Survey Results.** Reconnaissance-level field surveys for jurisdictional waters on the Project site were conducted on 3 December 2009 in accordance with USACE regulations and guidelines such that areas were inspected for a confluence of three wetland parameters: wetland hydrology, hydric soils, and hydrophytic vegetation. In addition, H. T. Harvey & Associates senior plant/wetlands ecologist Patrick Boursier, Ph.D. visited the site on 13 May 2010 to determine the dimensions and location of the seasonal wetlands in the ditch along the northeastern edge of the site.

The wetland shown on the NWI map no longer exists on-site. One small depressional ditch exists in the northern portion of the site adjacent to, and south of, the off-site landfill road. This ditch did not contain water during our 3 December 2009 site visit and was not dominated by hydrophytic vegetation except in a few small, isolated areas comprised of Italian rye-grass and curly dock. This ditch has been excavated within the surrounding ruderal habitat, probably for the purposes of runoff detention from the landfill slope. Such ditches generally have been considered non-jurisdictional by the USACE in the past due to their manmade nature and ongoing use for construction and operations. Also, one source of hydrology, possibly the main source, appears to be runoff from dust suppression efforts on the adjacent ZRRROL site. During our 13 May 2010 site visit, water spread by a dust suppression truck was collecting in drainage features along the roads on the ZRRROL site and discharging into the seasonal wetland ditch. The ditch does not empty into any other wetlands or aquatic habitats; rather, it is depressional,

with higher-elevation areas separating it from the extensive, natural wetland to the west/northwest.

Determination of the regulatory status of this ditch would require preparation of a Waters of the U.S. delineation report and a field review by the USACE. Ecologically, this depression serves few wetland functions.

### **California Department of Fish and Game Jurisdictional Habitats**

**Overview.** The CDFG potentially extends the definition of stream to include “intermittent and ephemeral streams, rivers, creeks, dry washes, sloughs, blue-line streams (USGS), and watercourses with subsurface flows. Canals, aqueducts, irrigation ditches, and other means of water conveyance can also be considered streams if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife” (CDFG 1994). Such areas on the site were determined using methodology described in *A Field Guide to Lake and Streambed Alteration Agreements, Sections 1600-1607* (CDFG 1994).

Activities that result in the diversion or obstruction of the natural flow of a stream, or which substantially change its bed, channel or bank, or which utilize any materials (including vegetation) from the streambed, may require that the Project applicant enter into a Streambed Alteration Agreement with the CDFG.

**Survey Results.** Reconnaissance-level field surveys were also conducted within the proposed Zerowaste Anaerobic Digestion Facility Project area for streams and other waterways potentially under the regulatory jurisdiction of the CDFG. There are no channels, drainages or waterways that the CDFG would claim under the Fish and Game Code as cited above.

## IMPACTS AND MITIGATION MEASURES

### SIGNIFICANCE CRITERIA

The proposed Project may have effects on the biological resources of the Project site. The California Environmental Quality Act (CEQA) and the CEQA Guidelines provide guidance in evaluating project impacts and determining which impacts will be significant. CEQA defines “significant effect on the environment” as “a substantial adverse change in the physical conditions which exist in the area affected by the proposed project.” Under CEQA Guidelines section 15065(a)(1) and Appendix G, a project’s effects on biotic resources may be significant when the project would:

- “have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory”
- “have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service”
- “have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service”
- “have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act” (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means”
- “interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites”
- “conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance”
- “conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan”

### KEY ASSUMPTIONS

The following impact analysis is based on the Project description provided by David J. Powers & Associates and on subsequent discussions with Powers staff regarding the Project. In particular, we have assumed that installation of the off-site water pipeline will occur entirely within developed areas in Los Esteros and Zanker Roads, with no impacts to adjacent natural or regulated habitats.

We have also assumed that no open-air, uncovered composting or storage of food waste, nor any landfill (*i.e.*, garbage burial) operations, will occur at the facility; that a VMP will be prepared and implemented to avoid attracting or subsidizing populations of nuisance species; and that adequate supervision of the implementation of the VMP by the CEQA Lead Agency will be provided to ensure that it is effective.

## **IMPACTS FOUND TO BE LESS THAN SIGNIFICANT**

### **Disturbance and Loss of Ruderal Grassland, Ruderal Baccharis Scrub, Developed, and Seasonal Wetland Ditch Habitat and Associated Species**

Up to 25.7 ac of ruderal grassland habitat, 7.6 ac of ruderal Baccharis scrub, 0.9 ac of developed habitat, and 0.2 ac of seasonal wetland ditch habitat on the Project site will be impacted by the Project (Figure 2), either through direct permanent impacts such as conversion to new developed uses, direct temporary impacts such as construction staging, or indirect impacts such as increased dust generation. Many of these areas have been recently disturbed through the deposit of fill soils. In addition, even areas such as the Baccharis scrub that have been undisturbed for presumably some years are dominated largely by non-native plant species. An additional 0.9 ac of ruderal/bare ground on the adjacent ZRRROL site will be impacted by grading for the driveway connecting the two sites.

No special-status plant species were found in this area, nor are any expected to occur in these habitats. The biological values of the habitats on the site are limited due to the frequent and ongoing disturbance of much of this area and the lack of high-quality wetlands or pools. The naturally occurring wetlands to the north and west are not manipulated and offer contiguous, natural habitat for plant and wildlife use. Ruderal and developed habitats predominantly support common plant and wildlife species. Loss of these habitats will result in the displacement of some common wildlife species and will result in a loss of habitat for these species. However, these habitats are locally and regionally abundant, and the Project will result in impacts to at most a very small proportion of regional populations and distributions of these species and habitats. As a result, the loss of such habitat will not result in a significant impact to biological resources. Loss of these habitats would not result in significant impacts to biological resources (but see *Potential Impacts to Individual Burrowing Owls and Their Burrows* below).

The seasonal wetland ditch does not provide high-quality wetland habitat for wildlife. Water may pond in the lowest portion of the ditch for a short duration after heavy rain events, but the source of dry-season hydrology (water from dust suppression trucks) does not provide aquatic or marshy habitat. As a result, this ditch does not provide suitable breeding habitat for amphibians, nor open-water foraging habitat for ducks or shorebirds. Wildlife use of this ditch is expected to be similar to that of the adjacent ruderal grassland habitat. Due to the marginal nature of the ecological functions and values provided by this ditch, impacts to this ditch resulting from the construction of an access road between the Project site and the ZRRROL site will be less than significant, whether or not the ditch is regulated by the USACE as Waters of the U.S. However, determination of the regulatory status of this ditch would require preparation of a Waters of the U.S. delineation report and a field review by the USACE, and if the USACE does claim jurisdiction over this feature, state and federal permits would be required to place fill in the ditch.

## **Addition of Treated Run-off Water to Adjacent Areas**

The current stormwater control plan (Worley Parsons Group, Inc. 2010) includes six vegetated swales, four forebays, and a series of storm drains designed to avoid and reduce impacts from stormwater run-off from the Project site to a less-than-significant level. The stormwater runoff collected in storm drains and discharged from drainage collection areas (basins) will first be channeled into open forebays, where all large sediment particles will settle out and can be removed as needed. The second water quality treatment will occur as each forebay continues to drain into one of six vegetated swales. This system will therefore provide two levels of water treatment before the stormwater is released at a controlled flow rate into the existing catch basin and wetlands to the west of the Project site. The rate of outflow being discharged to the existing water and wetlands will be limited so as to avoid exceeding the prevailing pre-developed flow. The forebay and vegetated swale containment system is designed to handle 100-year flood conditions, and therefore will not be overwhelmed and released untreated water into the adjacent wetlands.

In addition, the volume of runoff released from the site in any particular area is not expected to be substantially greater than existing conditions, as the outfall areas will distribute runoff to four release locations. As a result, release of runoff from the site is not expected to result in substantial changes in the character of receiving areas off-site (*e.g.*, by converting saltmarsh habitat to brackish or freshwater marsh). Thus, Project impacts to adjacent salt marsh and aquatic habitats resulting from stormwater runoff, including both quality and quantity-related impacts, are expected to be less-than-significant.

## **Impacts to Certain Special-status Wildlife Species**

Project implementation will modify habitats that are currently used or likely to be used as foraging habitat by a number of special-status wildlife species, including the short-eared owl, northern harrier, white-tailed kite, American peregrine falcon, golden eagle, willow flycatcher, California yellow warbler, and tricolored blackbird. However, these species use the Project site infrequently, and in low numbers, when foraging, and none of these species nests in the Project area. Therefore, the Project will have little, if any, effect on regional populations of these species.

Loggerhead shrikes could nest in ornamental trees or large bushes of coyote brush on the site. The Project could potentially result in the loss of habitat capable of supporting up to two pairs of shrikes and could result in the loss of up to two active loggerhead shrike nests through disturbance leading to nest abandonment or through direct destruction of the nest shrub or tree. Although this species is listed as a California species of special concern, it is fairly common in much of the San Francisco Bay area, and neither the loss of one or two inactive nests, nor the loss of the small amount of habitat on the Project site, compared with the amount of habitat available regionally, would be considered a significant impact to the species under CEQA.

Bryant's savannah sparrows could potentially nest in the ruderal grasses on the Project site. Savannah sparrows have been confirmed breeding in the Project vicinity. However the site does not support the extensive moist grassland or upper marsh habitats preferred by breeding Bryant's savannah sparrows, and the highly disturbed ruderal habitat characterizing the Project site would

likely support only a small number of breeding pairs, if any. The loss of such a small number of nests would not compromise the regional population, and the loss of the small amount of potential breeding habitat available on the site is minimal compared with the amount of habitat available regionally; thus, this Project is not expected to have a significant impact on Bryant's savannah sparrows under CEQA.

Note that the loss of an active nest of any native bird species, including loggerhead shrikes, Bryant's savannah sparrows, or other native birds, due to Project activities would be in violation of the federal Migratory Bird Treaty Act and State Fish and Game Code. Recommended measures for compliance with these laws are described in *Compliance with Additional Laws and Regulations Applicable to Biotic Resources of the Project Site*.

### **Impacts of Refuse Processing and Project Operation on Wildlife**

Due to intensive disturbance of the Project area that has been ongoing for years, impacts to wildlife resulting directly from habitat conversion will be minimal. However, the effects on wildlife of the new site conditions, including the presence of a large building and processing of food waste, must be addressed.

The AD facility will receive and process a variety of organic materials, including food waste. Food waste that is uncovered or is buried (*e.g.*, in a landfill) would attract nuisance species such as gulls, corvids, and rats, thus helping to sustain populations of these species in the South Bay and potentially leading to increased predation on, or competition with, sensitive native species. However, at the AD facility these materials will be received inside the proposed buildings, where biogas will be extracted in large, airtight "digesters", and remaining materials will be moved into tunnels for further composting. Only the final, "curing", stage of the compost production will occur outdoors, and at this stage the material will be almost fully decomposed, and will have a soil-like consistency and an earthy odor. No open-air, uncovered decomposing food waste, nor any landfill (*i.e.*, garbage burial) operations, will occur at the AD facility. As a result, food waste will be inaccessible to nuisance birds such as gulls and corvids, and the Project is not expected to provide food resources for these nuisance species.

Nevertheless, the Project incorporates the implementation of a VMP. The purpose of the VMP will be to minimize the degree to which nuisance species increase in the vicinity of the site as a result of materials processing activities. Such nuisance species, which include gulls, corvids such as common ravens and American crows, and nuisance mammals such as rats, opossums, raccoons, skunks, red foxes, and feral cats, may be attracted to the site to feed on food waste that will be processed at the facility, if such waste is accessible to these species. These nuisance species could then adversely affect sensitive wildlife species elsewhere in the South Bay through predation or competition. Nuisance species also include nuisance insects. The VMP would thus minimize this project's contribution to the maintenance of populations of these nuisance species. The VMP will focus on minimizing accessibility of food waste to nuisance species so that these species are not attracted to the facility, and for insects and rodents, on minimizing features that would support breeding by and refugia for these species. Because completely eliminating access to food waste and refugia for nuisance species may not be feasible, the VMP also includes measures to capture and remove individual nuisance mammals and treat areas with nuisance insects. The VMP to be implemented may be the same as that prepared for the adjacent ZMPF or may be a different plan that includes

measures to minimize access of waste materials to wildlife, minimize refugia for nuisance species, and trap nuisance mammals as needed. The VMP will also include a monitoring and adaptive management component to ensure that it is effective.

The operation of this 24-hr facility will result in increases in noise and site activity; compared to existing levels of noise and activity, such increases will be particularly great at night. However, this increase in activity is not expected to result in substantial increases in levels of disturbance of wildlife in surrounding areas, as the area already experiences substantial levels of noise and disturbance from the existing ZRRROL, ZMPF, and WPCP facilities. Additionally, the vegetation to be planted around the perimeter of the Project area will buffer sounds and movement to some extent.

Development of open spaces can hinder wildlife movement between core habitats, resulting in negative effects on gene flow and recruitment into existing populations. However the proposed Project site is surrounded by previously developed areas on three sides, and thus does not provide any habitat connectivity between the marshes to the north and other wildlife habitats likely to sustain substantial wildlife populations. The buildings and grounds will not substantially impede the passage of birds moving through the area during migration, and locally dispersing reptiles, amphibians, and mammals are not expected to disperse through the Project site with any regularity. Thus, it is our opinion that the presence of the new facilities will not substantially hinder wildlife movement.

The presence of the new buildings on the site may result in increased bird mortality due to bird strikes. However, such bird strikes are not expected to be frequent, to affect large numbers of birds, or to affect particularly rare or sensitive species, and the buildings will not otherwise substantially impede the movements of birds or other animals through the site. Although the project site is located in fairly close proximity to sloughs, marshes, and managed ponds that are used heavily by birds, the majority of bird movements among these habitats would not result in birds passing directly through or over the project site. Most movement of these waterbirds would occur between the bay and tidal sloughs, salt ponds (including pond A16 to the northwest and A18 to the north of the site), and New Chicago Marsh; none of the movements of birds between these features would involve birds passing through or over the project site. The movement of gulls between the bay/salt ponds and the WPCP, or of waterfowl and shorebirds between New Chicago Marsh and the WPCP sludge ponds, does involve some movement of birds over the project site. However, birds currently flying to the main WPCP complex have to ascend to a sufficient height to fly over the eucalyptus trees along Los Esteros and Zanker Roads and the buildings of the WPCP, and thus would be flying above the elevation of the new building. It is our opinion that the presence of the new buildings will not substantially impede such movements, or result in substantial increases in mortality due to bird strikes.

## **IMPACTS THAT ARE LESS THAN SIGNIFICANT WITH MITIGATION**

### **Potential Short-term Impacts to Wetlands and Water Quality during Construction Phase**

As mentioned previously, impacts to 0.12 ac of the seasonal wetland ditch are considered less than significant, and no other potential wetlands are proposed to be filled as part of this Project.

However, higher-quality, natural wetlands occur north and west of the Project site, and in some areas along Los Esteros Road. During grading or construction on the main portion of the Project site, or during installation of the water pipe along Los Esteros Road, soil and other materials could be placed, could slide downslope, or could be washed into adjacent wetlands, reducing water quality, covering vegetation, and altering hydrology of those wetlands. Soil disturbance during soil stockpiling and grading can result in mobilization of dust that coats plants (possibly including special-status species) in areas that are not directly impacted, potentially adversely affecting their health. Soil disturbance can also result in soil erosion, transport, and siltation of wetlands that are not intended to be filled by the Project. Contamination of aquatic and wetland habitats can occur as a result of fuel leaks in construction equipment. Due to the high ecological functions and values provided by high-quality, natural wetlands, such indirect impacts are potentially significant. Implementation of the following measures would reduce these potential impacts to wetlands to less than significant levels.

**Mitigation Measure 1A. Incorporate Best Management Practices for Water Quality During Construction.** The Project will incorporate Best Management Practices (BMPs) for water quality to minimize impacts in the surrounding wetland environment. These BMPs will include numerous practices that will be outlined within the Project's Stormwater Pollution Prevention Plan (SWPPP), including measures such as:

1. No debris, soil, silt, sand, bark, slash, sawdust, cement, concrete, washings, petroleum products or other organic or earthen material shall be allowed to enter into or be placed where it may be washed by rainfall or runoff into aquatic or wetland habitat.
2. Standard erosion control and slope stabilization measures will be required for work performed in any area where erosion could lead to sedimentation of a wetland or waterbody. For example, silt fencing will be installed just outside the limits of grading and construction in any areas where such activities will occur upslope from, and within 50 ft of, any wetland, aquatic, or marsh habitat. This silt fencing will be inspected and maintained regularly throughout the duration of construction.
3. Machinery will be refueled at least 50 ft from any aquatic habitat, and a spill prevention and response plan will be developed. All workers will be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur.

**Mitigation Measure 1B. Dust Suppression.** Dust suppression (*e.g.*, using watering trucks) will be implemented during all grading, construction, and soil stockpiling activities that have the potential to mobilize dust to keep dust from being transported to vegetated wetlands nearby. If soil stockpiles are to remain on the site for long periods of time prior to the start of grading, they will be hydroseeded so that vegetation will suppress dust and inhibit erosion.

### **Potential Impacts to Individual Burrowing Owls and Occupied Burrowing Owl Habitat**

No evidence of burrowing owl occupancy was observed on the Project site during reconnaissance-level surveys conducted for this report. However, burrowing owls (listed as a Species of Special Concern by the CDFG) occur in numbers directly south of the site on WPCP lands, and a pair has nested for several years in New Chicago Marsh to the west of the site. The non-native annual grasslands on the site provide suitable foraging, roosting, and breeding habitat

for burrowing owls, and there were a small number of ground squirrels and active squirrel burrows on the site. Therefore, it is possible that burrowing owls could roost or nest in burrows on the site in small numbers.

The impact areas of this Project are currently of limited value to roosting or nesting burrowing owls because of the small number of ground squirrel burrows, and the dense and high herbaceous vegetation characterizing much of the site. Therefore, the Project will not result in a substantial loss of burrowing owl habitat under existing conditions if owls use the site only for foraging but not for roosting or nesting. However, due to the low and declining population levels in the region, any impacts from the Project that result in the injury or mortality of individual owls or active nests, such as excavation or grading, or Project-related disturbance that results in the abandonment of eggs or nestlings, would be considered significant. In addition, any loss of occupied nesting or roosting habitat would be a significant impact. Such impacts could occur even if owls are nesting or roosting in burrows immediately outside the Project site. Implementation of Mitigation Measure 2a, in combination with Measures 2b, 2c, and 2d if necessary, would reduce impacts to burrowing owls to a less-than-significant level.

**Mitigation Measure 2a. Pre-construction Surveys.** Pre-construction surveys for burrowing owls should be conducted in potential habitat in conformance with CDFG protocols, no more than 30 days prior to the start of any ground-disturbing activity such as clearing and grubbing, excavation, or grading, or any similar activity within 250 feet of suitable habitat that could disturb nesting owls. If no burrowing owls are located during these surveys, no additional action would be warranted. However, if burrowing owls are located on or immediately adjacent to impact areas the following mitigation measures will be implemented.

**Mitigation Measure 2b. Buffer Zones.** If burrowing owls are present during the nonbreeding season (generally 1 September to 31 January), a 150-foot buffer zone, within which no new Project-related activity will be permissible, should be maintained around the occupied burrow(s) if feasible, though a reduced buffer is acceptable during the non-breeding season as long as construction avoids direct impacts to the burrow(s) used by the owls. During the breeding season (generally 1 February to 31 August), a 250-foot buffer, within which no new Project-related activity will be permissible, will be maintained between Project activities and occupied burrows. Owls present at burrows on the site after 1 February will be assumed to be nesting on or adjacent to the site unless evidence indicates otherwise. This protected area will remain in effect until 31 August, or based upon monitoring evidence, until the young owls are foraging independently.

**Mitigation Measure 2c. Relocation.** If ground-disturbing activities will directly impact occupied burrows, the owls occupying burrows to be disturbed will be evicted during the non-nesting season. No burrowing owls should be evicted from burrows during the nesting season (1 February through 31 August) unless evidence indicates that nesting is not actively occurring (*e.g.*, because the owls have not yet begun nesting early in the season, or because young have already fledged late in the season).

**Mitigation Measure 2d. Compensatory Habitat Mitigation.** If any roosting or breeding owls must be relocated (*i.e.*, after the nesting season has ended), mitigation of impacts to lost habitat

for relocated owls shall be provided. Given the relatively low quality of foraging habitat on the Project site, appropriate mitigation would consist of providing 6.5 ac of suitable habitat off-site for every pair (or single owl, if unpaired) of owls displaced by the Project. This mitigation may take the form of the purchase of credits in a burrowing owl mitigation bank or the preservation and management of the required habitat acreage off-site. If mitigation is provided via off-site habitat preservation and management, a Burrowing Owl Habitat Management Plan shall be prepared by a qualified biologist and implemented. This plan shall detail the location of the mitigation site, the means of preservation of the site (*i.e.*, via a conservation easement), any enhancement and management measures necessary to ensure that habitat for burrowing owls is maintained in the long term, a monitoring program, and the size of an endowment established for the long-term maintenance of the site.

### **Potential Impacts of Project Lighting on Salt Marsh Harvest Mice and Salt Marsh Vagrant Shrews**

The proposed AD facility will operate 24 hours a day, and as such will require a certain amount of outdoor lighting to be installed in order to ensure safety. Specifically, several high-efficiency, low sodium lights will be installed along roads around the perimeter of the facility. Lighting that increases nighttime illumination in areas of salt marsh and adjacent grassy uplands utilized by salt marsh harvest mice and salt marsh vagrant shrews could potentially result in permanent functional habitat loss, as these species may avoid illuminated areas at night. Additionally, increases in illumination of harvest mouse and vagrant shrew habitat could increase predation on these species by making them more visible to predators. Given the rarity of these species, any loss of use of suitable habitat or increase in predation of these species as a result of an increase in lighting would be a significant impact. Implementation of the following measures would reduce these potential impacts to salt marsh harvest mice, salt marsh vagrant shrews, and their habitat to less than significant levels.

**Mitigation Measure 3a. Orientation of Lights.** Where lights are installed, they will be placed on the perimeter of the facility and directed downward and inward toward the facility roads and buildings, away from the marsh and adjacent grasslands, thus limiting the amount of light spilling into areas outside of the facility.

**Mitigation Measure 3b. Shielding of Lights.** Shielding will be installed on each light to block illumination from shining upward or outward into the marsh and adjacent grasslands.

### **CUMULATIVE IMPACTS**

Impacts to sensitive resources within the Project area will be minimal, as the habitat to be impacted is primarily disturbed ruderal habitat that is regionally abundant. Although the Project will result in the loss of habitat for some species, the majority of these species are also regionally common, and the amount of habitat lost is very small compared to regional availability. Furthermore, for more sensitive species (*e.g.*, those typically associated with wetland or salt marsh habitats), the proposed South Bay Salt Ponds Restoration Project is expected to increase habitat substantially in the coming years. Therefore, the Project is not expected to contribute to significant cumulative adverse impacts to biological resources.

## COMPLIANCE WITH ADDITIONAL LAWS AND REGULATIONS APPLICABLE TO BIOTIC RESOURCES OF THE PROJECT SITE

### REGULATORY OVERVIEW FOR NESTING BIRDS

#### Federal Migratory Bird Treaty Act

The federal Migratory Bird Treaty Act (MBTA; 16 U.S.C., §703, Supp. I, 1989) prohibits killing, possessing, or trading in migratory birds except in accordance with regulations prescribed by the Secretary of the Interior. The trustee agency that addresses issues related to the MBTA is the USFWS. Migratory birds protected under this law include almost all native birds that could occur on the Nine-Par site, with the exception of certain game birds (*e.g.*, turkeys and pheasants; *Federal Register* 70(2):372-377). This act encompasses whole birds, parts of birds, and bird nests and eggs. Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment, a violation of the MBTA. The MBTA protects active nests from destruction and all nests of species protected by the MBTA, whether active or not, cannot be possessed. An active nest under the MBTA as described by the Department of the Interior in their Migratory Bird Permit Memorandum dated 15 April 2003 is one having eggs or young. Nest starts, prior to egg laying, are not protected from destruction.

#### California State Fish and Game Code

Migratory birds are also protected in and by the state of California. The State Fish and Game Code §3513 specifically emulates the MBTA and other sections and subsections of §3500-3516 provide additional protections for birds. Specifically, § 3503 protects birds' nests and eggs from all forms of needless take. All native birds are protected, although game birds may be taken with a hunting license. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "take" by the CDFG. In addition, §3511 lists species that are "fully protected" and cannot be taken or possessed at any time.

In addition, raptors (eagles, hawks, and owls) and their nests are specifically protected in California under Fish and Game Code Section 3503.5. Section 3503.5 states that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto." For all of these regulations, resource agencies typically consider "nests" to be active nests (nests with eggs or chicks). Destruction of inactive nests is generally not considered "take."

#### Project Applicability

Relatively few birds are expected to breed on the Project site, and some of these species (*e.g.*, European starling) are non-native, and are not protected under these laws. However, several species of birds that could nest on the site are protected under the MBTA and by State Fish and Game Code. Project activities have the potential to take nests, eggs, young or individuals of

these protected species. Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to the abandonment of nests. Although this impact is not significant under CEQA due to the local and regional abundance of the species in question and the low magnitude of the potential impact, we recommend that the following measures be implemented to reduce the risk of a violation of the MBTA and the California Fish and Game Code.

### **Compliance Measures**

**Measure 1. Avoid Construction during the Nesting Season.** Grading and other Project activities should be scheduled to avoid the nesting season to the extent possible. The period of 1 February through 31 August encompasses the nesting season for most birds in the Project area.

**Measure 2. Pre-disturbance Surveys.** If construction is to occur during the breeding season, preconstruction surveys should be conducted by a qualified ornithologist no more than 7 days prior to the initiation of construction in any given area. Pre-disturbance surveys should be used to ensure that no nests of species protected by the MBTA or State Code will be disturbed during Project implementation.

**Measure 3. Inhibiting Nesting.** If vegetation or buildings are to be removed by the Project and all necessary approvals have been obtained, potential nesting substrate (*e.g.*, bushes, trees, grass, buildings, burrows) that will be removed by the Project should be removed during the period September through January (outside the nesting season), to help preclude nesting.

**Measure 4. Buffer Zones.** If an active nest is found, a qualified ornithologist should determine the extent of a construction-free buffer zone to be established around the nest.

## LITERATURE CITED

- Arcese, P., M. K. Sogge, A. B. Marr, and M. A. Patten. 2002. Song Sparrow (*Melospiza melodia*). In A Poole, Ed. The Birds of North America Online. Ithaca: Cornell Lab of Ornithology. <http://bna.birds.cornell.edu/bna/species/704>. Accessed 18 December 2008
- Baron, T., and J. Takegawa. 1994. California Clapper Rail *Rallus longirostris obsoletus*. In C. G. Thelander, D. C. Pearson, and G. E. Olson, Eds. Life on the Edge: A guide to California's endangered natural resources. Pp 158-159.
- Cade, T. J., and C. P. Woods. 1997. Changes in distribution and abundance of the loggerhead shrike. *Conserv. Biol.* 11(1): 21-31
- [CDFG] California Department of Fish and Game. 1994. A Field Guide to Lake and Streambed Alteration Agreements, Sections 1600-1607. Environmental Services Division.
- [CDFG] California Department of Fish and Game. 1995. Staff report on Burrowing Owl mitigation. 9pp.
- [CNPS] California Native Plant Society. 2010. Inventory of Rare and Endangered Plants (online edition, v7-10b). California Native Plant Society. Sacramento, CA. Accessed on Mon, Apr. 26, 2010 from <http://www.cnps.org/inventory>
- [CNDDDB] California Natural Diversity Data Base. 2010. Rarefind. California Department of Fish and Game.
- Chan, Y., and H. Spautz. 2008. Alameda Song Sparrow (*Melospiza melodia pusillula*). In Shuford, W. D. and T. Gardali, Eds. California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California; and California Department of Fish and Game, Sacramento.
- Colwell, M. A., C. B. Millett, J. J. Meyer, J. N. Hall, S. J. Hurley, S. E. McAllister, A. N. Transou, and R. R. LeValley. 2005. Snowy plover reproductive success in beach and river habitats. *J. Field Ornithol.* 76(4): 373-382
- Conway, C. J., V. Garcia, M. D. Smith, L. A. Ellis, and J. L. Whitney. 2006. Comparative demography of burrowing owls in agricultural and urban landscapes in southeastern Washington. *J. Field Ornithol.* 77(3): 280-290
- Coulombe, H. N. 1971. Behavior and Population Ecology of the Burrowing Owl, *Speotyto cunicularia*, in the Imperial Valley of California. *Condor* 73:162-176.
- Dobkin, D., and S. Granholm. 1990. Savannah Sparrow *Passerculus sandwichensis*. In Zeiner, D.C., W.F.Laudenslayer, Jr., K.E. Mayer, and M. White, Eds. California's Wildlife. Vol. I-III. California Depart. of Fish and Game, Sacramento, California.

- Eddleman, W. R., and C. J. Conway. 1998. Clapper Rail (*Rallus longirostrus*). In A. Poole, ed. The Birds of North America Online. Ithaca: Cornell Lab of Ornithology. <http://bna.birds.cornell.edu/bna/species/340>. Accessed 17 December 2008
- Environmental Laboratory. 1987. Corps of Engineers Wetland Delineation Manual. Technical Report Y-87-1. Prepared for the U.S. Army Corps of Engineers.
- Findley, J. S. 1955. Speciation of the wandering shrew. Occasional Papers of the Museum of Natural History 9:1-68.
- Fitton, S. D. 2008. Bryant's Savannah Sparrow (*Passerculus sandwichensis alaudinus*). In Shuford, W. D. and T. Gardali, Eds. California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California; and California Department of Fish and Game, Sacramento.
- Foin, T. C., E. J. Garcia, R. E. Gill, S. D. Culberson, and J. N. Collins. 1997. Recovery strategies for the California clapper rail (*Rallus longirostrus obsoletus*) in the heavily urbanized San Francisco estuarine ecosystem. *Landsc. Urb. Plann.* 38: 229-243
- Gardali, T., and J. Evens. 2008. San Francisco Common Yellowthroat (*Geothlypis trichas sinuosa*). In Shuford, W. D. and T. Gardali, Eds. California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California; and California Department of Fish and Game, Sacramento.
- Gervais, J. A., D. K. Rosenberg and L. A. Comrack. 2008. Burrowing Owl *Athene cunicularia*. In Shuford, W. D. and T. Gardali, Eds. California Bird Species of Special Concern: A Ranked Assessment of Species, Subspecies, and Distinct Populations of Birds of Immediate Conservation Concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California; and California Department of Fish and Game, Sacramento.
- Guzy, M. J., and G. Ritchison. 1999. Common Yellowthroat (*Geothlypis trichas*). In A. Poole, Ed. The Birds of North America Online. Ithaca: Cornell Lab of Ornithology. <http://bna.birds.cornell.edu/bna/species/448>. Accessed 31 December 2008
- Haug, E. A., and L. W. Oliphant. 1990. Movements, Activity Patterns and Habitat Use of Burrowing Owls in Saskatchewan. *Journal of Wildlife Management* 54:27-35.
- Haug, E. A., B. A. Millsap, and M. S. Martell. 1993. Burrowing Owl (*Athene cunicularia*). In A. Poole, Ed. The Birds of North America Online. Ithaca: Cornell Lab of Ornithology. <http://bna.birds.cornell.edu/bna/species/061>. Accessed 7 January 2009

- H. T. Harvey & Associates. 1990. Salt marsh harvest mouse trapping at Owens Corning Landfill, Alviso, California. Prepared for Thomas Reid Associates, Palo Alto, CA.
- H. T. Harvey & Associates. 2004. Zanker Road Resource Recovery Operations Proposed Expansion Operations Biotic Impacts Analysis. Prepared for David Powers and Associates, San José, CA.
- H. T. Harvey & Associates. 2007. Zanker Material Processing Facility Improvements Biotic Assessment. Prepared for David J. Powers and Associates, San José, CA.
- H. T. Harvey & Associates. 2008. Zanker Road Resource Recovery Operation and Landfill Planned Development Rezoning Project, Biological Constraints Update. Prepared for David J. Powers and Associates, San José, CA.
- Harvey, T. 1990. Clapper Rail *Rallus longirostrus*. Pp 174-175 in Zeiner, D.C., W.F.Laudenslayer, Jr., K.E. Mayer, and M. White, eds. 1988-1990. California's Wildlife. Vol. III. California Depart. of Fish and Game, Sacramento, California.
- Hickman, J. C. 1993. The Jepson Manual: Higher Plants of California. University of California Press.
- Holland, R. F. 1986. Preliminary Description of the Terrestrial Natural Communities of California. California Department of Fish & Game.
- Humple, D. 2008. Loggerhead Shrike (*Lanius ludovicianus*). In Shuford, W. D. and T. Gardali, Eds. California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California; and California Department of Fish and Game, Sacramento.
- Menges, T. 1998. Common Yellowthroat (*Geothlypis trichas*). In The Riparian Bird Conservation Plan: a strategy for reversing the decline of riparian-associated birds in California. California Partners in Flight. [http://www.prbo.org/calpif/htmldocs/riparian\\_v-2.html](http://www.prbo.org/calpif/htmldocs/riparian_v-2.html)
- Neuman, K. K, G. W. Page, L. E. Stenzel, J. C. Warriner, and S. Warriner. 2004. Effect of mammalian predator management on Snowy Plover breeding success. Waterbirds 27(3):257-263.
- Nordby, J. C., A. N. Cohen, and S. R. Beissinger. 2008. Effects of a habitat-altering invader on nesting sparrows: an ecological trap? Biol. Invas. Published online 25 April 2008
- [NRCS] Natural Resource Conservation Service. 2002. WETS Station Data for Palo Alto, CA6646. Accessed from <http://www.wcc.nrcs.usda.gov/ftpref/support/climate/wetlands/ca/06085.txt> on 26 April 2010.

- Nur, N., S. Zack, J. Evans, and T. Gardali. 1997. Tidal marsh birds of the San Francisco Bay region: status, distribution, and conservation of five category 2 taxa. Final draft report to the United States Geological Survey. Petaluma: PRBO Conservation Science. 66 pp
- Page, G. W., J. S. Warriner, J. C. Warriner and P. W. Paton. 1995. Snowy Plover (*Charadrius alexandrinus*). In A. Poole, Ed. The Birds of North America Online. Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu/bna/species/154>
- Plumpton, D. L., and R. S. Lutz. 1993. Nesting Habitat Use by Burrowing Owls in Colorado. *Journal of Raptor Research* 27:175-179.
- Rosenberg, D. K., L. A. Trulio, D. Catlin, D. Chromczack, J. A. Gervais, N. Ronan and K. A. Haley. 2007. The Ecology of the Burrowing Owl in California. Unpubl. report to Bureau of Land Management.
- Rosier, J. R., N. A. Ronan, and D. K. Rosenberg. 2006. Post-breeding dispersal of burrowing owls in an extensive California grassland. *Am. Midl. Nat.* 155: 162-167
- Rottenborn, S. 2007. Savannah Sparrow (*Passerculus sandwichensis*). In Bousman, W. G. , Ed. Breeding Bird Atlas of Santa Clara County, California. Santa Clara Audubon Society.
- Ruhlen, T. D., S. Abbott, L. E. Stenzel, and G. W. Page. 2003. Evidence that human disturbance reduces snowy plover chick survival. *J. Field Ornithol.* 74(3): 300-304
- San José Environmental Services Department. 2004. Nine-Par Topographic Map (1-foot LIDAR Elevation Contours).
- Sawyer, J. O., and T. Keeler-Wolf. 1995. A Manual of California Vegetation. California Native Plant Society.
- Sawyer, J. O., T. Keeler-Wolf, and J. M. Evens. 2008. A Manual of California Vegetation, 2<sup>nd</sup> Edition. California Native Plant Society and California Department of Fish and Game, Sacramento, CA.
- Schwarzbach, S. E., J. D. Albertson, and C. M. Thomas. 2006. Effects of predation, flooding, and contamination on reproductive success of California clapper rails (*Rallus longirostris obsoletus*) in San Francisco Bay. *Auk* 123(1): 45-60
- Shellhammer, H. S. 2000a. Salt marsh harvest mouse, *Reithrodontomys raviventris*. In P. R. Olofsen, Ed. Goals Project. Baylands Ecosystem Species and Community Profiles: life histories and environmental requirements of key plants, fish, and wildlife. Prepared by the San Francisco Bay Area Wetlands Ecosystems Goals Project. San Francisco Bay Regional Water Quality Control Board, Oakland, CA. Pp. 219-228.
- Shellhammer H. S. 2000b. Salt marsh wandering shrew, *Sorex vagrans halicoetes*. In P. R. Olofsen, Ed. Goals Project. Baylands Ecosystem Species and Community Profiles: Life Histories and Environmental Requirements of Key Plants, Fish and Wildlife. Oakland,

CA: San Francisco Bay Area Wetlands Ecosystem Goals Project. San Francisco Bay Regional Water Quality Control Board. p 231-233.

[USGS] U. S. Geologic Survey. 1973. Milpitas 7.5 minute Quadrangle.

Western Ecological Services Company (WESCO). 1986. A review of the population status of the salt marsh wandering shrew, *Sorex vagrans halicoetes*.

Wheelwright, N. T., and J. D. Rising. 2008. Savannah Sparrow (*Passerculus sandwichensis*). In A. Poole, Ed. The Birds of North America Online. Ithaca: Cornell Lab of Ornithology; retrieved from the Birds of North America Online, <http://bna.birds.cornell.edu/bna/species/045>

WorleyParsons Group, Inc. 2010. Stormwater control plan report for the anaerobic digestion facility Phase I-III. Prepared for the Zero Waste Energy Development Company.

Yosef, R. 1996. Loggerhead Shrike (*Lanius ludovicianus*). In A. Poole, Ed. The Birds of North America Online. Ithaca: Cornell Lab of Ornithology; retrieved from the Birds of North America Online, <http://bna.birds.cornell.edu/bna/species/231>

**APPENDIX A.**  
**Plant Species Observed on the Project Site**

**Appendix A. Plant Species Identified on the Zero Waste Anaerobic Digestion Facility Project Site.**

<b>FAMILY NAME</b>	<b>SCIENTIFIC NAME</b>	<b>COMMON NAME</b>
<b>Aizoaceae</b>	<i>Carpobrotus sp.</i>	iceplant
<b>Apiaceae</b>	<i>Foeniculum vulgare</i>	fennel
<b>Asteraceae</b>	<i>Artemisia californica</i>	California sagebrush
	<i>Baccharis pilularis</i>	coyotebrush
	<i>Baccharis salicifolia</i>	mulefat
	<i>Carduus pycnocephalus</i>	Italian thistle
	<i>Centaurea solstitialis</i>	yellow star-thistle
	<i>Cynara cardunculus</i>	artichoke thistle
	<i>Dittrichia graveolens</i>	stinkwort
	<i>Picris echioides</i>	bristly ox-tongue
	<i>Tragopogon sp.</i>	salsify
	<b>Brassicaceae</b>	<i>Brassica nigra</i>
<i>Hirschfeldia incana</i>		short pod mustard
<i>Lepidium latifolium</i>		broadleaf peppergrass
<i>Raphanus sativus</i>		wild radish
<b>Chenopodiaceae</b>	<i>Beta vulgaris</i>	beet
	<i>Salsola tragus</i>	Russian thistle
<b>Convolvulaceae</b>	<i>Convolvulus arvensis</i>	field bindweed
<b>Fabaceae</b>	<i>Spartium junceum</i>	Spanish broom
<b>Frankeniaceae</b>	<i>Frankenia salina</i>	alkali heath
<b>Geraniaceae</b>	<i>Erodium botrys</i>	broad leaf filaree
	<i>Erodium cicutarium</i>	red-stemmed filaree
<b>Juglandaceae</b>	<i>Juglans hindsii</i>	black walnut
<b>Malvaceae</b>	<i>Lavatera cretica</i>	Cornish mallow
<b>Myoporaceae</b>	<i>Myoporum laetum</i>	lollipop tree
<b>Myrtaceae</b>	<i>Eucalyptus globulus</i>	blue gum
<b>Onagraceae</b>	<i>Epilobium ciliatum</i>	fringed willowherb
<b>Oxalidaceae</b>	<i>Oxalis pes-caprae</i>	Bermuda buttercup
<b>Plantaginaceae</b>	<i>Plantago lanceolata</i>	English plantain
<b>Poaceae</b>	<i>Avena barbata</i>	slender wild oats
	<i>Avena fatua</i>	wild oats
	<i>Bromus diandrus</i>	ripgut brome
	<i>Cortaderia selloana</i>	pampas grass
	<i>Cynodon dactylon</i>	Bermudagrass
	<i>Deschampsia caespitosa</i>	tufted hairgrass
	<i>Distichlis spicata</i>	saltgrass
	<i>Hordeum marinum ssp. gussoneanum</i>	Mediterranean barley
	<i>Lolium multiflorum</i>	Italian ryegrass

**Appendix A. Plant Species Identified on the Zero Waste Anaerobic Digestion Facility Project Site.**

<b>FAMILY NAME</b>	<b>SCIENTIFIC NAME</b>	<b>COMMON NAME</b>
	<i>Phalaris aquatica</i>	Harding grass
<b>Polygonaceae</b>	<i>Rumex crispus</i>	curly dock
<b>Salicaceae</b>	<i>Populus fremontii</i>	Fremont's cottonwood
<b>Solanaceae</b>	<i>Nicotiana glauca</i>	tree tobacco

The species are arranged alphabetically by family name for all vascular plants encountered during the plant survey. Plants are also listed alphabetically within each family. Species nomenclature is from Hickman (1993) except where different nomenclature has been adopted by Reed (1988).

**APPENDIX B.**  
**Special-Status Plant Species Considered but Rejected**  
**for Occurrence at the Project Site**

**Appendix B. Special-Status Plant Species Considered but Rejected for Occurrence at the Project Site.**

Scientific Name	Common Name	Lack of Serpentine Soils	Lack of Other Edaphic Requirements	Habitat not Present On-site	Believed to Be Extirpated in Area	Out of Elevation Range	Highly Degraded Site Conditions
<i>Acanthomintha lanceolata</i>	Santa Clara thorn-mint		X		X	X	
<i>Androsace elongata ssp. acuta</i>	California androsace				X	X	
<i>Arctostaphylos andersonii</i>	Anderson's manzanita			X	X	X	
<i>Azolla mexicana</i>	Mexican mosquito fern			X	X		
<i>Balsamorhiza macrolepis var. macrolepis</i>	big-scale balsamroot	X			X	X	
<i>Calandrinia breweri</i>	Brewer's calandrinia		X				
<i>California macrophylla</i>	round-leaved filaree		X		X	X	
<i>Calochortus umbellatus</i>	Oakland star-tulip	X			X	X	
<i>Calystegia collina ssp. venusta</i>	South Coast Range morning-glory	X	X		X	X	
<i>Campanula exigua</i>	chaparral harebell	X	X	X	X	X	
<i>Cirsium fontinale var. campylon</i>	Mt. Hamilton fountain thistle	X		X	X	X	
<i>Clarkia breweri</i>	Brewer's clarkia	X			X	X	
<i>Clarkia concinna ssp. automixa</i>	Santa Clara red ribbons			X	X	X	
<i>Collinsia multicolor</i>	San Francisco collinsia	X			X	X	
<i>Cypripedium fasciculatum</i>	clustered lady's-slipper	X		X	X	X	
<i>Dirca occidentalis</i>	western leatherwood			X	X	X	
<i>Dudleya setchellii</i>	Santa Clara Valley dudleya	X	X		X	X	
<i>Eriogonum argillosum</i>	clay buckwheat	X		X	X	X	
<i>Eriogonum nudum var. decurrens</i>	Ben Lomond buckwheat		X	X	X	X	
<i>Eriogonum umbellatum var. bahiiforme</i>	bay buckwheat	X	X	X	X	X	
<i>Eriophyllum jepsonii</i>	Jepson's woolly sunflower	X			X	X	
<i>Erysimum franciscanum</i>	San Francisco wallflower	X	X				
<i>Fritillaria agrestis</i>	stinkbells	X					X
<i>Fritillaria liliacea</i>	fragrant fritillary	X					X
<i>Galium andrewsii ssp. gatense</i>	phlox-leaf serpentine bedstraw	X	X	X		X	X
<i>Helianthella castanea</i>	Diablo helianthella					X	X
<i>Helianthus exilis</i>	serpentine sunflower	X		X	X	X	X
<i>Hoita strobilina</i>	Loma Prieta hoita	X		X	X	X	X
<i>Iris longipetala</i>	coast iris			X			X
<i>Isocoma menziesii var. diabolica</i>	Satan's goldenbush			X			X
<i>Leptosiphon acicularis</i>	bristly leptosiphon					X	X
<i>Leptosiphon ambiguus</i>	serpentine leptosiphon	X				X	X

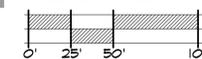
**Appendix B. Special-Status Plant Species Considered but Rejected for Occurrence at the Project Site.**

<b>Scientific Name</b>	<b>Common Name</b>	<b>Lack of Serpentine Soils</b>	<b>Lack of Other Edaphic Requirements</b>	<b>Habitat not Present On-site</b>	<b>Believed to Be Extirpated in Area</b>	<b>Out of Elevation Range</b>	<b>Highly Degraded Site Conditions</b>
<i>Leptosiphon grandiflorus</i>	large-flowered leptosiphon		X				X
<i>Lessingia hololeuca</i>	woolly-headed lessingia	X				X	X
<i>Lessingia tenuis</i>	spring lessingia			X		X	X
<i>Malacothamnus arcuatus</i>	arcuate bush-mallow			X		X	X
<i>Malacothrix phaeocarpa</i>	dusky-fruited malacothrix			X		X	
<i>Micropus amphibolus</i>	Mt. Diablo cottonweed		X			X	X
<i>Monardella antonina ssp. antonina</i>	San Antonio Hills monardella			X		X	X
<i>Monardella villosa ssp. globosa</i>	robust monardella					X	X
<i>Navarretia cotulifolia</i>	cotula navarretia		X	X			X
<i>Perideridia gairdneri ssp. gairdneri</i>	Gairdner's yampah			X			X
<i>Piperia leptopetala</i>	narrow-petaled rein orchid			X		X	X
<i>Piperia michaelii</i>	Michael's rein orchid						X
<i>Plagiobothrys chorisianus var. hickmanii</i>	Hickman's popcorn-flower			X		X	X
<i>Plagiobothrys myosotoides</i>	forget-me-not popcorn-flower			X		X	X
<i>Potamogeton filiformis</i>	slender-leaved pondweed			X		X	
<i>Psilocarphus brevissimus var. multiflorus</i>	Delta woolly-marbles			X			X
<i>Senecio aphanactis</i>	chaparral ragwort					X	X
<i>Sidalcea malachroides</i>	maple-leaved checkerbloom				X		
<i>Streptanthus albidus ssp. albidus</i>	Metcalf Canyon jewel-flower	X				X	X
<i>Streptanthus albidus ssp. peramoenus</i>	most beautiful jewel-flower	X				X	X
<i>Tropidocarpum capparideum</i>	caper-fruited tropidocarpum			X			X

MATCHLINE, SEE AREA 2 - SHEET L1.2

PRELIMINARY - NOT FOR CONSTRUCTION

SCALE: 1" = 50'-0"



**TREE LEGEND**

SYMBOL	DESCRIPTION
	EXISTING TREE TO REMAIN
	EXISTING TREE TO BE REMOVED

- NOTES:**
- ALL TREES SHOWN HAVE BEEN SURVEYED BY A LICENCED SURVEYOR. ALL TREE SPECIES AND DIAMETERS HAVE BEEN IDENTIFIED AND MEASURED BY A LICENCED LANDSCAPE ARCHITECT.
  - ALL TREE DIAMETERS HAVE BEEN MEASURED 24" ABOVE GRADE.
  - SEE SHEET L1.2 FOR LEGEND AND NOTES.

RTY LINE

MATCHLINE, SEE AREA 3 - SHEET L1.2

AREA 1

DATE	REVISION
1-20-11	CITY COMMENTS

DEVELOPER:  
**ZERO WASTE ENERGY DEVELOPMENT COMPANY**

PROJECT TITLE:  
**ANAEROBIC DIGESTION FACILITY  
 SAN JOSE, CA  
 PHASE I - III**

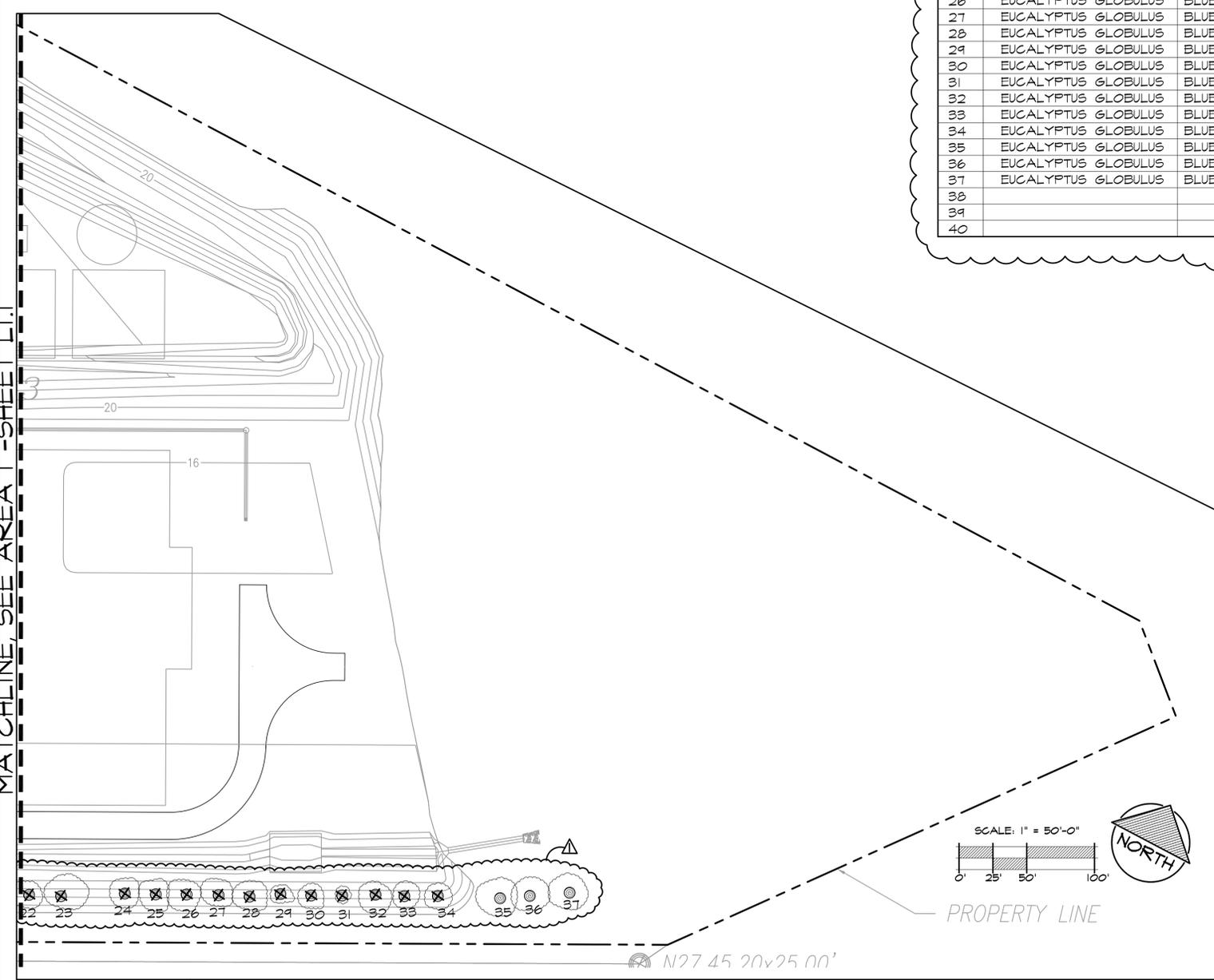
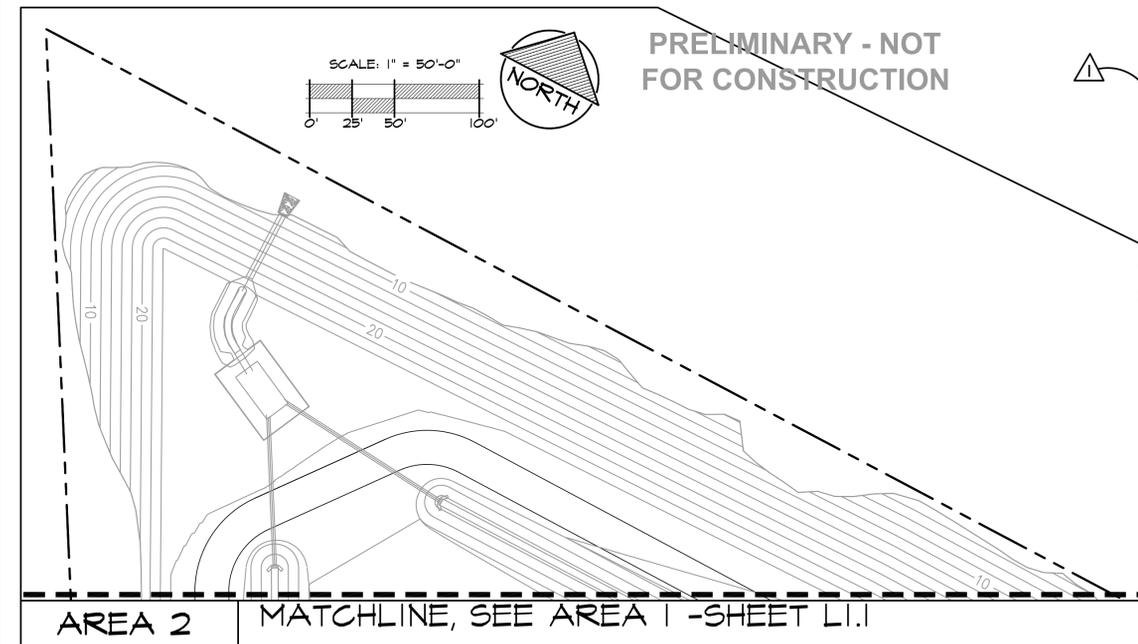
DATE: 03.15.10  
 JOB NUMBER: 0915  
 DRAWN: SF CHECKED: SF  
 SCALE: AS NOTED

SHEET TITLE:  
**TREE INVENTORY PLAN - AREA 1**

SHEET NUMBER:  
**L1.1**

**LANDARC** Associates, Inc.  
 1922 The Alameda - Suite 218  
 San Jose, CA 95126  
 RLA # 3980  
 www.landarcassociates.com





### TREE INVENTORY LEGEND

TREE #	TREE SPECIES - BOTANICAL NAME	TREE SPECIES - COMMON NAME	SIZE CIR.	STD. OR MULT. TRUNK	ORDINANCE SIZE TREES	COND-ITION OF TREE	TREE TO BE REM-OVED	TREE TO BE RET-AINED
1	EUCALYPTUS GLOBULUS	BLUE GUM EUCALYPTUS	163"	MULTI	YES	GOOD	YES	NO
2	EUCALYPTUS GLOBULUS	BLUE GUM EUCALYPTUS	314"	MULTI	YES	GOOD	YES	NO
3	EUCALYPTUS GLOBULUS	BLUE GUM EUCALYPTUS	170"	MULTI	YES	GOOD	YES	NO
4	EUCALYPTUS GLOBULUS	BLUE GUM EUCALYPTUS	150"	MULTI	YES	POOR	YES	NO
5	EUCALYPTUS GLOBULUS	BLUE GUM EUCALYPTUS	127"	STD	YES	GOOD	YES	NO
6	EUCALYPTUS GLOBULUS	BLUE GUM EUCALYPTUS	126"	MULTI	YES	GOOD	YES	NO
7	EUCALYPTUS GLOBULUS	BLUE GUM EUCALYPTUS	150"	STD	YES	GOOD	YES	NO
8	EUCALYPTUS GLOBULUS	BLUE GUM EUCALYPTUS	245"	MULTI	YES	GOOD	YES	NO
9	EUCALYPTUS GLOBULUS	BLUE GUM EUCALYPTUS	78"	MULTI	YES	POOR	YES	NO
10	EUCALYPTUS GLOBULUS	BLUE GUM EUCALYPTUS	311"	MULTI	YES	GOOD	YES	NO
11	EUCALYPTUS GLOBULUS	BLUE GUM EUCALYPTUS	113"	MULTI	YES	GOOD	YES	NO
12	EUCALYPTUS GLOBULUS	BLUE GUM EUCALYPTUS	100"	MULTI	YES	GOOD	YES	NO
13	EUCALYPTUS GLOBULUS	BLUE GUM EUCALYPTUS	238"	MULTI	YES	GOOD	YES	NO
14	EUCALYPTUS GLOBULUS	BLUE GUM EUCALYPTUS	251"	MULTI	YES	GOOD	YES	NO
15	EUCALYPTUS GLOBULUS	BLUE GUM EUCALYPTUS	201"	MULTI	YES	POOR	YES	NO
16	EUCALYPTUS GLOBULUS	BLUE GUM EUCALYPTUS	188"	MULTI	YES	GOOD	YES	NO
17	EUCALYPTUS GLOBULUS	BLUE GUM EUCALYPTUS	301"	MULTI	YES	GOOD	YES	NO
18	EUCALYPTUS GLOBULUS	BLUE GUM EUCALYPTUS	104"	STD	YES	GOOD	YES	NO
19	EUCALYPTUS GLOBULUS	BLUE GUM EUCALYPTUS	122"	STD	YES	GOOD	YES	NO
20	EUCALYPTUS GLOBULUS	BLUE GUM EUCALYPTUS	188"	MULTI	YES	GOOD	YES	NO
21	EUCALYPTUS GLOBULUS	BLUE GUM EUCALYPTUS	119"	MULTI	YES	GOOD	YES	NO
22	EUCALYPTUS GLOBULUS	BLUE GUM EUCALYPTUS	94"	STD	YES	GOOD	YES	NO
23	EUCALYPTUS GLOBULUS	BLUE GUM EUCALYPTUS	147"	MULTI	YES	GOOD	YES	NO
24	EUCALYPTUS GLOBULUS	BLUE GUM EUCALYPTUS	150"	MULTI	YES	GOOD	YES	NO
25	EUCALYPTUS GLOBULUS	BLUE GUM EUCALYPTUS	201"	MULTI	YES	GOOD	YES	NO
26	EUCALYPTUS GLOBULUS	BLUE GUM EUCALYPTUS	245"	MULTI	YES	GOOD	YES	NO
27	EUCALYPTUS GLOBULUS	BLUE GUM EUCALYPTUS	75"	STD	YES	POOR	YES	NO
28	EUCALYPTUS GLOBULUS	BLUE GUM EUCALYPTUS	245"	MULTI	YES	GOOD	YES	NO
29	EUCALYPTUS GLOBULUS	BLUE GUM EUCALYPTUS	97"	MULTI	YES	POOR	YES	NO
30	EUCALYPTUS GLOBULUS	BLUE GUM EUCALYPTUS	75"	STD	YES	GOOD	YES	NO
31	EUCALYPTUS GLOBULUS	BLUE GUM EUCALYPTUS	147"	MULTI	YES	GOOD	YES	NO
32	EUCALYPTUS GLOBULUS	BLUE GUM EUCALYPTUS	226"	MULTI	YES	GOOD	YES	NO
33	EUCALYPTUS GLOBULUS	BLUE GUM EUCALYPTUS	81"	STD	YES	GOOD	YES	NO
34	EUCALYPTUS GLOBULUS	BLUE GUM EUCALYPTUS	172"	MULTI	YES	GOOD	YES	NO
35	EUCALYPTUS GLOBULUS	BLUE GUM EUCALYPTUS	345"	MULTI	YES	GOOD	NO	YES
36	EUCALYPTUS GLOBULUS	BLUE GUM EUCALYPTUS	311"	MULTI	YES	GOOD	NO	YES
37	EUCALYPTUS GLOBULUS	BLUE GUM EUCALYPTUS	276"	MULTI	YES	GOOD	NO	YES
38								
39								
40								

### TREE MITIGATION CALCULATIONS

EXISTING TREES TO BE REMOVED	QUANTITY
NON-NATIVE LESS THAN 12"	0
NATIVE LESS THAN 12"	0
NON-NATIVE 12"-18"	0
NON-NATIVE GREATER THAN 18"	37
<b>REQUIRED REPLACEMENT TREES</b>	<b>QUANTITY</b>
15 GALLON	0
24" BOX	136
<b>PROVIDED TREES</b>	<b>QUANTITY</b>
15 GALLON	TBD
24" BOX	150

TBD = TO BE DETERMINED

### CITY PROTECTION NOTES FOR TREES TO BE RETAINED:

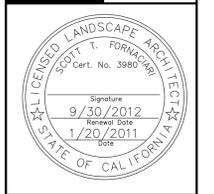
- TO MITIGATE POTENTIAL DAMAGE TO RETAINED TREES, TREES SHALL BE SAFEGUARDED DURING CONSTRUCTION THROUGH IMPLEMENTATION OF THE FOLLOWING MEASURES (SJM C 13.32.130, ORDS. 21362, 26545):
- PRIOR TO THE ISSUANCE OF ANY APPROVAL OR PERMIT, ALL TREES ON THE SITE SHALL BE INVENTORIED BY A CERTIFIED ARBORIST OR LICENCED LANDSCAPE ARCHITECT AS TO SIZE, SPECIES AND LOCATION ON THE LOT AND THE INVENTORY SHALL BE SUBMITTED ON A TOPOGRAPHICAL MAP TO THE DIRECTOR.
- DAMAGE TO ANY TREE DURING CONSTRUCTION SHALL BE REPORTED TO THE CITY'S ENVIRONMENTAL PRINCIPAL PLANNER, AND THE CONTRACTOR OR OWNER SHALL TREAT THE TREE FOR DAMAGE IN THE MANNER SPECIFIED BY THE ENVIRONMENTAL PRINCIPAL PLANNER.
- NO CONSTRUCTION EQUIPMENT, VEHICLES OR MATERIALS SHALL BE STORED, PARKED OR STANDING WITHIN THE TREE DRIPLINE.
- DRAINS SHALL BE INSTALLED ACCORDING TO CITY SPECIFICATIONS SO AS TO AVOID HARM TO TREES DUE TO EXCESS WATERING.
- WIRES, SIGNS AND OTHER SIMILAR ITEMS SHALL NOT BE ATTACHED TO TREES.
- CUTTING AND FILLING AROUND THE BASE OF TREES SHALL BE DONE ONLY AFTER CONSULTATION WITH THE CITY ARBORIST.
- NO PAINT THINNER, PAINT, PLASTER OR OTHER LIQUID OR SOLID EXCESS OR WASTE CONSTRUCTION MATERIALS OR WASTEWATER SHALL BE DUMPED ON THE GROUND OR INTO ANY GRATE BETWEEN THE DRIPLINE AND THE BASE OF THE TREE OR UPHILL FROM ANY TREE WHERE CERTAIN SUBSTANCES MIGHT REACH THE ROOTS THROUGH A LEACHING PROCESS.
- BARRICADES SHALL BE CONSTRUCTED AROUND THE TRUNKS OF TREES AS SPECIFIED BY A QUALIFIED ARBORIST SO AS TO PREVENT INJURY TO TREES MAKING THEM SUSCEPTIBLE TO DISEASE CAUSING ORGANISMS.
- WHEREVER CUTS ARE MADE IN THE GROUND NEAR THE ROOTS OF TREES, APPROPRIATE MEASURES SHALL BE TAKEN TO PREVENT EXPOSED SOIL FROM DRYING OUT AND CAUSING DAMAGE TO TREE ROOTS.

### TREE LEGEND

- SYMBOL DESCRIPTION**
- EXISTING TREE TO REMAIN
  - ⊗ EXISTING TREE TO BE REMOVED

**NOTE:**

- ALL TREES HAVE SHOWN HAVE BEEN SURVEYED BY A LICENCED SURVEYOR. ALL TREE SPECIES AND DIAMETERS HAVE BEEN IDENTIFIED AND MEASURED BY A LICENCED LANDSCAPE ARCHITECT.
- ALL TREE DIAMETERS HAVE BEEN MEASURED 24" ABOVE GRADE.



DATE	REVISION
1-20-11	CITY COMMENTS

DEVELOPER:  
**ZERO WASTE ENERGY DEVELOPMENT COMPANY**

PROJECT TITLE:  
**ANAEROBIC DIGESTION FACILITY  
 SAN JOSE, CA  
 PHASE I - III**

DATE: 03.15.10  
 JOB NUMBER: 0915  
 DRAWN: SF CHECKED: SF  
 SCALE: AS NOTED

SHEET TITLE:  
**TREE INVENTORY PLAN -  
 AREA 2 & AREA 3**

SHEET NUMBER:  
**L1.2**

**Zero Waste Energy Development Co. Anaerobic Digestion Facility, San Jose Ca**  
**Existing On-Site Trees** **1/20/2011**

**Tree #1**



**Tree #3**



**Tree #2**



**Tree #4**



**Zero Waste Energy Development Co. Anaerobic Digestion Facility, San Jose Ca**

**Tree #5**



**Tree #7**



**Tree #6**



**Tree #8**



**Zero Waste Energy Development Co. Anaerobic Digestion Facility, San Jose Ca**

**Tree # 9**



**Tree # 11**



**Tree # 10**



**Tree # 12**



**Zero Waste Energy Development Co. Anaerobic Digestion Facility, San Jose Ca**

**Tree # 13**



**Tree # 15**



**Tree # 14**



**Tree # 16**



**Zero Waste Energy Development Co. Anaerobic Digestion Facility, San Jose Ca**

**Tree #17**



**Tree # 19**



**Tree # 18**



**Tree # 20**



**Zero Waste Energy Development Co. Anaerobic Digestion Facility, San Jose Ca**

**Tree # 21**



**Tree # 23**



**Tree # 22**



**Tree # 24**



**Zero Waste Energy Development Co. Anaerobic Digestion Facility, San Jose Ca**

**Tree # 25**



**Tree # 27**



**Tree # 26**



**Tree # 28**



**Zero Waste Energy Development Co. Anaerobic Digestion Facility, San Jose Ca**

**Tree # 29**



**Tree # 31**



**Tree # 30**



**Tree # 32**



**Zero Waste Energy Development Co. Anaerobic Digestion Facility, San Jose Ca**

**Tree # 33**



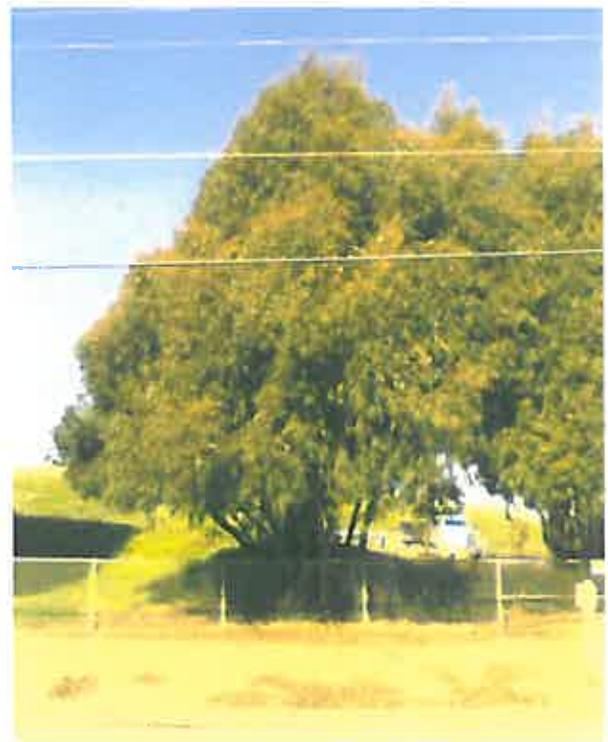
**Tree # 35**



**Tree # 34**



**Tree # 36**



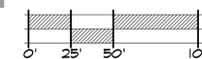
**Zero Waste Energy Development Co. Anaerobic Digestion Facility, San Jose Ca**  
**Tree # 37**



MATCHLINE, SEE AREA 2 - SHEET L3.2

PRELIMINARY - NOT FOR CONSTRUCTION

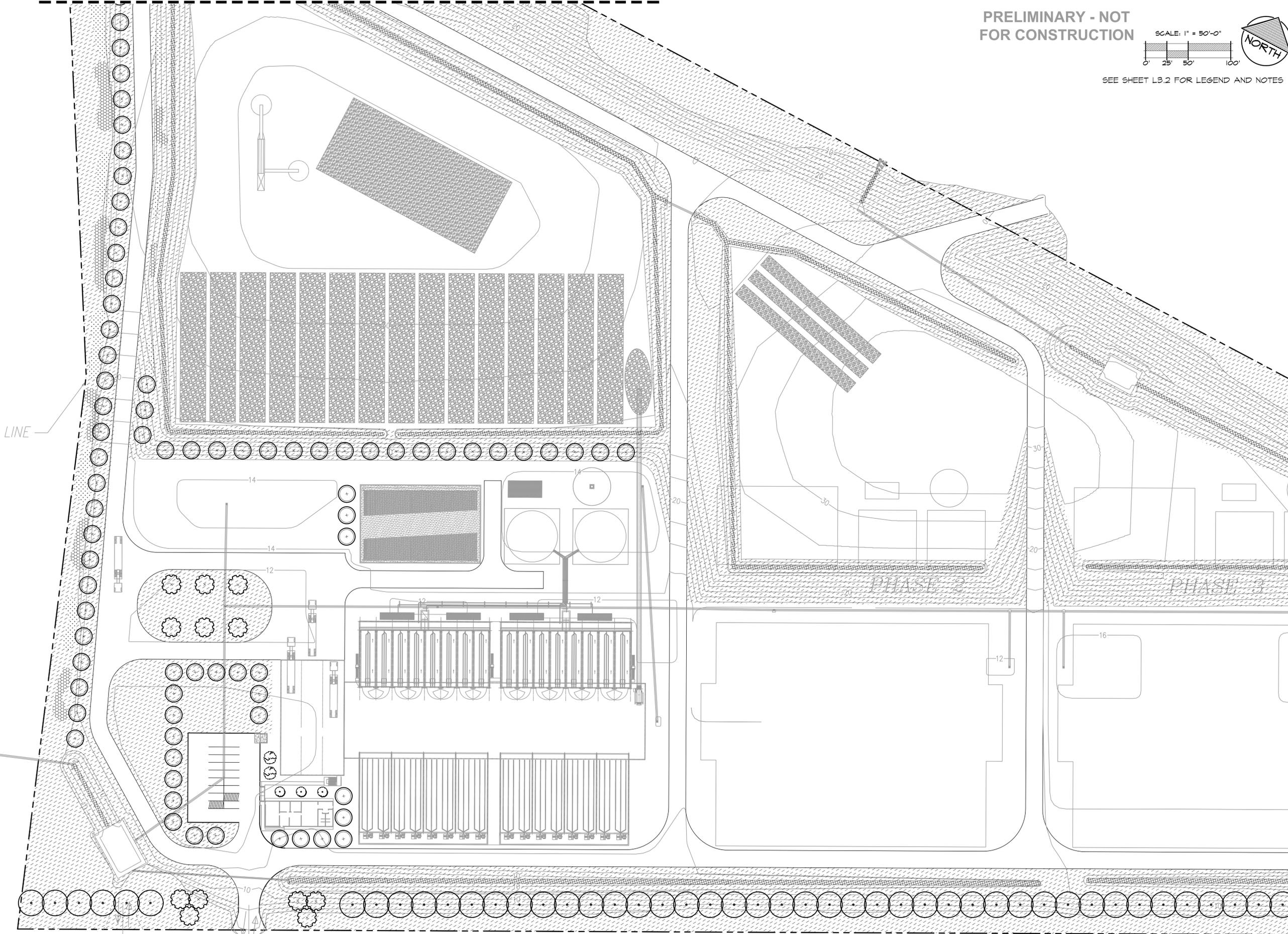
SCALE: 1" = 50'-0"



SEE SHEET L3.2 FOR LEGEND AND NOTES

RTY LINE

MATCHLINE, SEE AREA 3 - SHEET L3.2



AREA 1

**LANDARC** Associates, Inc.  
 1922 The Alameda - Suite 218  
 San Jose, CA 95126  
 RLA # 3980  
 t: 408.961.8885  
 www.landarcassociates.com

LANDSCAPE ARCHITECT  
 T. FORNABER  
 Cert. No. 3980  
 Signature: [Signature]  
 Date: 9/30/2010  
 Renewal Date: [Blank]  
 State of California

DATE	REVISION

DEVELOPER:  
**ZERO WASTE ENERGY DEVELOPMENT COMPANY**

PROJECT TITLE:  
**ANAEROBIC DIGESTION FACILITY  
 SAN JOSE, CA  
 PHASE I - III**

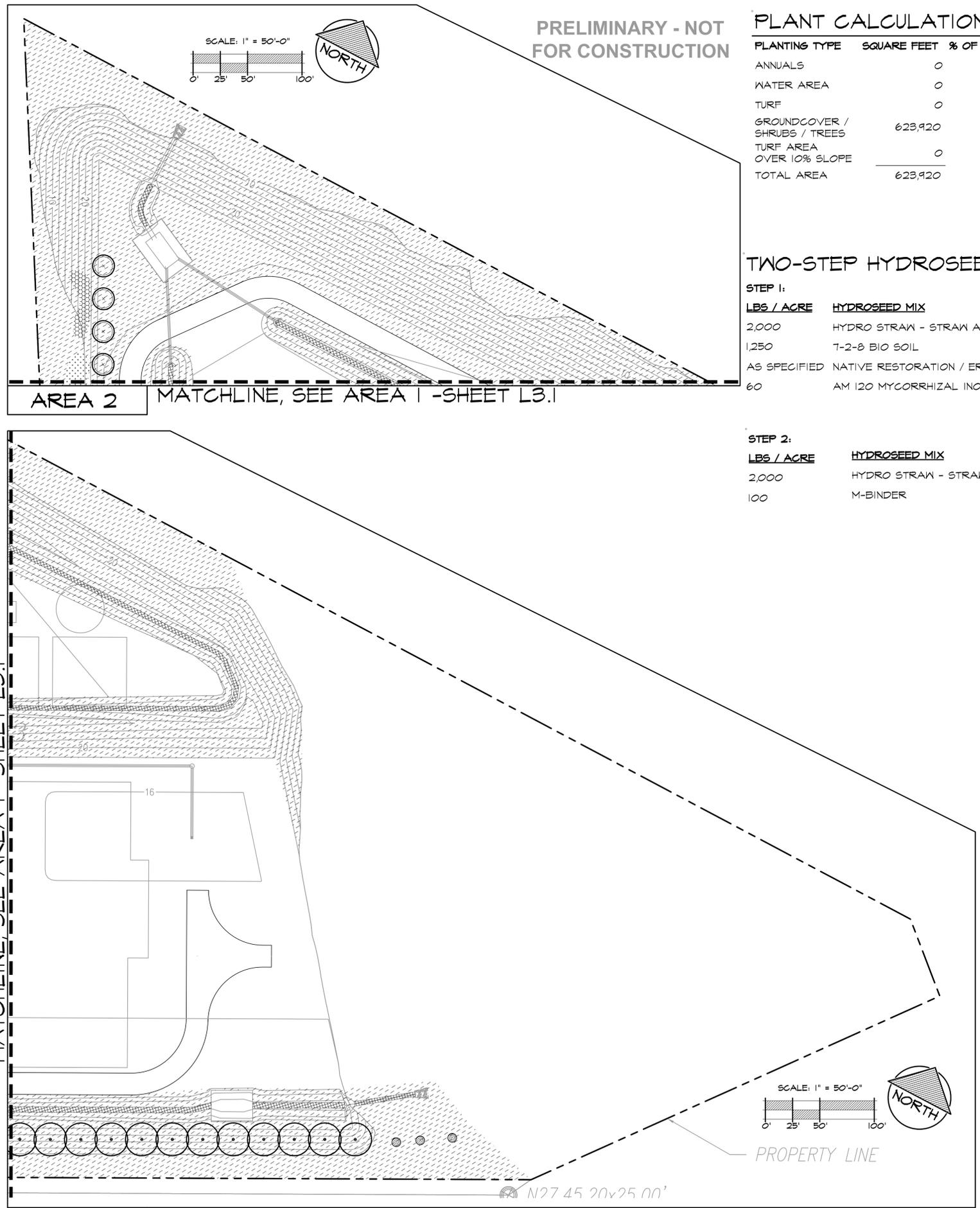
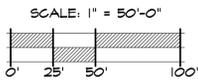
DATE: 03.15.10  
 JOB NUMBER: 0915  
 DRAWN: SF CHECKED: SF  
 SCALE: AS NOTED

SHEET TITLE:  
**PLANTING PLAN - AREA 1**

SHEET NUMBER:

**L3.1**

PRELIMINARY - NOT FOR CONSTRUCTION



**PLANT CALCULATIONS**

PLANTING TYPE	SQUARE FEET	% OF LANDSCAPING
ANNUALS	0	0
WATER AREA	0	0
TURF	0	0
GROUND COVER / SHRUBS / TREES	623,920	100
TURF AREA OVER 10% SLOPE	0	0
<b>TOTAL AREA</b>	<b>623,920</b>	<b>100</b>

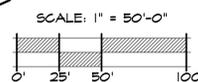
**TWO-STEP HYDROSEEDING**

**STEP 1:**

LBS / ACRE	HYDROSEED MIX
2,000	HYDRO STRAW - STRAW AND TACK MULCH
1,250	T-2-B BIO SOIL
AS SPECIFIED	NATIVE RESTORATION / EROSION SEED MIX (I)
60	AM 120 MYCORRHIZAL INOCULANT

**STEP 2:**

LBS / ACRE	HYDROSEED MIX
2,000	HYDRO STRAW - STRAW AND TACK MULCH
100	M-BINDER



PROPERTY LINE

N 27 45 20 x 25 00'

**PLANT LIST**

QTY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	SPACING
<b>TREES:</b>					
TBD	(Symbol)	ARCTOSTAPHYLOS 'DR. HURD'	MANZANITA	15 GAL	PER PLAN
TBD	(Symbol)	CEANOTHUS 'SNOW FLURRY'	NO COMMON NAME	15 GAL	PER PLAN
3	(Symbol)	CERCIS OCCIDENTALIS	WESTERN REDBUD	15 GAL	PER PLAN
TBD	(Symbol)	HETEROMELES ARBUTIFOLIA	TOYON	15 GAL	PER PLAN
80	(Symbol)	METROSIDEROS EXCELSUS	NEW ZEALAND CHRISTMAS TREE	24" BOX	PER PLAN
12	(Symbol)	POPULUS FREMONTII	FREMONT COTTONWOOD	24" BOX	PER PLAN
2	(Symbol)	PRUNUS ILICIFOLIA	HOLLYLEAF CHERRY	24" BOX	PER PLAN
56	(Symbol)	SCHINUS MOLLE	CALIFORNIA PEPPER TREE	24" BOX	PER PLAN

TBD = TO BE DETERMINED

**TALL SHRUBS:**

(Symbol)	CEANOTHUS 'SIERRA BLUE'	WILD LILAC	1 GAL	8' O.C.
(Symbol)	CEANOTHUS 'RAY HARTMAN'	CEANOTHUS	1 GAL	10' O.C.
(Symbol)	DENDROMECON HARFORDII	ISLAND BUSH POPPY	1 GAL	8' O.C.
(Symbol)	ELAEGNUS PUNGENS	SILVERBERRY	5 GAL	10' O.C.
(Symbol)	MYRICA CALIFORNICA	PACIFIC WAX MYRTLE	5 GAL	15' O.C.
(Symbol)	RHAMNUS CALIFORNICA	COFFEEBERRY	1 GAL	6' O.C.
(Symbol)	RHUS INTEGRIFOLIA	LEMONADE BERRY	1 GAL	8' O.C.

**LOW SHRUBS:**

(Symbol)	ARCTOSTAPHYLOS HOOKERI	MONTEREY CARPET MANZANITA	1 GAL	6' O.C.
(Symbol)	ARTEMISIA CALIFORNICA	CALIFORNIA SAGEBRUSH	1 GAL	5' O.C.
(Symbol)	BACCHARIS DOUGLASII	DOUGLAS' BACCHARIS	1 GAL	6' O.C.
(Symbol)	CISTICUS INCANDELLASCA SELECT	ROCK ROSE	1 GAL	5' O.C.
(Symbol)	MIMULUS AURANTIACUS	STICKY MONKEY FLOWER	1 GAL	5' O.C.
(Symbol)	ROSA CALIFORNICA	CALIFORNIA ROSE	1 GAL	6' O.C.

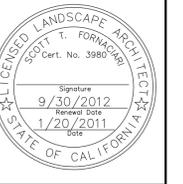
**BIOSWALE GROUNDCOVERS:**

(Symbol)	CAREX PANSA	CALIFORNIA MEADOW SEDGE	1 GAL	12" O.C.
(Symbol)	CAREX PRAEGRACILIS	CALIFORNIA FIELD SEDGE	1 GAL	12" O.C.
(Symbol)	CAREX TUMULICOLA	BERKELEY SEDGE	1 GAL	18" O.C.
(Symbol)	JUNCUS PATENS	CALIFORNIA GREY RUSH	1 GAL	24" O.C.

**NATIVE RESTORATION / EROSION HYDROSEED MIX:**

SEED MIX	SPECIES	MINIMUM GERM	LBS / ACRE
(Symbol)	ACHILLEA MILLIFOLIUM - SANTA CLARA*	45	0.75
(Symbol)	ARTEMISIA DOUGLASIANA	45	0.75
(Symbol)	ATRIPLEX TRIANGULARIS	45	0.50
(Symbol)	BACCHARIS DOUGLASII	40	0.25
(Symbol)	BROMUS CARINATUS VAR. MARITIMUS	40	8.00
(Symbol)	ELYMUS GLAUCUS - SANTA CLARA*	40	6.00
(Symbol)	ESCHSCHOLZIA CALIFORNICA VAR. MARITIMA	15	0.75
(Symbol)	GRINDELIA HIRSUTULA VAR. HIRTUTULA	30	1.25
(Symbol)	HORDEUM BRACHYANTHERUM SSP CALIFORNICUM	25	10.00
(Symbol)	LASTHENIA CALIFORNICA - SANTA CLARA*	20	0.75
(Symbol)	NASSELLA FULCHRA - SANTA CLARA*	45	4.00
(Symbol)	POA SECUNDA	40	2.50
(Symbol)	TRIFOLIUM WILDENOVII	40	3.50
(Symbol)		0	40.00

SANTA CLARA\* - SEED MUST BE COLLECTED FROM SANTA CLARA COUNTY



DATE	REVISION
1-20-11	CITY COMMENTS

DEVELOPER:  
**ZERO WASTE ENERGY DEVELOPMENT COMPANY**

PROJECT TITLE:  
**ANAEROBIC DIGESTION FACILITY SAN JOSE, CA PHASE I - III**

DATE: 03.15.10
JOB NUMBER: 0915
DRAWN: SF CHECKED: SF
SCALE: AS NOTED

SHEET TITLE:  
**PLANTING PLAN - AREA 2 & AREA 3**

SHEET NUMBER:  
**L3.2**