Exhibit R
Whispering Oaks Forest Management Plan

The Redevelopment Agency of
Monterey County
The Monterey-Salinas Bus
Maintenance and
Administrative Facility and
Whispering Oaks Business Park
PLN090071

Appeal PLN110231
Board of Supervisors
June 14, 2011
Forest Resource Evaluation

Whispering Oaks Business Park

Monterey, California

August 2009
Assignment/Scope of Services

A General Development Plan (GDP) has been submitted by the County of Monterey Redevelopment Agency to develop a mixed use business park (Whispering Oaks) within approximately 56 acres of the “Landfill Planning Area” of the former Fort Ord. The proposed Business Park is divided into three main development areas: the Monterey-Salinas Transit (MST) Parcel (24.3 acres); the West Landfill Parcel (19.2 acres); and the West Expansion Area (10.0 acres). In addition, the Business Park also depicts a future road corridor (2.5 acres) located along the eastern and northern borders of the MST Parcel. A Forest Management Plan was prepared for the MST property and has been submitted under separate cover (August 2009). This study evaluates the remaining Whispering Oaks property.

The Whispering Oaks Business Park site contains a significant number of Coast Live Oak trees, and is very visible from Inter-Garrison Road; therefore, the intent is to maintain an aesthetic use of existing oaks to the extent feasible. To this end, this Forest Resource Evaluation was developed to assist in future planning efforts. The purpose of this evaluation is to:

- Provide a thorough description of the forest resource on the Whispering Oaks property.
- Provide an estimate of the total tree population by size class and general condition rating using stratified random sampling.
- Establish the presence of “landmark” trees as well as any other significant forest resource occurrences or unique values.
- Provide information regarding ongoing forest impacts such as erosion or invasive species.
- Outline potential impacts of mass grading and opportunities for preservation of forest resources, including transplanting.

The specific impacts to trees relative to construction on the site are not evaluated in this report. Once development plans are finalized a separate forest management plan will be required to assess specific construction impacts and define tree preservation recommendations.

Summary

A General Development Plan (GDP) was submitted by the County Redevelopment Agency in May of 2009, to develop a business park in the landfill area of the Fort Ord property. The boundaries of the “West Landfill Parcel” and the “West Expansion Area” (approximately 29.2 acres) were used as the basis for a forestry evaluation. A Habitat Map was developed for the site by Denise Duffy and Associates, Inc., as show in Figure 1 (DD&A, August 2009). The habitat map was used to develop a stratified random sample for the Coast live oak woodland conducted on August 13, 2009. In addition, a reconnaissance level survey was conducted for the entire property. This forest evaluation presents a description of the existing trees and opportunities to preserve the existing resource in the proposed development. A Forest Management Plan will be required to analyze tree impacts of any proposed site layout prior to the submission of final project plans.
Site Description

The proposed Whispering Oaks Business Park comprises approximately 29.2 acres with direct access to Inter-Garrison Road at the southern edge of the property. The property is bordered by the proposed Monterey-Salinas Transit project on the west and undeveloped parcels of the former Fort Ord on the north and east.

Soils on the property were mapped in the Soil Survey of Monterey County as Oceano loamy sand (2-15%) slope (USDA, 1978). The Oceano series is described as sand and loamy sand to a depth of greater than 80". The soil developed on old dunes and has rapid permeability. Erosion hazard is slight to moderate. No surface erosion problems were noted during our survey, however, the soil is noted as being subject to wind erosion when exposed for cultivation, etc. Construction notes should take this into account and specifications should include watering and other provisions to protect exposed soil during grading and other activities.

Tree Stand Description

Vegetation on the proposed development area has been mapped as Grassland (7.9 acres), Maritime chaparral (0.15 acres), Coast live oak woodland (19.7 acres), and Disturbed/Developed (1.3 acres), as shown in Figure 1.

Grassland and Maritime Chaparral areas are described in the Biological Assessment prepared by Denise Duffy and Associates (August 2009).

Forest cover is comprised entirely of Coast live oak woodland (*Quercus agrifolia* and associated species). There are a few Monterey Cypress (*Cupressus macrocarpa*) and Monterey Pine (*Pinus radiata*) seedlings on the property which appear to have moved in from off site plantings. The understory is dominated by Poison oak with coffee berry, manzanita, and interspersed grasses. Areas close to Inter-Garrison Road have become invaded by iceplant and other invasive species including Pampas grass. Coast live oak density varies greatly from very dense to open savannah. Stand density variation was apparent in the plot data taken on the site. The oak stand on the property has developed under heavy wind pressure as can be seen by the general growth form of the trees. Average tree height is no more than 20 feet and the canopy shows a consistent, wind shaped platform, with few dominant stems. Many of the sampled stands consist of trees much shorter (10 to 12 feet) with numerous small stems (6"-8" diameter). Such stands tend to occur in the openings on the upper slopes of the property and are in generally poor condition.

Coast live oak stands appear to be fairly young and may have developed after occupation of Fort Ord. Prior to that time it is assumed that the property was grazed intensively and subject to periodic burning, which would have limited the extent of oak cover on the site. Few large, older trees were noted during our field reviews. These are discussed below.
The site is divided by roads originally constructed to access the facilities and associated power lines. In summary, the property presents a mix of some intensively disturbed areas surrounded by distinct vegetation types (oak woodland, maritime chaparral, and grassland) which have been left to develop in a relatively unaltered state. Tree stands generally appear to be 60-80 years old which would coincide with the acquisition and active use of the fort.

**Tree Inventory Methodology**

A stratified random sample of the area was taken using tenth acre circular plots over roughly 5 percent of the 19.8 acres mapped as Coast live oak woodland in Figure 1 (see Table 1 below). Tree size was recorded by appropriate size class and condition information was also noted. Tree health was evaluated by visually inspecting from the root crown (where the trunk meets natural grade) to the foliar canopy. Trees judged to be in “good” condition have little appearance of rot, or disease, and good canopy development and color. “Fair” condition trees have minor evidence of disease or decay and less than 30% foliar dieback. A tree rated in “poor” condition shows major evidence of either foliar dieback, or disease/decay, and poor foliage color.

Coast live oak in this location typically show a “cluster” or “grouped” growth form. This may be a result of the accumulation of multiple acorns by rodents or the result of browsing by deer on juvenile plants. In any case it makes the definition of an individual tree somewhat subjective in many cases as “clusters” of stems may share a common root system. For the purpose of this inventory, an individual tree was judged to have a minimum of 1 foot of separation from any other adjacent stem at ground level. Trees were then measured at 2 feet above ground level as per Title 16 Section 16.60.30. This may produce a somewhat higher number of trees but is indicative of the number of stems within the stand and their density.

The results of the tree inventory are displayed in the following table. Tree numbers are comparable to results from the May, 2009 survey for the adjacent MST site but are somewhat higher due to more constrained stratification and the presence of clumps of smaller trees with numerous stems. Condition evaluations for oaks were complicated by the presence of California oakworm (Pharyganidia californica). At the time of the survey the oaks on the property are recovering from being significantly defoliated by this pest over the past two years. Most trees are recovering well and most of those that appear somewhat weakened are expected to recover. Condition analysis was based on examination of limbs, trunk condition, foliar color, and foliar density, with some allowance made for recent defoliation.

**Table 1. Tree Inventory/Condition Evaluation**
**Tree Population-(Estimated by random sample)**

<table>
<thead>
<tr>
<th></th>
<th>6-11”</th>
<th>12-23”</th>
<th>24+”</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coast Live Oak</td>
<td>152</td>
<td>30</td>
<td>&lt;1</td>
<td>182</td>
</tr>
<tr>
<td>Trees Per acre</td>
<td>2995</td>
<td>591</td>
<td>12</td>
<td>3598</td>
</tr>
</tbody>
</table>
Table 1. Tree Inventory/Condition Evaluation (cont.)

Condition by Size Class (% of stand)

<table>
<thead>
<tr>
<th></th>
<th>6-11&quot;</th>
<th>12-23&quot;</th>
<th>24+&quot;</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coast Live Oak</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diameter</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dead</td>
<td>4</td>
<td>2</td>
<td></td>
<td>6%</td>
</tr>
<tr>
<td>Poor</td>
<td>41</td>
<td>6</td>
<td></td>
<td>47%</td>
</tr>
<tr>
<td>Fair</td>
<td>33</td>
<td>10</td>
<td></td>
<td>43%</td>
</tr>
<tr>
<td>Good</td>
<td>3</td>
<td>1</td>
<td></td>
<td>4%</td>
</tr>
</tbody>
</table>

Forest Health

As described above, it is presumed that most of the oaks on the property populated the site after a change in land use possibly coincident with the establishment of the original Fort Ord. A few of the larger oaks appear to have been resident prior to this and may have provided the seed source for the resulting stand. Several of these larger trees have been succumbing to the effects of age and show significant decay (see photo below).

Oaks in this condition are not worthy of protection as they will continue to break apart and are not expected to recover. There are a few larger trees that are in fair or good condition and these trees are worthy of protection (see Landmark Trees discussion below).

As mentioned above the Coast live oak stands on these parcels are primarily comprised of clusters of small diameter trees that are fairly short. The trees still show signs of recent oak California oakworm (Phryganidia californica) defoliation over the past two seasons and many of the trees have not fully recovered. Recovery from the defoliation appears to be slowed by lack of moisture on the site due to wind pressure and excessively drained sandy soils. Although the percentage of dead trees evident in the stand if fairly low at present, a slight increase in mortality might be expected over the next 2 to 3 years.

Oak regeneration within the stands is extremely low. Very few seedling sized trees were observed. This may be due to combination of wildlife use, low acorn production due to tree stress, and the overall density within the stands.

These stands of oaks provide valuable wildlife habitat for both common and threatened species. The nest of what is presumed to be Monterey Dusky-footed woodrat (Neotoma fuscipes Luciana) was encountered in several places within these stands (see photo below). This is a species of special concern in Monterey County and as such has certain protection requirements. It is also a good indicator of functional habitat.
Invasive plant species (particularly iceplant and pampas grass) were observed along Inter Garrison road and within the northeast area of the parcels. These species compete with existing trees and prevent tree seedlings and other native species from becoming established. Eradication efforts should be employed to remove these plants from the preserved landscape during the development process.

**Landmark Trees**

The survey for this report measured a total of 12 trees that fit the definition of Landmark Trees as presented in *Monterey County Zoning Ordinance Title 21* based on their size (see Table 2 and Figure 2).

Trees of this size typically existed on the site prior to its use by the military. Often these larger trees are suffering from extensive rot and are in poor condition due to their age. Of the 12 large trees measured in this survey, 8 were in poor condition. As the tree ages, repeated limb breakage and slow growth rates due to the dry site allow for the introduction of wood rotting fungus into the limbs and bole of the tree. Trees in this condition are poor candidates for preservation as they are unlikely to survive the effects of construction activity and often have a limited remaining lifespan in the natural environment.
Tree #72 - on slope above existing encroachment

Tree #67 - extensive trunk rot

Older trees may also assume a "decumbent" or low growing form over time, which makes them less visually significant (e.g., trees #66, 67, and 44). Tree #72 and 68 were the best candidates for preservation inspected in this survey and their locations should be noted for future design consideration (see Figure 2). Tree #44 is a large decumbent tree, which has value as a screen tree and is discussed below. Tree #75 is in fair condition and is also worthy of preservation.

It is worth noting that the arbitrary designation of 24" in diameter in determining the significance of large trees (as stated in Monterey County Zoning Ordinance Title 21) often confines
consideration to older trees in poor health. In fact there are numerous trees on the property in the 20-22" diameter class that are in better health than the large trees and may be better candidates for preservation. This is offered as an alternative mitigation for removal of the landmark size trees if their retention proves infeasible. Such alternate trees should be located by a qualified Forester/Arborist.

**Development Impacts to Forest Resources**

**Design Considerations**

The landscape value of Coast live oak has been recognized as a thematic goal for the General Development Plan for the property. It appears appropriate, therefore, that a significant level of effort be expended to preserve existing oaks wherever possible. The condition and location of the existing stands present numerous opportunities to accomplish this with adequate attention to pre-planning the development.

The design for the Whispering Oaks Business Park should include lots at appropriate elevations to avoid mass grading of the site. Lot elevations should be selected to match existing terrain to the extent feasible to allow for the preservation of existing “islands” of resident oaks in the landscape. Such “islands” or clumps of Coast live oak are numerous on the site particularly in the northeast corner (West Expansion area). Where feasible, “open space” areas of existing vegetation should be designated between sites where natural vegetation will be preserved. These open space areas and islands should be reviewed by a qualified Forester/Arborist to assess their ability to survive construction impacts. The design team should include a qualified Forester/Arborist to assist in the general layout of roads, lot layout, and parking area alternatives to further provide for preservation of existing trees. This specification should be made a part of the selection criteria for the development architectural team.

Use of the existing encroachment to Inter-Garrison Road should be considered as the primary access to the business park. Such an access could be sloped at a very moderate grade in order to preserve the existing topography to the greatest extent possible. This would allow for preservation of the landmark sized trees to the west of this access point (trees #72 and 75).

**Screen Trees (Inter Garrison Road)**

The General Development Plan calls for the maintenance of a “visually pleasing” streetscape along Inter-Garrison Road. The plan calls for a 20 foot “landscape buffer” along Inter-Garrison Road. This is inadequate to preserve the existing “natural landscape character” along this busy thoroughfare. The landscape buffer should be set at 50 feet, which would be consistent with the current proposal for the adjacent Monterey-Salinas Transit facility. This distance will allow adequate space for tree growth and will allow for preservation of a substantial number of existing trees which could provide valuable screening and the desired landscape effect.

A survey of potential screen trees along Inter-Garrison Road (see Figure 2) shows that there are 58 trees over 6" in diameter that could be preserved in a 50 foot buffer from the road edge. These trees would provide approximately 850 feet of visual screening for the development if
preserved. Most of the trees in this strip that are valuable for screening occur on the western and eastern ends of the parcels. Tree #44 is a good condition landmark sized tree that would be particularly useful for screening and should be protected. There is a substantial section in the center of the frontage (roughly 750’), which is occupied by a few poor condition trees (trees #24-27). This is in the area of the existing encroachment to Inter-Garrison Road. Future designs should focus on this area as the primary access to the development in order to preserve valuable existing screen trees. Use of this open area will allow for construction of turn lanes and entrance enhancements without removal of native trees. Post construction landscaping should include plantings of various sized Coast live oak with associated native species to reduce watering requirements.

**Tree Replacement**

Transplants/Replanting

It is assumed that landscape plans for future development of the site will include provisions for transplanting and replanting of Coast live oak. Suitable transplants should be marked and removed prior to the beginning of operations under of the supervision of a qualified Arborist/Forester. The appropriate number of transplants will be determined by the landscape plan. As stated above, the vast majority of the existing stands on the property are comprised of numerous clusters of small trees. These trees often do not make appropriate transplants as they have a common root system that will be damaged when removed and the individual stems do not have a symmetrical crown. There are a limited number of small, individual stem trees that would make appropriate transplants, most of these occur in open areas close to Inter-Garrison Road. Such trees could be removed and boxed for later transplant at the completion of construction. There are 10 to 15 trees in the 12-23” size class that consist of individual stem trees in fair condition and are transplantable. The cost for transplanting the larger trees is much higher, however, and these would have to have ample rooting space in the landscape to be successful.

When the project design is completed an estimate of the appropriate number of replacement seedlings can be made based on available planting space. As effectively the only tree native to the site is the coast live oak, it should be the only tree species credited for replanting. Other trees may be added to the landscape (preferably species native to or at least compatible with the Central Coast), but should not be counted as replacement trees unless they are also native to the Central Coast and not in amounts greater by species than 5% of the replacement tree total. All native trees should be selected from known local seed sources. Not less than 80% of replacement trees should be small, less than one gallon in size (super cells or D40 tree pots). These are small seedlings grown in tubes. Studies show that young seedlings establish more quickly, require less irrigation for a shorter duration, and will outgrow a larger planted tree. Smaller trees are easier to plant and maintain. Propagation of local seed can be accomplished in a much shorter time frame using this method. Protection from deer browse is highly recommended and may be essential to assure seedling survival. It is recommended that not more than 20% of the replacement trees be of five-gallon container size or larger. Larger trees take longer to become established, require more expertise to plant correctly, and do not outgrow the smaller trees. These larger trees may be incorporated into a landscape plan when an immediate visual effect is desired. This provision is created to allow the landscape plan to assume a small
percentage of the on-site tree replacement where species selection is appropriate. Final
landscape planting will require a post planting watering plan based on the time of planting and
size of selected stock.

Coast live oaks do not coexist comfortably with turf management practices in the landscape.
Native oaks, which are adapted to dry summers, and turf, which requires frequent irrigation, are
generally not compatible. Frequent turf watering around the trees tends to result in oaks of low
vigor and shortened life spans due to root disease. The final landscape plan shall incorporate
appropriate species to limit watering around retained and planted oaks.

Off-site Mitigation

A thorough discussion of the opportunities for off-site mitigation appropriate to this project is
presented in “Preliminary Oak Woodland Habitat and Tree Removal Mitigation Strategy Plan for
the MST Facility/Whispering Oaks Business Park,” Denise Duffy & Associates, Inc. August,
2009.

Recommendations Summary

The General Development Plan recognizes the value and abundance of Coast live oak on the
property, and has a stated intention to preserve the character of this vegetation in the future site
development. In addition there are several large “landmark” trees that should be considered for
preservation in future designs. In order to accomplish these goals a qualified Forester/Arborist
should be made a part of the design team for the development. Any proposed development of
the property will require a Forest Management Plan as specified in Title 21 of the Monterey
County Zoning Ordinance. In order to assure that recommendations in the FMP are consistent
with the final site layout, it is crucial that there be pre-planning coordination between the forester
and site developer(s). A follow-up inventory should be conducted based on proposed building
designs to determine the specific impacts of construction proposals.

There are intact stands of Coast live oak on the property that show current use of animal species
of special concern in Monterey County. Any future building proposals should be preceded by
adequate biological study to define the extent of these stands and mitigations to minimize
impacts. Building proposals should anticipate these constraints and avoid impacts wherever
possible. (See also Biological Assessment by Denise Duffy & Associates, August 2009.)

There are opportunities to preserve valuable screen trees and landmark trees by using the existing
encroachment to Inter-Garrison Road. Future designs should consider the use of variable
elevations for site layout to match existing topography to the extent possible in order to provide
opportunities to preserve existing tree “islands” and avoid mass grading of the site. There are a
limited number of suitable transplant trees on the property. These should be marked for removal
by a qualified Forester/Arborist prior to construction activity.
Submitted by:

Bill Ruskin
Registered Professional Forester #2248

References Cited:


Figure 1. Habitat Map