HORTSCIENCE INC.

PRELIMINARY TREE REPORT

Monterey Estates
San Jose, CA

PREPARED FOR:
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Preliminary Tree Report
Monterey Estates
San Jose CA

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Introduction and Overview

Mindigo & Associates is coordinating development application materials for the property at 4240 Monterey Hwy., in San Jose. The site is occupied by a single abandoned residence and an outbuilding. The plans propose to construct 38 residential units on the property. HortScience, Inc. was asked to prepare a **Tree Report** for the site for review by the City of San Jose.

This report provides the following information:

1. An evaluation of the health and structural condition of the trees from a visual inspection.

2. An evaluation of the impacts of the proposed development on the trees.

Survey Methods

I visited the site on Wednesday, April 26, 2006. Twenty-five (25) trees were surveyed, including eight (8) off-site trees. The survey included all trees 6" and greater in diameter. The survey procedure consisted of the following steps:

1. Identifying the tree as to species;
2. Tagging each tree with an identifying number and recording its location on a map;
3. Measuring the trunk diameter at a point 24" above grade;
4. Evaluating the health and structural condition using a scale of 1 – 5:
   - ***5*** - A healthy, vigorous tree, reasonably free of signs and symptoms of disease, with good structure and form typical of the species.
   - ***4*** - Tree with slight decline in vigor, small amount of twig dieback, minor structural defects that could be corrected.
   - ***3*** - Tree with moderate vigor, moderate twig and small branch dieback, thinning of crown, poor leaf color, moderate structural defects that might be mitigated with regular care.
   - ***2*** - Tree in decline, epicormic growth, extensive dieback of medium to large branches, significant structural defects that cannot be abated.
   - ***1*** - Tree in severe decline, dieback of scaffold branches and/or trunk; most of foliage from epicormics; extensive structural defects that cannot be abated.
5. Rating the suitability for preservation as "good", "moderate" or "poor". Suitability for preservation considers the health, age and structural condition of the tree species, and its potential to remain an asset to the site for years to come.

   Good: Trees with good health and structural stability that have the potential for longevity at the site.

   Moderate: Trees with somewhat declining health and/or structural defects than can be abated with treatment. The tree will require more intense management and monitoring, and may have shorter life span than those in 'good' category.

   Poor: Trees in poor health or with significant structural defects that cannot be mitigated. Tree is expected to continue to decline, regardless of treatment. The species or individual tree may have characteristics that are undesirable for landscapes, and generally are unsuited for use areas.

Description of Trees

The site was steep and rocky, with on-site trees concentrated in the southwest corner around the house and driveway entry. A total of 25 trees were surveyed, representing five (5) species. Eight (8) of the surveyed trees (#79, 81, and 88-93) were off-site, with portions of their crowns extending onto the development site. Off-site trees were not tagged.

The most common species encountered was Peruvian mastic, with 11 trees or 44% of the population (**Table 1**, following page). Tree of heaven was the only other on-site species, with a total of nine (9) trees, two (2) of which were off-site. The remaining three (3) species included only off-site trees. None of the species surveyed are native to California.

Five (5) of the Peruvian mastic trees were mature in structure and form, the remaining three (3) appeared to be stump-sprouts from previously removed trees. Two of the trees (#73 and 74) were poorly anchored on a rock outcropping (#73) and a retaining wall (#74). Peruvian mastic stump sprouts were formed by several small-diameter stems, one or two of which were upright, and the remainder of which arched to the ground (**Photo 1**).

A row of tree of heaven ran along the southern property boundary and appeared to be volunteers. These trees were spreading in a linear fashion to the east. A group of several sprouts were tagged as a single individual (#87).

Tree of heaven and Peruvian mastic trees along the southern property line had been pruned for utility line clearance, some having been topped. Repeated utility prunings can adversely affect tree health, while the location of the tree with relation to utility lines necessarily affects it's suitability for preservation.

Average tree condition was fair, with 17 trees, or 68% of the population. Six (6) trees were in good condition (24%), and two (2) were in poor (8%).

The City of San Jose requires a permit for the proposed removal of any tree with a diameter of 18" or greater, measured 24" above grade (Ordinance 13.32, Tree Removal controls). A removal permit is also required when the sum of the trunk diameters of multi-stemmed trees is 18" or greater. Ten (10) of the on-site trees met the criteria for requiring a removal permit.

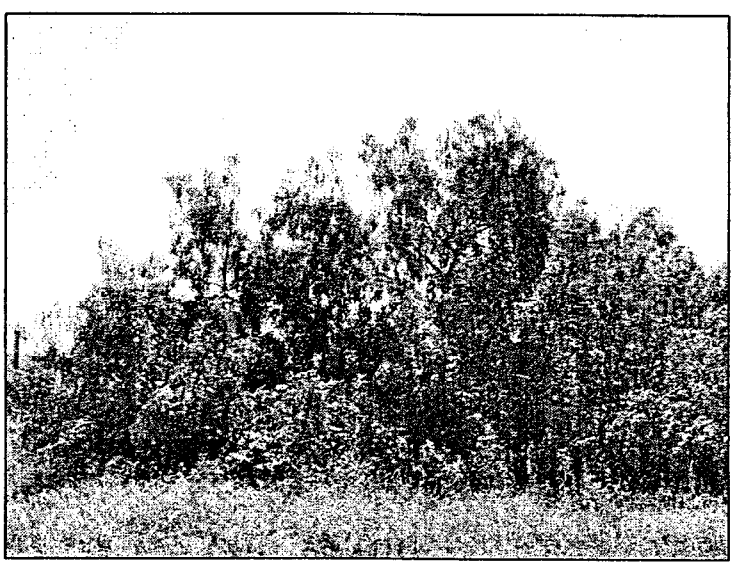

Photo 1: Peruvian mastic stump sprout #76 was one of two located south of the driveway. Stump sprouts were formed by several stems. Some stems were upright, but most were bowed to the ground.

Table 1. Tree condition & frequency of occurrence.
Monterey Estates, San Jose.

Common Name	Scientific Name	Condition Rating			No. of
		Poor (1-2)	Fair (3)	Good (4-5)	Trees
Tree of heaven	*Ailanthus altissima*	1	8	-	9
Deodar cedar	*Cedrus deodara*	-	1	-	1
Canary Island pine	*Pinus canariensis*	1	1	1	3
Monterey pine	*Pinus radiata*	-	1	-	1
Peruvian mastic	*Schinus molle*	-	6	5	11
Total		**2**	**17**	**6**	**25**
		8%	68%	24%	100%

Suitability for Preservation

Before evaluating the impacts that will occur during development, it is important to consider the quality of the tree resource itself, and the potential for individual trees to function well over an extended length of time. Trees that are preserved on development sites must be carefully selected to make sure that they may survive development impacts, adapt to a new environment, and perform well in the landscape.

Our goal is to identify trees that have the potential for long-term health, structural stability and longevity. For trees growing in open fields, away from areas where people and property are present, structural defects and/or poor health presents a low risk of damage or injury if they fail. However, we must be concerned about safety in use areas. Therefore, where development encroaches into existing plantings, we must consider their structural stability as well as their potential to grow and thrive in a new environment.

Evaluation of suitability for preservation considers several factors:

- **Tree health**
  Healthy, vigorous trees are better able to tolerate impacts such as root injury, demolition of existing structures, changes in soil grade and moisture, and soil compaction than are non-vigorous trees.

- **Structural integrity**
  Trees with significant amounts of wood decay and other structural defects that cannot be corrected are likely to fail. Such trees should not be preserved in areas where damage to people or property is likely.

- **Species response**
  There is a wide variation in the response of individual species to construction impacts and changes in the environment. In our experience, for example, mature Peruvian mastic trees have a moderate tolerance to construction impacts, while Canary Island pine and tree of heaven are more tolerant of site disturbance.

- **Tree age and longevity**
  Old trees, while having significant emotional and aesthetic appeal, have limited physiological capacity to adjust to an altered environment. Young trees are better able to generate new tissue and respond to change.

- **Invasiveness**
  Trees with the potential to invade native habitats, reproduce rapidly, and grow in sub-optimal environments are considered invasive. Species with these qualities may alter the functional and aesthetic qualities of the habitats they invade. Tree of heaven is a good example of an invasive species, with rapid growth and large seed crops dispersed by the wind.

Each on-site tree was rated for suitability for preservation based upon its age, health, structural condition and ability to safely coexist within a development environment (**Table 2**). Off-site trees were not rated for suitability for preservation.

We consider trees with good suitability for preservation to be the best candidates for preservation. We do not recommend retention of trees with low suitability for preservation in areas where people or property will be present. Retention of trees with moderate suitability for preservation depends upon the intensity of proposed site changes.

Table 2: Tree Suitability for Preservation

Good	These are trees with good health and structural stability that have the potential for longevity at the site. No (0) on-site trees were of good suitability for preservation.
Moderate	Trees in this category have fair health and/or structural defects that may be abated with treatment. Trees in this category require more intense management and monitoring, and may have shorter life-spans than those in the "good" category. Seven (7) on-site trees were of moderate suitability for preservation.

Tree No.	*Species*	*Diameter* (in.)
70	Peruvian mastic	14,12
71	Peruvian mastic	19,12
72	Peruvian mastic	34,16
75	Peruvian mastic	11,6,6,5,4
76	Peruvian mastic	6,5,4
77	Peruvian mastic	37
78	Peruvian mastic	9,8

(Continued, following page)

Table 2: Tree Suitability for Preservation, continued

Poor Trees in this category are in poor health or have significant defects in structure that cannot be abated with treatment. These trees can be expected to decline regardless of management. The species or individual tree may possess either characteristics that are undesirable in landscape settings or be unsuited for use areas. Ten (10) on-site trees were of poor suitability for preservation.

Tree No.	*Species*	*Diameter* (in.)
69	Peruvian mastic	6,5,5,3,3,2,2
73	Peruvian mastic	7,6,5
74	Peruvian mastic	21,13
80	Tree of heaven	7
82	Tree of heaven	10,6
83	Tree of heaven	7
84	Tree of heaven	7
85	Tree of heaven	8
86	Tree of heaven	11,7
87	Tree of heaven	6,5,5,4,4,3,3

Preliminary Evaluation of Impacts

The ***Tree Survey Form*** was the reference point for tree health and condition (see Attachments). I referred to the Conceptual Site Plan prepared by R+G, Architects and Planners (10/22/05) to assess the impacts to trees from the proposed changes.

Evaluation of impacts and recommendations for tree preservation are preliminary, as accurate trunk locations and specific grading details were not shown on the plan.

The plan proposes to build 38 single-family residences, associated parking, roads and retaining walls. Grading of the site to create a suitably level surface for construction of homes would have the greatest impact on the tree resource.

The proposed plan would directly impact five (5) trees, requiring their removal (**Table 3**, following page). Two (2) of these were of poor suitability for preservation, and three (3) were moderate. Tree of heaven is considered invasive and of poor suitability for preservation. The seven (7) on-site trees of heaven (#80 and 82-87) should be removed irrespective of impacts from the proposed development.

Thirteen (13) trees are preliminarily recommended for preservation, including the three (3) Peruvian mastic stump sprouts and two (2) mature Peruvian mastic trees west of the existing house. Peruvian mastic stump sprouts #75 and 76 should be pruned to remove stems that are bowed to the ground, while preserving upright stems. This will also facilitate the removal of the debris around the base of the trees.

All trees preliminarily recommended for preservaton will have to be surveyed and a final determination regarding their preservation made once development plans are refined and trunk locations are plotted on all plans.

Based on the current plans, no impacts to off-site trees are anticipated.

In summary, the current plan requires the removal of 12 on-site trees, and allows for the preservation of 13 trees, including five (5) on-site and eight (8) off-site.

A tree removal permit, issued by the City of San Jose, will be required for the removal of the six (6) on-site trees with diameters of 18" or above. These are trees #70, 73, 74, 77, 86, and 87 (**Table 3**).

Table 3. Proposed action. Monterey Estates, San Jose CA.

Tree No.	Species	Trunk Diameter (in.)	Removal permit required?	Suitability For Preservation	Action
69	Peruvian mastic	6,5,5,3,3,2,2	Yes	Poor	**Preserve**; outside development.
70	Peruvian mastic	14,12	Yes	Moderate	Remove; within building envelope.
71	Peruvian mastic	19,12	Yes	Moderate	**Preserve**; outside development.
72	Peruvian mastic	34,16	Yes	Moderate	**Preserve**; outside development.
73	Peruvian mastic	7,6,5	Yes	Poor	Remove; poor suitability.
74	Peruvian mastic	21,13	Yes	Poor	Remove; poor suitability.
75	Peruvian mastic	11,6,6,5,4	Yes	Moderate	**Preserve**; outside development.
76	Peruvian mastic	6,5,4	No	Moderate	**Preserve**; outside development.
77	Peruvian mastic	37	Yes	Moderate	Remove; within road.
78	Peruvian mastic	9,8	No	Moderate	Remove; within road.
79	Tree of heaven	7,7,5	Yes	--	Off-site.
80	Tree of heaven	7	No	Poor	Remove; poor suitability.
81	Tree of heaven	12,12,10,9,7	Yes	--	Off-site.
82	Tree of heaven	10,6	No	Poor	Remove; poor suitability.
83	Tree of heaven	7	No	Poor	Remove; poor suitability.
84	Tree of heaven	7	No	Poor	Remove; poor suitability.
85	Tree of heaven	8	No	Poor	Remove; poor suitability.
86	Tree of heaven	11,7	Yes	Poor	Remove; poor suitability.
87	Tree of heaven	6,5,5,4,4,3,3	Yes	Poor	Remove; poor suitability.
88	Canary Island pine	13	No	--	Off-site.
89	Canary Island pine	6	No	--	Off-site.
90	Canary Island pine	15	No	--	Off-site.
91	Peruvian mastic	5,4,4	No	--	Off-site.
92	Monterey pine	30	Yes	--	Off-site.
93	Deodar cedar	26	Yes	--	Off-site.

Tree Preservation Guidelines

The following recommendations will help reduce impacts to trees from development and maintain and improve their health and vitality through the clearing, grading and construction phases.

Design recommendations

1. The horizontal and vertical elevations of on-site trees preliminarily recommended for preservation shall be established and included on all plans.

2. Any changes to the plans affecting the trees should be reviewed by the Consulting Arborist with regard to impacts to trees. These include, but are not limited to, site plans, improvement plans, utility and drainage plans, grading plans, landscape and irrigation plans, and demolition. Trunk locations, trunk elevations and driplines should be included on all plans.

3. A **TREE PROTECTION ZONE** shall be established around each tree to be preserved. No grading, excavation, construction or storage of materials shall occur within that zone. For design purposes, the **TPZ** shall be established at the dripline.

4. No underground services including utilities, sub-drains, water or sewer shall be placed in the **TREE PROTECTION ZONE.**

5. Irrigation systems must be designed so that no trenching will occur within the **TREE PROTECTION ZONE.**

6. Any herbicides placed under paving materials must be safe for use around trees and labeled for that use.

7. As trees withdraw water from the soil, expansive soils may shrink within the root area. Therefore, foundations, footings and pavements on expansive soils near trees should be designed to withstand differential displacement.

Pre-construction treatments and recommendations

1. Fence all trees to be retained to completely enclose the **TREE PROTECTION ZONE** prior to demolition, grubbing or grading. Fences shall be 6 ft. chain link or equivalent as approved by the City of San Jose. Fences are to remain until all grading and construction is completed.

2. Preserved trees will require pruning to provide construction clearance. If preserved, trees #75 and 76 will require removal of stems to facilitate debris removal and create a suitably structured tree. All pruning shall be completed by a Certified Arborist or Tree Worker. Pruning shall adhere to the latest edition of the ANSI Z133 and A300 standards as well as the *Best Management Practices – Tree Pruning* published by the International Society of Arboriculture. Brush shall be chipped and spread beneath the trees within the **TREE PROTECTION ZONE.**

Recommendations for tree protection during construction

1. If injury should occur to any tree during construction, it should be evaluated as soon as possible by the Consulting Arborist so that appropriate treatments can be applied.

2. Any root pruning required for construction purposes shall receive the prior approval of and be supervised by the Consulting Arborist.

3. No excess soil, chemicals, debris, equipment or other materials shall be dumped or stored within the **TREE PROTECTION ZONE**.

4. Any additional tree pruning needed for clearance during construction must be performed by a Certified Arborist and not by construction personnel.

Maintenance of impacted trees
Trees preserved at the Monterey Estates site will experience a physical environment different from that pre-development. As a result, tree health and structural stability should be monitored. Occasional pruning, fertilization, mulch, pest management, replanting and irrigation may be required. In addition, provisions for monitoring both tree health and structural stability following construction must be made a priority. As trees age, the likelihood of failure of branches or entire trees increases. Therefore, the management plan must include an annual inspection for hazard potential.

HortScience, Inc.

Sincerely,

John Leffingwell
Certified Arborist #WE3966A
Registered Consulting Arborist #442

Attached: ***Tree Survey Form***
Tree Survey Map

HORTSCIENCE TREE SURVEY

Mindigo and Associates
Monterey Estates
San Jose
May, 2006

TREE No.	SPECIES	SIZE DIAMETER (in inches)	CONDITION 1=POOR 5=EXCELLENT	SUITABILITY FOR PRESERVATION	COMMENTS	DRIPLINES North	South	West	East	Height
69	Peruvian mastic	6,5,5,3,3,2,2	3	Poor	Stump sprout; multiple stem failures.	12	12	12	12	18
70	Peruvian mastic	14,12	4	Moderate	Codominant trunks at 2'; branch wound; small basal cavities.	22	15	14	18	25
71	Peruvian mastic	19,12	3	Moderate	Codominant trunks at 2'; twig and branch dieback.	16	22	16	20	35
72	Peruvian mastic	34,16	3	Moderate	Multiple attachments at 4'; twig and branch dieback; girdling root and large exposed root to the south.	25	12	18	18	35
73	Peruvian mastic	7,6,5	3	Poor	Codominant trunks at base; one-sided to west; trunk wound; poorly anchored on rock outcropping.	15	15	5	18	18
74	Peruvian mastic	21,13	3	Poor	Codominant trunks at 3'; root, trunk and branch wounds; poorly anchored on rock wall.	22	17	21	20	35
75	Peruvian mastic	11,6,6,5,4	4	Moderate	Stump sprout; branches to ground; debris has been piled around tree.	22	12	10	22	20
76	Peruvian mastic	6,5,4	4	Moderate	Stump sprout; branches to ground; debris has been piled around tree.	18	12	12	10	18
77	Peruvian mastic	37	4	Moderate	Codominant trunks at 5'; good form and structure; south side pruned for overhead utilities.	22	18	20	30	50

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TREE No.	SPECIES	SIZE DIAMETER (in inches)	CONDITION 1=POOR 5=EXCELLENT	SUITABILITY FOR PRESERVATION	COMMENTS	DRIPLINES North	South	West	East	Height
78	Peruvian mastic	9,8	4	Moderate	Stump sprout; growing on steep slope with debris at base; beneath overhead utilities.	16	15	17	15	25
79	Tree of heaven	7,7,5	3	-	Off-site, no tag; topped for overhead utilities.	15	-	14	14	25
80	Tree of heaven	7	3	Poor	Edge tree; leans west.	13	-	5	15	25
81	Tree of heaven	12,12,10,9,7	3	-	Off-site, no tag; topped with regrowth.	20	-	10	20	35
82	Tree of heaven	10,6	3	Poor	Codominant trunks at base; topped with regrowth.	18	-	5	8	30
83	Tree of heaven	7	3	Poor	Topped with regrowth; poor form and structure.	15	-	5	5	30
84	Tree of heaven	7	2	Poor	Edge tree; heavy lean north.	20	-	5	5	25
85	Tree of heaven	8	3	Poor	Topped with regrowth; poor form and structure.	10	-	5	5	35
86	Tree of heaven	11,7	3	Poor	Codominant trunks at base; topped with regrowth.	26	-	15	15	35
87	Tree of heaven	6,5,5,4,4,3,3	3	Poor	Ailanthus sprouts.	5	5	7	7	18
88	Canary Island pine	13	5	-	Off-site, no tag; good form and structure.	10	10	10	10	30
89	Canary Island pine	6	2	-	Off-site, no tag; engulfed in ivy; declining.	5	5	5	5	12
90	Canary Island pine	15	3	-	Off-site, no tag; leans west.	10	10	10	10	30
91	Peruvian mastic	5,4,4	3	-	Off-site, no tag; failed and laying on ground.	15	10	5	25	15

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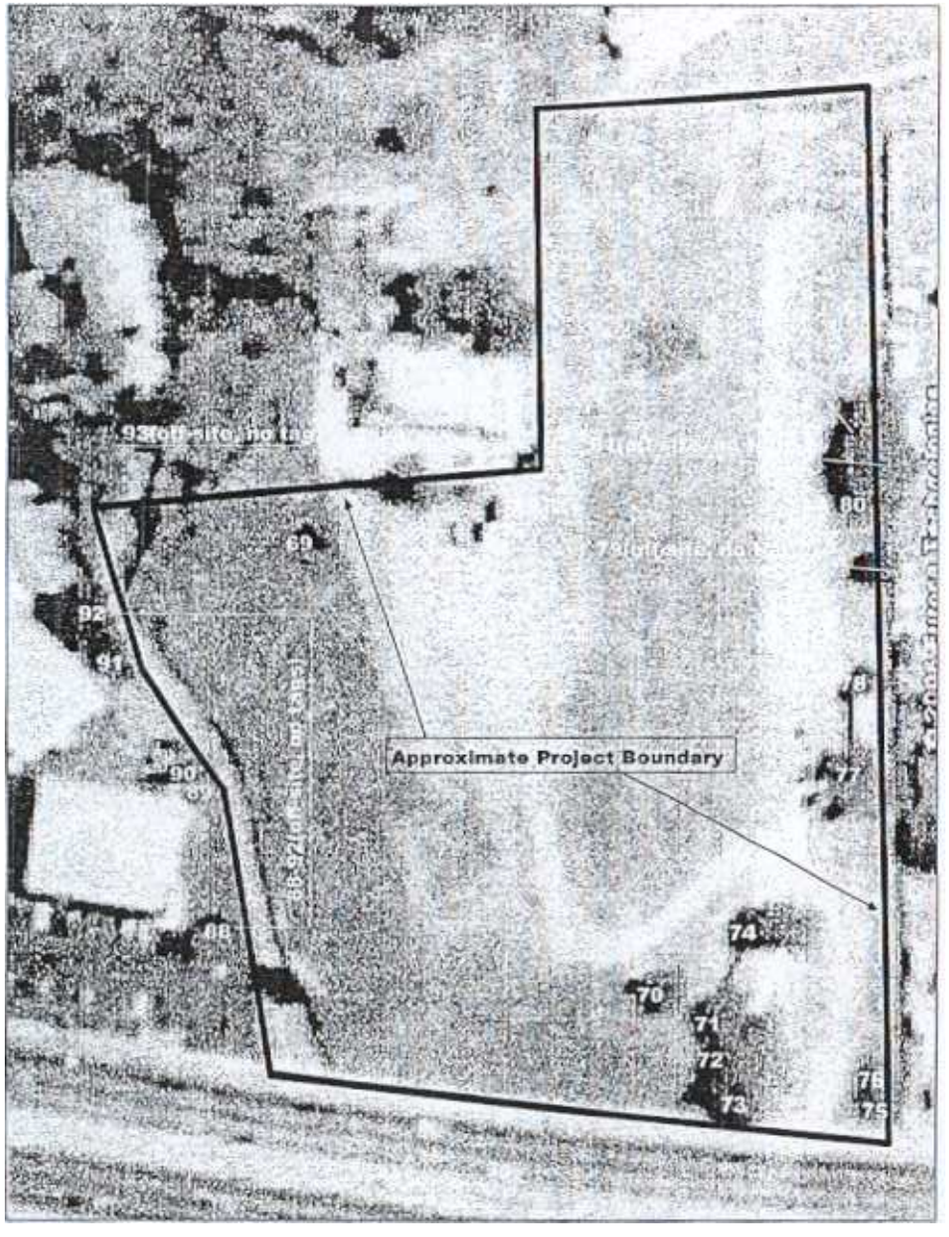
TREE No.	SPECIES	SIZE DIAMETER (in inches)	CONDITION 1=POOR 5=EXCELLENT	SUITABILITY FOR PRESERVATION	COMMENTS	DRIPLINES North	DRIPLINES South	DRIPLINES West	DRIPLINES East	Height
92	Monterey pine	30	3	-	Off-site, no tag; fair structure; sequoia pitch moth.	-	20	20	25	50
93	Deodar cedar	26	3	-	Off-site, no tag; sparse canopy; dead top.	15	18	-	15	45



Tree Survey Map

Monterey Estates
San Jose, CA

Prepared for:
Mindigo & Associates
San Jose, CA

May 2006

No Scale

Notes:
Base map provided by:
Mindigo & Associates

Numbered tree locations and project boundaries are approximate.

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