Appendix I

Update of Draft TEAM Plan for Inclusion in Final Piperia Plan

Jones & Stokes

MEMORANDUM

TO: Thom McCue

FROM: Rich Walter, Jones & Stokes

DATE: September 15, 2004

RE: Updates to Draft TEAM Plan for Piperia Plan

This memorandum describes changes to the draft Transplantation, Enhancement, and Adaptive Management (TEAM) Plan to be incorporated into the final Piperia Plan pursuant to comments received on the Draft EIR, consultation with the U.S. Fish and Wildlife Service (USFWS), the California Department of Fish and Game (CDFG) and the direction of Monterey County Planning and Building Department (County). This memorandum, along with the draft TEAM plan, will constitute the basis for the final Piperia Plan required by mitigation proposed in the Partial Revision of the Draft EIR (PRDEIR) for impacts of the Del Monte Forest Preservation and Development Plan on Yadon's piperia.

SUMMARY

The following are the key changes to the draft TEAM plan included in this Update:

- transplantation is now limited to Area MNOUV only;
- success criteria for transplantation and enhancement have been changed; and
- the list of enhancement treatment areas has been expanded.

These changes are discussed further below.

TRANSPLANTATION

The draft TEAM plan proposed a large-scale transplantation effort in multiple locations within the Del Monte Forest. USFWS and CDFG raised concern in comments on the DEIR that such large-scale transplantation could actually result in adverse effects to existing populations of Yadon's piperia in receiver sites, in particular through genetic contamination. Both agencies recommended that the TEAM plan focus more on enhancement and that transplantation be limited to Area MNOUV using material salvages at Area MNOUV. After review of this concern, Monterey County determined that this is an appropriate change to the mitigation.

The success criteria for transplantation are described below. The overall goal of transplantation, in conjunction with the other measures, is to sustain and expand the retained population at Area MNOUV, as feasible. Transplantation within test plots within retained forest at Area MNOUV will also be considered as a supporting research component to help further understanding of Yadon's piperia and its habitat to further the potential for a successful enhancement effort.

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SUCCESS CRITERIA

The primary success criteria for the Piperia Plan is to achieve no net loss of Yadon's piperia due to the Proposed Project.

The following objectives shall be the metrics used by the County and the Adaptive Management Team (AMT) to determine whether implementation of the plan is meeting the primary success criteria:

- **Enhancement** – The plan shall result in a sustained expansion of piperia range in terms of "occupied habitat" at each required enhancement treatment area where unnatural impediments (such as invasive non-native species) to natural expansion of existing populations are identified and feasible enhancement treatments are developed.
- **Transplantation** – The plan shall result in salvage of Yadon's piperia at the proposed golf course and transplantation within a proposed minimum of 20 acres of suitable retained forest at Area MNOUV not containing "occupied habitat". This work shall be accomplished in accord with guiding principals contained within the Piperia Plan. Enhancement and maintenance of the transplantation areas will occur such that they contain self-sustaining populations of piperia.
- **Exclusion of existing piperia areas** - Success will only be achieved if piperia are present within transplantation or enhancement treatment areas that did not previously contain Yadon's piperia.
- **Occurrences comparable to control sites** - Success will only be achieved if transplantation or enhancement treatment areas contain a percent of cover, density, and percent flowering not significantly different from that found in control sites within adjacent existing piperia populations.
- **Demonstration Period** - Success will only be achieved when the criteria of percent cover, density, and percent flowering are met for three of five successive years starting in the sixth year after initial enhancement or transplantation.
- **"Occupied habitat"** - The definition of what constitutes "occupied habitat" for the purpose of this success criteria shall be determined by the AMT based on the results of a detailed study of the habitat characteristics for Yadon's piperia (see description in the draft TEAM plan) to be conducted in the spring of 2005. This study shall be conducted prior to completion of the final Piperia Plan. The resultant definition will be used to identify the areas containing piperia for the purposes of identifying transplantation and enhancement treatment areas. If an acceptable definition of "occupied habitat" is not developed as a result of the spring 2005 habitat characteristics study, the default definition of "occupied habitat" shall be the piperia occurrence areas identified in the PRDEIR based on the 2004 survey results.

The specific measures used to evaluate the success criteria and these objectives will be further developed within the Piperia Plan. As the Piperia Plan's research and analysis proceeds, the County and AMT will likely develop improved measures to assess how replacement efforts are meeting the primary success criteria and these objectives. The County and the AMT may determine that the objectives should be different than those articulated above based on an expanded understanding of Yadon's piperia.

ENHANCEMENT TREATMENT AREAS

Criteria for Selection - Enhancement activities shall only be conducted on areas that:

- contain extant populations of Yadon's piperia or are adjacent to such areas;
- are owned by the applicant or the Del Monte Forest Foundation;
- are presently preserved, within the applicant's proposed preservation areas, will be preserved prior to commencement of enhancement activities, or are within designated resource management areas.

Enhancement Treatment Areas. Additional areas for enhancement were identified including the existing lots in Area J, Huckleberry Hill/SFB Morse Preserve. Monterey pine forest areas outside of identified piperia areas at the Old Capitol site were added to the list of enhancement treatment areas.

It should be noted that the acreage estimation presented herein is based on identification of potential impediments and should be considered preliminary. Actual definitions of suitable enhancement areas for the purposes of this plan would be identified following the proposed efforts in the draft TEAM Plan Section 4 and 5.

Habitat might also be enhanced by removing more widespread impediments to Yadon's piperia populations including deer herbivory, European annual grasses (e.g. *Briza maxima*), excess duff accumulation, and other currently unknown impediments that may exist throughout the plant's distribution and thus add greatly to acreage estimates. Determinations of impediments will be a main focus of the habitat characterization and other studies outlined in Section 5 of the draft TEAM plan. Upon identification of other enhancement measures, the sites below will be reassessed for enhancement opportunities and priorities evaluated.

The following are descriptions of the current enhancement opportunities identified in each site.

- **Old Capitol -** In the absence of directed management and access controls, Yadon's piperia habitat has been degraded. Broom and other invasive species have colonized extensive areas. Large patches of poison oak have become dominant in the understory in areas previously mapped as occupied piperia habitat. Vegetation clearing, unauthorized use (e.g. dumping, homeless encampments, motorized trail bike use) and general lack of focused habitat management have all contributed to the degradation of the Monterey pine forest habitat in formerly mapped piperia areas. All of the 57.3 acres of piperia habitat mapped by Allen (1996) would benefit from enhancement activities. Adjacent areas of undeveloped forest may also be suitable habitat; though no determination has been made of enhancement feasibility in these adjacent areas.

- **Area PQR -** Areas identified as unsuitable habitat for enhancement for the initial screening in PQR include Spruance Meadow (8 acres), and delineated wetland (1.7 acres) and riparian habitats (1.8 acres). There are other areas that may be unsuitable but were not excluded at this time. For instance, PQR contains some very steep slopes leading down into 4 drainages that run north to south through the area. Most of these slopes appear to be unsuitable for Yadon's piperia due to their riparian nature, consisting of a dense understory. There are many patches of dense pine seedlings throughout PQR, some quite large, whose acreage have not been determined and were not included in the unsuitable habitat estimation. On the east side of PQR, along 17 mile drive, there is a large area, dominated by coast live oak, where there is a dense understory of *Mimulus*

aurantiacus and poison oak, appearing unsuitable for Yadon's piperia. Only scattered patches of "hot spots" of invasive non-native species occur over this large, relatively intact block of Monterey pine forest habitat. French broom has become established in actual and potential piperia habitat in the easterly portion of the area to the south of the adjacent residential neighborhoods along Sunset Lane and Sunridge Road. Another hot spot of invasive non-native species occurs as an approximately 30-foot wide linear strip along the unpaved fire road from the most northerly point of the area just east of the Rhonda Road/Mora Lane/Sunridge Road neighborhoods. These and other small hot spots of non-native invasive species and disturbed areas cover an estimated 6% of Area PQR.

- **Area I-1 -** There are two drainages that run east to west at the southern portion of this site. A one-hundred-foot-wide corridor associated with each of these drainages was assumed to be unsuitable habitat (total of 5.3 acres). The 0.7-acre area of open meadow in the southeast portion of the site where Hickman's onion occurs was also assumed to be unsuitable habitat. The primary hot spots of invasive non-native species in this area occur along the drainages toward the southerly portion of the site and in a relatively large, isolated patch along Lopez Road near its intersection with Forest Way. Broom, acacia and pampas grass have extensively colonized drainages. Though these areas have limited potential to support piperia, eradication of broom and acacia in the patch along Lopez Road and elsewhere could provide an expansion area for piperia over an estimated 9% of Area I-1.

- **Area G -** This area is largely occupied by dense shrubs with few openings, mostly shaggy barked manzanita and huckleberry. On the sloping east side of this site, a large stand of *C. nutkaensis* has established in an area that could otherwise be considered potential habitat for Yadon's piperia. Approximately 16 acres in the northern third of Area G burned in 1987 and currently supports dense stands of Monterey pine seedlings as well as Monterey clover. This area was considered unsuitable habitat at this time but could become suitable over time once the trees mature and the understory develops. Much of Area G is dominated by a dense understory of shrubby species (or regenerating forest from the 1987 burn) that would probably require thinning to create openings suitable for expansion of piperia. However, large patches of acacia also occur, especially along the fire road leading into the site from Sunridge Road. It is possible that some of this area could be recovered for piperia expansion by the elimination of invasive non-native species.

- **Area H -** This area contains large polygons of potential Yadon's piperia habitat. There are some areas of dense shrubs that tend to occur around the large drainage running through the middle of the site. These areas may not be suitable for enhancement but they were not included as unsuitable habitat at this time. Unsuitable habitat consists of 1.3 acres of wetlands. Patches of acacia and broom are scattered through Area H and could be eliminated to encourage piperia expansion into those areas. An unpaved portion of Spruance Road also bisects the site. If the road were reduced to a twenty-foot width, an average of fifty feet for the entire length could be available for habitat restoration and enhancement. These activities combined could result in enhancement over an estimated 8% of the acreage of Area H.

- **Area B Preserve -** This is the only site identified as potentially suitable for enhancement that contains Baywood Sands. Although Yadon's piperia occurs here, it is not abundant and that may be a factor of the Baywood Sands as well as the dense stands of blackberry and other shrubs common throughout this site. Specific impediments have not been identified at this site nor the potential area for enhancement.

- **Area J -** Wetland and riparian areas were excluded at this site. There may be less area suitable for enhancement due to the presence of dense blackberry and *C. nutkaensis* areas. Specific impediments have not been identified at this site; nor potential area for enhancement.

- **Area L Preserve -** There is about 0.5 acre of remnant dune in the western portion of Area L that was excluded from potentially suitable habitat. The site also contains wetland and riparian areas that were excluded. Specific impediments have not been identified at this site; nor potential area for enhancement.

- **Huckleberry Hill Natural Area/S.F.B. Morse Preserve** - This area contains a sizeable piperia population (7,578 individuals; Allen 1996). Monterey pine forest coverage is around 200 acres. This area has not been assessed for unsuitable or suitable habitat. The site contains wetland and riparian areas, as well as areas containing other sensitive plants that may not be suitable for enhancement. Specific impediments have not been identified at this site nor have potential areas for enhancement.

Table 1. Required Enhancement Areas (acres)

Site ID	Total Site (1)	Existing Occupied Habitat	Unsuitable habitat	Potential Adjacent Habitat (2)	Potential Suitable for Enhancement (%)	Total (acres)
Required Enhancement Area in the Del Monte Forest						
Area PQR	233.1	45.9	11.5	175.7	6	13.8
Area I-1	38.2	13.9	6.0	18.3	9	3.1
Area G	47.9	11.8	16.0	20.2	2	0.8
Area H	53.2	9.1	1.3	42.8	8	4.1
Area B	22.1	0.6	2.6	19.0	*TBD*	*TBD*
Area J	9.4	2.6	1.9	4.9	*TBD*	*TBD*
Area L	18.2	0.5	1.1	16.5	*TBD*	*TBD*
HHNA/SFB	~20*0*	*TBD*	*TBD*	*TBD*	*TBD*	*TBD*
					Subtotal	>21.8
Required Enhancement Area Outside the Del Monte Forest						
Old Capitol	74.6 (3)	57.3	0.0 (3)	17.3	100	74.6
					Subtotal	>74.6

NOTES:

1 Total site acreage = acreage of Monterey pine forest coverage

2 Identification of potential adjacent habitat for Yadon's piperia is preliminary at this time, given that appropriate habitat characteristic studies have not yet been completed.

3 Acreage identified is area of undeveloped Monterey pine forest coverage at the site, entire site is approximately 135 acres; no field identification of unsuitable habitat has been conducted