South Orange County Transportation Infrastructure Improvement Project (SOCTIIP)

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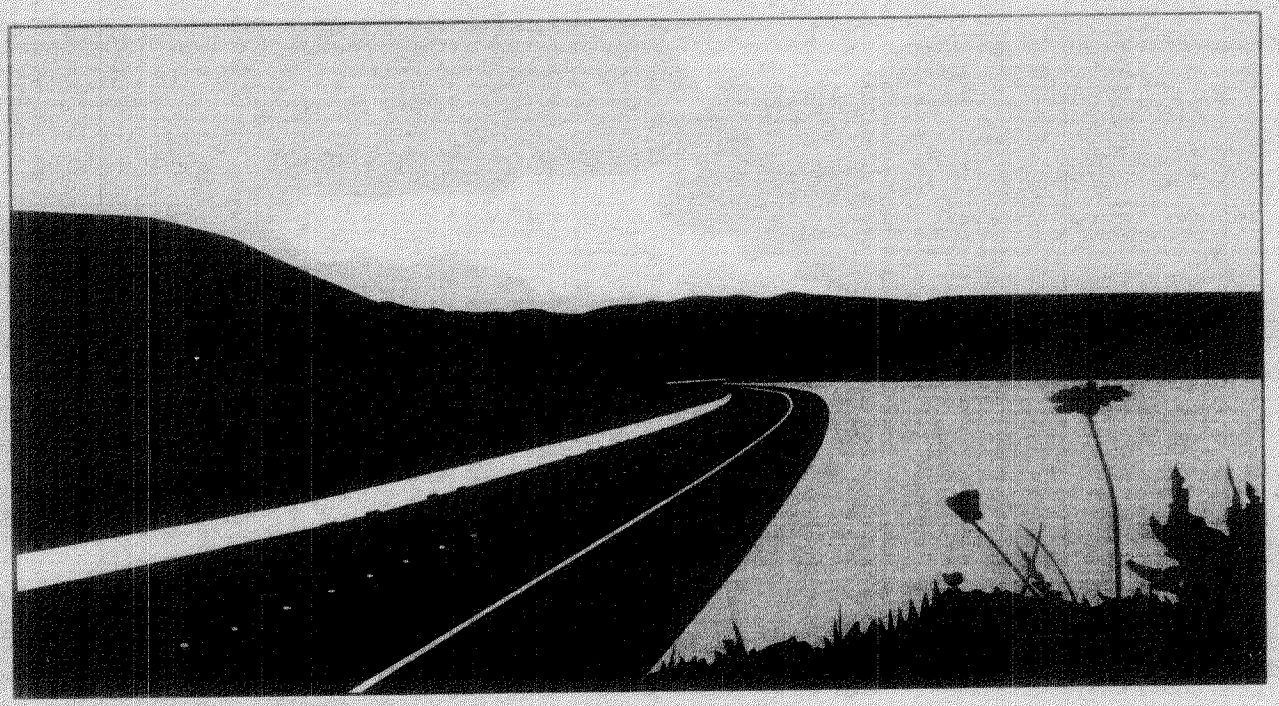

Volume VII

Final Subsequent Environmental Impact Report

Response to Comments

December 2005

Transportation Corridor Agencies

U.S. Department of Transportation
Federal Highway Administration

Attachment 1

Supplemental Noise Analysis

Supplemental
Noise Assessment
For:
South Orange County Transportation Infrastructure Improvement Project (SOCTIIP)
Talega Community

Prepared For:

Transportation Corridor Agency

Macie Cleary-Milan, Deputy Director, Environmental and Planning
125 Pacifica
Irvine, CA 92618-3406

Submitted By:

Mestre Greve Associates

Fred Greve P.E.
Matthew B. Jones P.E.
27812 El Lazo
Laguna Niguel, CA 92677
949•349•0671
Fax 949•349•0679

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SECTION 1.0
INTRODUCTION

The South Orange County Transportation Infrastructure Improvement Project (SOCTIIP) is located in south-central and southwestern Orange County and northern San Diego County. A detailed assessment of the potential noise impact from the five primary build alternatives and 17 variations of the primary alternatives was completed at the end of 2003 ("Noise Assessment for South Orange County Transportation Infrastructure Improvement Project (SOCTIIP), County of Orange" by Mestre Greve Associates, December 7, 2003). Several of the proposed alternatives ran to the east of the Talega community located in northeast San Clemente. Since the completion of the Noise Assessment several new phases of the Talega Community have begun construction that were not analyzed.

The purpose of this assessment is to assess the potential noise impacts of three alternatives, Far East Corridor-Modified (FEC-M), Far East Corridor-West (FEC-W) and Alignment 7-Far East Crossover-Modified (A7C-FEC-M) on these newly developed areas of the Talega Community. Section 2.0 of the EIS/SEIR prepared for the project provides a detailed description of the alternatives. Background information on noise, noise assessment metrics and applicable noise standards are presented in Sections 3.1 and 3.2. Noise impacts resulting from the implementation of the proposed FEC-M, FEC-W, and A7C-FEC-M SOCTIIP alternatives on the Talega Community are assessed. This analysis addresses noise criteria used to comply with both National Environmental Policy Act (NEPA) noise requirements and California Environmental Quality Act (CEQA) noise requirements. The applicable NEPA standards are defined by the Federal Highway Administration (FHWA). FHWA noise criteria are in terms of peak hour Equivalent Noise Level (Leq). The applicable CEQA noise criteria are in terms of the local municipalities' noise standards. The County of Orange and affected cities have established noise standards in term of the Community Noise Equivalent Level (CNEL) metric. The existing environment, impacts and noise abatement in terms of FHWA standards are discussed in Sections 3 (Existing Environment), 4.0 (Potential Noise Impacts), and 5 (Noise Abatement Measures). The existing environment, impacts and noise mitigation in terms of CNEL standards are discussed in Sections 6.1 (Existing Noise Levels), 6.3 (Potential Noise Impacts), 6.4 (Cumulative Noise Impacts) and 6.5 (Noise Mitigation).

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SECTION 2.0
DESCRIPTION OF THE ALTERNATIVES

2.1 INTRODUCTION

A discussion of the alternatives for the South Orange County Transportation Infrastructure Improvement Project (SOCTIIP) is presented in Section 2.0 of the Noise Assessment prepared for the SOCTIIP Project ("Noise Assessment for South Orange County Transportation Infrastructure Improvement Project (SOCTIIP), County of Orange" by Mestre Greve Associates, December 7, 2003). A detailed discussion of the project alternatives is provided in the Project Alternatives Technical Report prepared for the SOCTIIP EIS/SEIR.

Figure 2.1-1 shows the study area for this supplemental noise assessment and the location of three proposed alignments, Far East Corridor-Modified (FEC-M), Far East Corridor-West (FEC-W) and Alignment 7-Far East Crossover-Modified (A7C-FEC-M), assessed in this study. The FEC-W and A7C-FEC-M share the same alignment through the study area. All three alignments merge to one at the south end of the study area.

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Analysis Alignments Through Talega Community Study Area

SECTION 3.0
EXISTING ENVIRONMENT

3.1 BACKGROUND ON NOISE

Sound is technically described in terms of the loudness (amplitude) of the sound and frequency (pitch) of the sound. The standard unit of measurement of the loudness of sound is the decibel (dB). Decibels are based on the logarithmic scale. The logarithmic scale compresses the wide range in sound pressure levels to a more usable range of numbers in a manner similar to the Richter scale used to measure earthquakes. In terms of human response to noise, a sound 10 dB higher than another is judged to be twice as loud; and 20 dB higher four times as loud; and so forth. Everyday sounds normally range from 30 dB (very quiet) to 100 dB (very loud).

Because the human ear is not equally sensitive to sound at all frequencies, a special frequency-dependent rating scale was developed to relate noise to human sensitivity. The A-weighted decibel scale (dBA) performs this compensation by discriminating against frequencies in a manner approximating the sensitivity of the human ear. Community noise levels are measured in terms of dBA. Figure 3.1-1 provides examples of various noises and their typical A-weighted noise levels. Figures and Tables are provided following the last page of text in this section.

Sound levels decrease as a function of distance from the noise source as a result of wave divergence, atmospheric absorption and ground attenuation. As the sound wave form travels away from the noise source, the sound energy is dispersed over a greater area, thereby dispersing the sound power of the wave. Atmospheric absorption also influences the noise levels that are received by the observer. The greater the distance traveled, the greater the influence and the resultant fluctuations. The degree of absorption is a function of the frequency of the sound as well as the humidity and temperature of the air. Turbulence and gradients of wind, temperature and humidity also play an important role in determining the degree of attenuation. Intervening topography can also have a substantial effect on the effective perceived noise levels.

Noise has been defined as unwanted sound and is known to have several adverse effects on people. From these known effects of noise, criteria have been established to help protect public health and safety and prevent disruption of certain human activities. These criteria are based on such known impacts of noise on people as hearing loss, speech interference, sleep interference, physiological responses and annoyance, as follows:

> Hearing Loss is not a concern in community noise situations along highways. The potential for noise induced hearing loss is more commonly associated with occupational noise exposures in heavy industry or very noisy work environments. Noise levels in neighborhoods are not sufficiently loud to cause hearing loss.
>
> Speech Interference is one of the primary concerns in environmental noise problems. Normal conversational speech is in the range of 60 to 65 dBA and any noise in this range or louder may interfere with speech. There are specific methods of describing speech interference as a function of the distance between the speaker and the listener and the speaker's voice level.
>
> Sleep Interference is a major noise concern for traffic noise. Sleep disturbance studies have identified interior noise levels that have the potential to cause sleep disturbance.

Sleep disturbance does not necessarily mean awakening from sleep, but can refer to altering the pattern and stages of sleep.

Physiological Responses are those measurable effects of noise on people that are realized as changes in pulse rate, blood pressure, etc. While such effects can be induced and observed, the extent to which these physiological responses cause harm or are a sign of harm is not known.

Annoyance is the most difficult of all noise responses to describe. Annoyance is a very individual characteristic and can vary widely from person to person. What one person considers tolerable can be quite unbearable to another of equal hearing capability.

3 1.1 NOISE ASSESSMENT METRICS

The description, analysis and reporting of community noise levels around communities is made difficult by the complexity of human response to noise and the variety of noise metrics developed for describing noise impacts. Each metric attempts to quantify noise levels with respect to community response. Most metrics use the A-weighted noise level to quantify noise impacts on humans. A-weighting is a frequency weighting that accounts for human sensitivity to different frequencies.

Noise metrics can be divided into two categories: single event and cumulative. Single event metrics describe the noise levels from an individual event such as an aircraft flyover or perhaps a heavy equipment pass-by. Cumulative metrics average the total noise over a specific time period, which is typically one hour or 24 hours for community noise. For this study, cumulative noise metrics were used.

Several rating scales have been developed for the measurement of community noise. These account for:

(1) The parameters of noise that have been shown to contribute to the effects of noise on man.

(2) The variety of noises found in the environment.

(3) The variations in noise levels that occur as a person moves through the environment.

(4) The variations associated with the time of day.

They are designed to account for the known health effects of noise on people described previously. Based on these effects, the observation has been made that the potential for a noise to impact people is dependent on the total acoustical energy content of the noise. A number of noise scales have been developed to account for this observation. Two of the predominant noise scales are the: Equivalent Noise Level (Leq) and the Community Noise Equivalent Level (CNEL). Day-Night Noise Level (LDN) and L(%) are also used in community noise assessment. These metrics are described below:

Leq is the sound level corresponding to a steady-state sound level containing the same total energy as a time-varying signal over a given sample period. LEQ is the "energy" average noise level during the time period of the sample. LEQ can be measured for any time period, but is typically measured for one hour. This one hour noise level can also be referred to as the Hourly Noise Level (HNL). It is the energy sum of all the events and background noise levels that occur during that time period.

CNEL is the predominant rating scale now in use in California for land use/noise compatibility assessments. The CNEL scale represents a time weighted, 24-hour average noise level based on the A-weighted decibel. Time weighted refers to the fact that noise that occurs during certain sensitive time periods is penalized for occurring at these times. The evening time period (7 PM to 10 PM) penalizes noises by 5 dBA, while nighttime (10 PM to 7 AM) noises are penalized by 10 dBA. These time periods and penalties were selected to reflect people's increased sensitivity to noise during these time periods. A CNEL noise level may be reported as a "CNEL of 60 dBA," "60 dBA CNEL," or simply "60 CNEL." Typical noise levels in terms of the CNEL scale for different types of communities are presented in Figure 3.1-2.

LDN, the day-night scale, is similar to the CNEL scale except that evening noises are not penalized. It is a measure of the overall noise experienced during an entire day. Time-weighted refers to the fact that noise that occurs during certain sensitive time periods is penalized for occurring at these times. In the LDN scale, those noise levels that occur during the night (10 PM to 7 AM) are penalized by 10 dB. This penalty attempts to account for increased human sensitivity to noise during this quieter period of a day, where sleep is the most probable activity.

L(%) is a statistical method of describing noise which accounts for variance in noise levels throughout a given measurement period. L(%) is a way of expressing the noise level exceeded for a percentage of time in a given measurement period. For example, because five minutes is 25% of 20 minutes, L(25) is the noise level that is equal to or exceeded for five minutes in a twenty minute measurement period. L(%) is used for most noise ordinance standards. For example, most daytime city, state and county noise ordinances use an ordinance standard of 55 dBA for 30 minutes per hour or an L(50) level of 55 dBA. In other words, the noise ordinance states that no noise level should exceed 55 dBA for more that fifty percent of a given period.

3.2 NOISE CRITERIA

3 2.1 TRAFFIC NOISE

3.2.1.1 FHWA/Caltrans Leq(h) Criteria

The Federal Highway Administration (FHWA) has adopted and published Noise Abatement Criteria (NAC) for highway construction projects. These standards are published in the "Federal Aid Highway Program Manual of Federal Highway Administration" Volume 7, Chapter 7, Section 2, entitled "Procedures for Abatement of Highway Traffic Noise and Construction Noise," September 18, 1982. The standards are also codified in Code of Federal Regulations (23 C.F.R. 772). The following noise standards are taken from the FHWA PPM 772 (also 23 C.F.R. 772).

> *"NOISE STANDARDS. The highway traffic noise prediction requirements, noise analyses, noise abatement criteria, and requirements for informing local officials in this regulation constitute the noise standards mandated by 23 U.S.C. 109(i). All highway projects which are developed in conformance with this regulation shall be deemed to be in conformance with this directive shall be deemed to be in conformance with the Federal Highway Administration (FHWA) noise standards"*

The NAC specified by the FHWA have been adopted by Caltrans. Caltrans' NAC are contained in their "Traffic Noise Analysis Protocol For New Highway Construction and Reconstruction Projects" (October 1998) and are presented here in Table 3.2-1. NAC apply to various land uses as indicated in Table 3.2-1. For interior areas, the criteria assume that typical wood frame homes provide 10 dBA noise reduction (outdoor to indoor) with windows open and 20 dBA reduction with windows closed.

The FHWA/Caltrans NAC are only applicable to areas along new roads constructed by the project or existing roads that would be modified by the project (i.e. addition of lanes). The NAC are not assessed along existing roadways that would not be physically altered by the project. In terms of the FHWA/Caltrans NAC, when the predicted future with project noise levels approach or exceed the NAC for uses along new roads constructed by the project or existing roads that would be modified by the project (i.e. addition of lanes), noise abatement measures (e.g. construction of a noise barrier) must be considered.

The NAC are in terms of the worst hourly Leq traffic noise impact on a regular basis for the design year. Approaching the NAC is considered as a noise level within one dB of the NAC. For residential areas, the NAC is 67 dBA Leq(h). Noise levels of 66 dBA in these areas Leq(h) are considered approaching the NAC.

Even if the predicted noise level does not approach or exceed the NAC, traffic noise impacts can occur when the with project noise levels substantially exceed the existing noise levels. Caltrans has established a substantial increase to be a 12 dBA increase in the peak hour Leq noise level.

3.2.1.2 Local Municipality CNEL Criteria

The operational noise standards for the Local Municipalities are defined in their Noise Elements of the General Plan. The County of Orange and all of the municipalities have established an exterior residential CNEL noise standard of 65 CNEL. The County has not established an applicable noise standard relating to parks. However, all of the Cities within the project area have established a 65 CNEL noise standard for parks. In some Cities it is only applicable at picnic areas and in others it is applicable at picnic areas, playgrounds and areas of frequent human activity. For the purposes of this analysis we will apply the broader scope of the standard and evaluate noise levels at potentially impacted park picnic areas, playgrounds and areas of frequent human activity.

3.3 EXISTING NOISE LEVELS

Existing noise levels in the study area in terms of the National Environmental Policy Act (NEPA) criteria are described in this Section. Section 3.3.1 presents the location and description of the noise sensitive receptors analyzed in this report. Section 3.3.2 presents the results of noise measurements made at one of these receptors. Noise measurements were not made at all analysis receptors. The ambient noise levels in the study area are relatively homogeneous. The primary sources of noise are background traffic and occasional local traffic which generate similar noise levels throughout the study area. Areas away from the primary local noise source, traffic on Avenida Pico, experience noise levels somewhat lower than areas closer to the road. The noise level measured at the single location was used to estimate noise levels throughout the study area. Existing noise levels in terms of California Environmental Quality Act (CEQA) criteria are presented in Section 6.1.

3 3.1 NOISE SENSITIVE RECEPTORS

Figure 3.3-1 shows the locations of the representative noise receptors that were assessed in this supplemental noise study. All of the receptors represent residential uses except 063h, which is located at a park. All of the receptors are considered Activity Category B in terms of the FHWA/Caltrans Noise Abatement Criteria.

3 3.2 MEASURED EXISTING NOISE LEVELS

Measurements of ambient noise levels were conducted at 74 receptors for the SOCTIIP Noise assessment. Measurements were performed at one location in the study area for this report. The intent of these measurements was to document the existing background noise levels in the areas surrounding the SOCTIIP build alternatives. The ambient noise levels in the study area are relatively homogeneous. The primary sources of noise are background traffic and occasional local traffic which generate similar noise levels throughout the study area. Areas away from the primary local noise source, traffic on Avenida Pico, experience noise levels somewhat lower than areas closer to the road. The noise level measured at the single location was used to estimate noise levels throughout the study area.

3.3.2.1 Methodology

The sound level meters used were Brüel and Kjær 2236 Sound Level Meters. These meters satisfy American National Standards Institute (ANSI) Type 1 specifications and are certified annually to ensure they remain within specifications. The meters were calibrated before and after each measurement using acoustical calibrators. The acoustical calibrators are calibrated annually with calibration traceable to the National Institute of Standards and Technology. Meteorological conditions including wind speed, direction, temperature and humidity were recorded during each measurement. All the measurements were performed when the average wind speed was less than five meters per second (m/s) (11 miles per hour (mph)).

For the site in the project study area, noise measurements were made for 15 minute periods. Measurements at the receptor were repeated at two separate times to ensure the noise environment in the area is accurately represented.

3.3.2.2 Results

The results of the noise measurements for the site in the study area for this report are presented in Table 3.3-1. The Receptor ID, description and existing land use are presented in the first three columns, respectively. The next two sets of two columns present the date and Leq noise levels of each measurement at the receptor. The ambient noise levels in the study area are relatively homogeneous. The primary sources of noise are background traffic and occasional local traffic which generate similar noise levels throughout the study area. Areas away from the primary local noise source, traffic on Avenida Pico, experience noise levels somewhat lower than areas closer to the road. The noise level measured at the single location was used to estimate noise levels throughout the study area.

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SOUND LEVELS AND LOUDNESS OF ILLUSTRATIVE NOISES IN INDOOR AND OUTDOOR ENVIRONMENTS

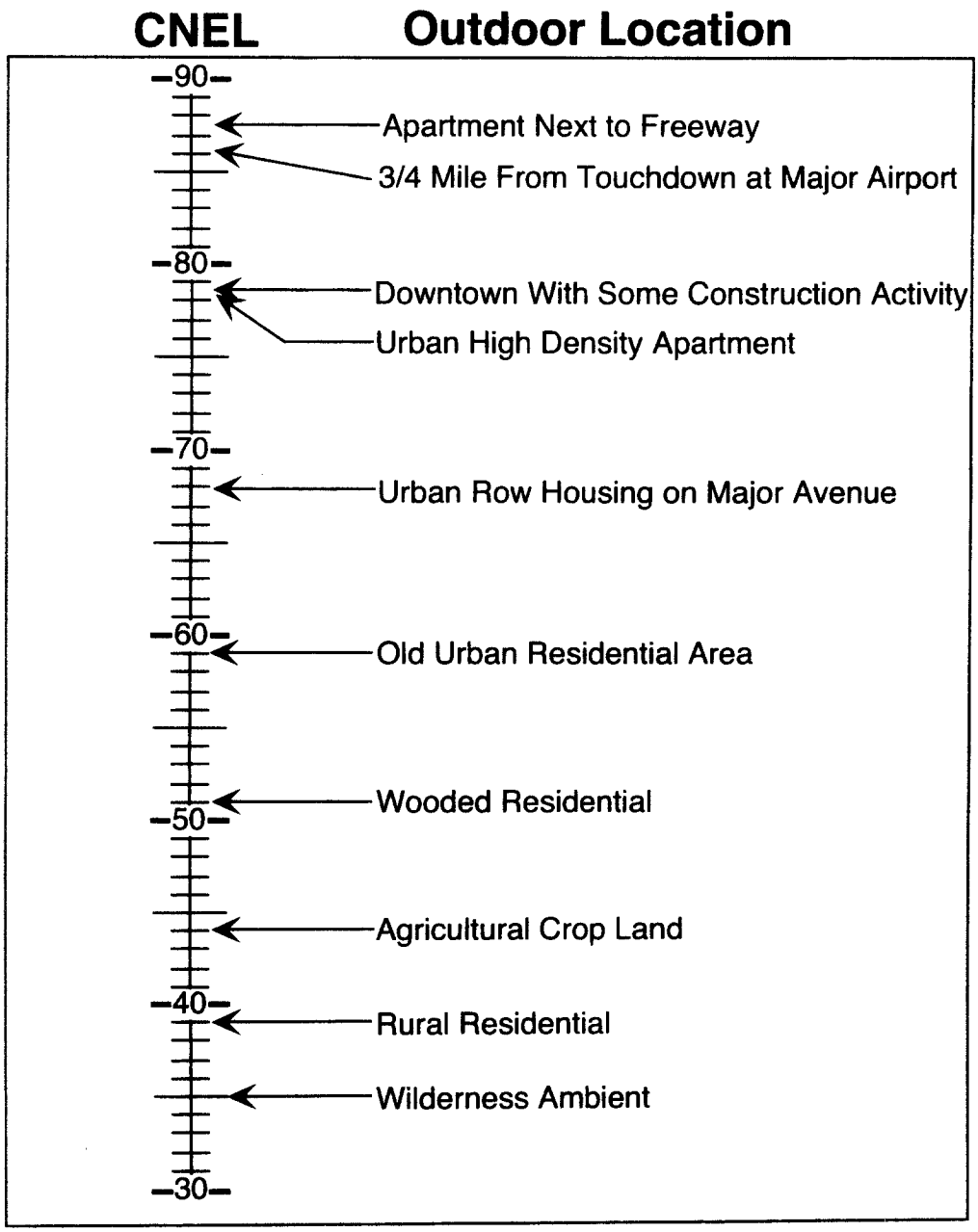
Numbers in Parentheses are the A-Scale Weighted Sound Levels for that Noise Event

dB(A)	OVER-ALL LEVEL Sound Pressure Level Reference: 0.0002 Microbars	COMMUNITY□ (Outdoor)	HOME OR INDUSTRY	LOUDNESS[1] Human Judgement of Different Sound Levels
130		Military Jet Aircraft Take-Off From Aircraft Carrier With After-burner at 50 Ft. (130)	Oxygen Torch (121)	120 dB(A) 32 Times as Loud
120 110	UNCOMFORTABLY LOUD	Turbo-Fan Aircraft at Take Off Power at 200 Ft. (110)	Riveting Machine (110) Rock-N-Roll Band (108-114)	110 dB(A) 16 Times as Loud
100		Jet Flyover at 1000 Ft. (103) 707, DC-8 at 6080 Ft. Before Landing (106) Bell J-2A Helicopter at 100 Ft. (100)		100 dB(A) 8 Times as Loud
90	VERY LOUD	Power Mower (96) 737, DC-9 @ 6080 Ft. Before Landing (97) Motorcycle @25 Ft. (90)	Newspaper Press (97)	90 dB(A) 4 Times as Loud
80		Car Wash @ 20 Ft. (89) Prop. Airplane Flyover @ 1000 Ft. (88) Diesel Truck, 40 MPH @ 50 Ft. (84) Diesel Train, 45 MPH @ 100 Ft. (83)	Food Blender (88) Milling Machine (85) Garbage Disposal (80)	80 dB(A) 2 Times as Loud
70	MODERATELY LOUD	High Urban Ambient Sound (80) Passenger Car, 65 MPH @ 25 Ft. (77) Freeway @ 50 Ft. From Pavement Edge, 10:00 AM (76 +or- 6)	Living Room Music (76) TV-Audio, Vacuum Cleaner	70 dB(A)
60		Air Conditioning Unit @ 100 Ft. (60)	Cash Register @ 10 Ft. (65-70) Electric Typewriter @ 10 Ft. (64) Dishwasher (Rinse) @ 10 Ft. (60) Conversation (60)	60 dB(A) 1/2 as Loud
50	QUIET	Large Transformers @ 100 Ft. (50)		50 dB(A) 1/4 as Loud
40		Bird Calls (44) Lower Limit Urban Ambient Sound (40)		40 dB(A) 1/8 as Loud
20	JUST AUDIBLE	Desert at Night (dB[A] Scale Interrupted)		
10	THRESHOLD OF HEARING			

1. Compared to 70 dBA sound level

Source: Reproduced from Melville C. Branch and R. Dale Beland, "Outdoor Noise in the Metropolitan Environment," Published by the City of Los Angeles, 1970, p.2.

Typical A-Weighted Noise Levels



Source: United States Environmental Protection Agency, "Impact Characterization of Noise Including Implications of Identifying and Achieving Levels of Cumulative Noise Exposure," EPA Report NTID 73.4, 1973.

Typical Outdoor Noise Levels

Table 3.2-1
FHWA/Caltrans Noise Abatement Criteria

Activity Category	NAC, Hourly A-Weighted Noise Level, dBA Leq(h)	Description of Activities
A	57 Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 Exterior	Picnic Areas, recreation areas, playgrounds active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals
C	72 Exterior	Developed lands, properties or activities not included in Categories A or B above.
D	--	Undeveloped Lands
E	52 Interior	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

Source: Caltrans Traffic Noise Analysis Protocol For New Highway Construction and Reconstruction Projects, October, 1998

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Talega Community
Noise Analysis Receptor Locations

Table 3.3-1
Noise Measurement Results

ID	Description	Land Use	Date	Leq (dBA)	Date	Leq (dBA)
063	302 Corte Mira Vista	Residential	31-May-01	51	1-Jul-01	50

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SECTION 4.0
POTENTIAL NOISE IMPACTS

Potential noise impacts of the South Orange County Transportation Infrastructure Improvement Project (SOCTIIP) FEC-M, FEC-W, and A7C-FEC-M alternatives on the Talega Community in terms of the Federal Highway Administrations' (FHWA) National Environmental Policy Act (NEPA) criteria are presented in this Section. Noise abatement measures are presented in Section 5.0. Section 6.0 analyzes the potential noise impacts of these SOCTIIP alternatives in terms of California Environmental Quality Act (CEQA) criteria.

4.1 NOISE IMPACT CRITERIA

4 1.1 FHWA/CALTRANS TRAFFIC NOISE CRITERIA

The Federal Highway Administration (FHWA)/Caltrans criteria are only applicable to areas along new roads constructed by the SOCTIIP alternatives or existing roads that would be modified by the SOCTIIP alternatives (i.e. addition of lanes). In terms of the FHWA/Caltrans criteria, noise impacts occur when the predicted future with SOCTIIP alternatives noise levels approach or exceed the noise abatement criteria (NAC) for uses along new roads constructed by the SOCTIIP alternatives or existing roads that would be modified by the project (i.e. addition of lanes). The NAC are in terms of the worst hourly Leq traffic noise impact on a regular basis for the design year. The NAC were presented previously in Table 3.2-1 ("FHWA/Caltrans Noise Abatement Criteria"). Approaching the NAC is considered as a noise level within one dB of the NAC. For residential areas, the noise abatement criterion is 67 dBA Leq(h). Noise levels of 66 dBA Leq(h) in these areas are considered approaching the NAC.

Even if the predicted noise level does not approach or exceed the NAC, traffic noise impacts can occur when the with project noise levels substantially exceed the existing noise levels. Caltrans has established a substantial increase to be a 12 dBA increase in the peak hour Leq noise level.

4.2 LONG TERM NOISE IMPACTS

In this section the long term noise impacts resulting from the implementation of the project alternatives are assessed. Future traffic noise levels at receptors representing noise sensitive land uses in the study area are projected through traffic noise modeling described below. These noise levels are compared to the FHWA/Caltrans criteria presented previously in Section 3.2.2. For receptors where the future with project noise level approaches or exceeds the NAC or is 12 dB or more than the existing levels, noise abatement must be considered. Noise abatement is considered in Section 5.0 for these receptors.

4 2.1 METHODOLOGY

The primary purpose of this analysis is to identify all potential noise impacts and allow comparison of the noise impacts among the alternatives. For whichever alternative is selected, a Final Noise Analysis (usually performed as a part of final engineering) will need to be prepared to determine the exact heights and extent of noise barriers required. This is required for two reasons. First, final design and engineering for whichever alternative is selected could change the roadway configuration (e.g. horizontal or vertical alignment) that could alter the location and height requirements for the noise barriers. Second, this analysis was performed at a level of

detail adequate for determination of noise impacts and estimates of required sound abatement. However, it was not performed at a level of detail to allow for detailed design and final determination of the locations and heights of the noise barriers. Because of potential changes in the plans at final engineering/design the detailed analysis that will be performed as a part of the Final Noise Analysis is best left until construction level project designs are available.

The Final Noise Analysis will need to be prepared when appropriately detailed and finalized mapping is available for whichever alternative is selected. Topographic plans showing the alternative and potentially affected residences and other noise sensitive uses will be required for that analysis. The plans should have a scale of 1:500 and a 0.5 meter contour interval. Noise levels should be analyzed at all land uses with sensitive receptors potentially impacted by the selected alternative. Noise measurements and locations should be evaluated for any changes in their vicinity and re-taken if required. Any model calibration will need to be redone with those new measurements.

4.2.1.1 Noise Model

Caltrans requires the use of the SOUND32 or LeqV2 computer programs to model traffic noise levels. Both SOUND32 and LeqV2 were developed by Caltrans and are based on the FHWA's Highway Traffic Noise Model (FHWA-RD-77-108). Title 23, United States Code of Federal Regulations (CFR), Part 772 specifies the federal requirements for highway noise assessments. 23 CFR 772 only requires the use of a model that is consistent with the methodology presented in the FHWA model. SOUND32 with the SOUND2000 front end was used for modeling noise levels along the corridor build alternatives.

For all noise modeling, the California Vehicle Noise (Calveno) Reference Energy Mean Emission Levels (REMELS) were utilized. The REMELS are the starting point of the FHWA-RD-77-208 noise model. They define the noise level generated by an average vehicle of the type auto, medium truck or heavy truck. REMELS are the speed dependent energy average A-weighted maximum pass-by noise level generated by a defined vehicle type (auto, medium truck or heavy truck), as measured by a microphone at 15 meters (m) (50 feet (ft)) from the centerline of travel (traffic lane) at a height of 1.5 m (5 ft). The Calveno REMELS were developed by Caltrans and meet the requirements of 23 CFR 772, the federal regulation applicable to highway noise assessments.

4.2.1.2 Traffic Data Used For Noise Modeling

Section 2.3 of Caltrans' Traffic Noise Analysis Protocol requires one to "Predict traffic noise levels using traffic characteristics that will yield the worst hourly traffic noise impact on a regular basis for the design year." While not specifically designated, the design year is typically considered 20 years in the future. Level of Service (LOS) C conditions will result in the highest noise levels (peak noise hour) the corridor alternatives. LOS C conditions result in the greatest number of vehicles traveling without congestion. At worse LOS slowing results in lower noise levels an at better LOS fewer vehicles results in lower noise levels.

Traffic noise levels from the SOCTIIP Corridor alternatives were modeled using the traffic parameters presented in Table 4.3-1. A truck mix of 3% medium trucks and 3% heavy trucks was used. This information is based on data collected on existing SR241 obtained from the Transportation Corridor Agencies.

4 2.2 MODELED NOISE LEVELS FOR THE SOCTIIP ALTERNATIVES

Tables 4.2-2 and 4.2-3 present future with project noise levels at the receptors for each of the initial and ultimate corridor build alternatives (Far East Corridor-Modified (FEC-M), Far East Corridor-West (FEC-W), and Alignment 7 Corridor-Far East Crossover-Modified (A7C-FEC-M)). For each receptor the FHWA/Caltrans NAC and activity category are presented along with the existing noise level. The existing noise level is based on the measured existing noise level presented in Table 3.3-1. For receptors further away from Pico compared to Receptor 063c, the location where the existing noise measurement was performed, the existing noise levels were estimated to be approximately 5 dB lower than those measured at Receptor 063c. This level is consistent with existing noise levels measured in the area away from arterial roads. For each of the project alternatives, the future with project noise level is presented along with the increase over existing conditions, in parenthesis. Noise levels and increases where the noise level approaches or exceeds the NAC or exceeds the existing noise level by 12 dB or more are shown in bold.

4.2.2.1 FEC-M-Ultimate Alternative

Table 4.2-2 shows that the FEC-M-Ultimate Alternative is projected to impact six of the 55 receptors analyzed. These six receptors represent approximately 55 residences. The impacts at three of these receptors (Receptors 063a, 063b, and 063o) are due solely to the increases in noise levels resulting from the project. Noise abatement will need to be considered for the areas represented by all six of these receptors with the FEC-M-Ultimate Alternative.

For illustrative purposes Figure 4.2-1 presents the peak hour Leq(h) noise contours in the analysis area with the FEC-M-Ultimate Alternative without any mitigation.

4.2.2.2 FEC-M-Initial Alternative

Table 4.2-3 shows that the FEC-M-Initial Alternative would impact five of the six receptors impacted by the FEC-M-Ultimate Alternative. While noise levels along this corridor are slightly lower under the Initial Alternative compared to the Ultimate Alternative, the decreases only eliminate impacts at one receptor (063o). Noise abatement will need to be considered for the areas represented by all five of these receptors with the FEC-M-Initial Alternative.

For illustrative purposes Figure 4.2-3 presents the peak hour Leq(h) noise contours in the analysis area with the FEC-M-Initial Alternative without any mitigation.

4.2.2.3 FEC-W-Ultimate Alternative

Table 4.3-2 shows that the FEC-W-Ultimate Alternative is projected to impact seven of the 55 receptors analyzed. These seven receptors represent approximately 55 residences. The impacts at four of these receptors (Receptors 063a, 063b, 063o and 063p) are due solely to the increases in noise levels resulting from the project. Noise abatement will need to be considered for the areas represented by all seven of these receptors with the FEC-W-Ultimate Alternative.

For illustrative purposes Figure 4.2-2 presents the peak hour Leq(h) noise contours in the analysis area with the FEC-W-Ultimate Alternative without any mitigation.

4.2.2.4 FEC-W-Initial Alternative

Table 4.2-3 shows that the FEC-W-Initial Alternative would impact five of the seven receptors impacted by the FEC-W-Ultimate Alternative. While noise levels along this corridor are slightly lower under the Initial Alternative compared to the Ultimate Alternative, the decreases only eliminate impacts at two receptors (063o and 063p). Noise abatement will need to be considered for the areas represented by all five of these receptors with the FEC-W-Initial Alternative.

For illustrative purposes Figure 4.2-4 presents the peak hour Leq(h) noise contours in the analysis area with the FEC-W-Initial Alternative without any mitigation.

4.2.2.5 A7C-FEC-M-Ultimate Alternative

Table 4.2-2 shows that the A7C-FEC-M-Ultimate Alternative is projected to impact seven of the 55 receptors analyzed. These seven receptors represent approximately 55 residences. The impacts at four of these receptors (Receptors 063a, 063b, 063o and 063p) are due solely to the increases in noise levels resulting from the project. Noise abatement will need to be considered for the areas represented by all seven of these receptors with the A7C-FEC-M-Ultimate Alternative.

For illustrative purposes Figure 4.2-2 presents the peak hour Leq(h) noise contours in the analysis area with the A7C-FEC-M-Ultimate Alternative without any mitigation.

4.2.2.6 A7C-FEC-M-Initial Alternative

Table 4.2-3 shows that the A7C-FEC-M-Initial Alternative would impact five of the seven receptors impacted by the A7C-FEC-M-Ultimate Alternative. While noise levels along this corridor are slightly lower under the Initial Alternative compared to the Ultimate Alternative, the decreases only eliminate impacts at two receptors (063o and 063p). Noise abatement will need to be considered for the areas represented by all five of these receptors with the A7C-FEC-M-Initial Alternative.

For illustrative purposes Figure 4.2-4 presents the peak hour Leq(h) noise contours in the analysis area with the A7C-FEC-M-Initial Alternative without any mitigation.

4.3 CUMULATIVE IMPACTS

The FHWA criteria are based on the peak noise hour, that is, the maximum hourly noise level generated by the highway. The traffic conditions used to calculate the peak hour noise levels for this assessment result in the highest theoretical hourly noise levels that can occur along the road. As discussed in Section 4.2.1.2, the peak noise hour conditions occur when the road experiences the greatest number of cars at free flow conditions. If there are fewer cars at free flow, the noise levels generated by the roadway will be lower. Adding more cars results in congestion and slower travel speeds than free flow. These lower travel speeds result in lower noise levels. Therefore, the analysis is independent of how much traffic is actually projected for the roadway. Additional projects would either result in the actual noise levels approaching the conditions modeled for this assessment if the roadway is not congested, or change the amount and/or time of congestion, which does not affect the peak noise hour levels. Therefore, there are no cumulative impacts in terms of FHWA criteria. Cumulative impacts in terms of CEQA criteria are discussed in Section 6.0.

Table 4.2-1
Noise Modeling Traffic Parameters

Parameter	Value
Traffic Volume	1800 vehicles per hour per lane
Auto Speed	105 km/h (65 mph)
Truck Speed	89 km/h (55 mph)
Mixed Flow Lane Truck Percentage	3% Medium Trucks 3% Heavy Trucks
HOV Lane Truck Percentage	0%

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Table 4.2-2
Refined Alternatives Ultimate Configuration Predicted Traffic Noise Impacts

Receptor ID[2]	Activity Category[3]	NAC	Modeled Peak Hour Noise Level (dBA Leq(h)) and Change Over Existing[1]						
			Existing	FEC-M		FEC-W		A7C-FEC-M	
T01	B	67	45	38	(-7)	48	(3)	48	(3)
T02	B	67	45	38	(-7)	47	(2)	47	(2)
T03	B	67	45	38	(-7)	47	(2)	47	(2)
T04	B	67	45	39	(-6)	47	(2)	47	(2)
T05	B	67	45	45	(-0)	56	(11)	56	(11)
T06	B	67	45	44	(-1)	55	(10)	55	(10)
T07	B	67	45	42	(-4)	52	(7)	52	(7)
T08	B	67	45	41	(-4)	49	(4)	49	(4)
T09	B	67	45	43	(-2)	56	(11)	56	(11)
T10	B	67	45	41	(-4)	56	(11)	56	(11)
T11	B	67	45	41	(-4)	52	(7)	52	(7)
T12	B	67	45	42	(-3)	52	(7)	52	(7)
T13	B	67	45	43	(-3)	51	(6)	51	(6)
T14	B	67	45	39	(-6)	46	(1)	46	(1)
T15	B	67	45	43	(-2)	49	(4)	49	(4)
T16	B	67	45	39	(-6)	47	(2)	47	(2)
T17	B	67	45	39	(-6)	47	(2)	47	(2)
T18	B	67	45	40	(-5)	49	(4)	49	(4)
T19	B	67	45	37	(-8)	46	(1)	46	(1)
T20	B	67	45	40	(-6)	49	(4)	49	(4)
T21	B	67	45	40	(-5)	49	(4)	49	(4)
T22	B	67	45	36	(-9)	44	(-1)	44	(-1)
T23	B	67	45	36	(-10)	44	(-1)	44	(-1)
T24	B	67	45	35	(-10)	45	(-0)	45	(-0)
T25	B	67	45	35	(-10)	45	(-0)	45	(-0)
T26	B	67	45	35	(-10)	44	(-1)	44	(-1)
063a	B	67	50	**65**	**(15)**	**66**	**(16)**	**66**	**(16)**
063b	B	67	50	**65**	**(15)**	**67**	**(17)**	**67**	**(17)**
063c	B	67	50	60	(10)	61	(11)	61	(11)
063d	B	67	50	60	(10)	61	(11)	61	(11)
063e	B	67	50	54	(4)	55	(5)	55	(5)
063f	B	67	50	55	(5)	55	(5)	55	(5)

Table 4.2-2
Refined Alternatives Ultimate Configuration Predicted Traffic Noise Impacts

Receptor ID[2]	Activity Category[3]	NAC	Modeled Peak Hour Noise Level (dBA Leq(h)) and Change Over Existing[1]						
			Existing	FEC-M		FEC-W		A7C-FEC-M	
063g	B	67	50	54	(4)	55	(5)	55	(5)
063h	B	67	50	53	(3)	54	(4)	54	(4)
063i	B	67	50	57	(7)	58	(8)	58	(8)
063j	B	67	50	54	(4)	55	(5)	55	(5)
063k	B	67	50	51	(1)	52	(2)	52	(2)
063l	B	67	50	**70**	**(20)**	**72**	**(22)**	**72**	**(22)**
063m	B	67	50	**72**	**(22)**	**73**	**(23)**	**73**	**(23)**
063n	B	67	50	**67**	**(17)**	**69**	**(19)**	**69**	**(19)**
063o	B	67	50	**63**	**(13)**	**64**	**(14)**	**64**	**(14)**
063p	B	67	50	61	(11)	**63**	**(13)**	**63**	**(13)**
063q	B	67	50	58	(8)	59	(9)	59	(9)
063r	B	67	50	54	(4)	55	(5)	55	(5)
063s	B	67	50	53	(3)	54	(4)	54	(4)
063t	B	67	50	58	(8)	59	(9)	59	(9)
063u	B	67	50	51	(1)	53	(3)	53	(3)
063v	B	67	50	53	(3)	54	(4)	54	(4)
063w	B	67	50	51	(1)	52	(2)	52	(2)
063x	B	67	50	49	(-1)	50	(0)	50	(0)
070b	B	67	45	42	(-3)	45	(-1)	45	(-1)
070c	B	67	45	50	(5)	52	(7)	52	(7)
070d	B	67	45	47	(2)	50	(5)	50	(5)
070e	B	67	45	47	(2)	50	(5)	50	(5)
070f	B	67	45	49	(4)	51	(6)	51	(6)

1. Numbers in parentheses show increase over existing conditions with alternative. **Bold** numbers show traffic noise impacts.
2. Receptor locations are shown in Figure 3.3-1
3. Activity Categories are defined in Table 3.2-1

Peak Hour Traffic Noise Leq (h) Contours With Ultimate FEC-M Alternative

Peak Hour Traffic Noise Contours
With Ultimate FEC-W & A7C-FEC-M Alternatives

Table 4.2-3
Refined Alternatives Initial Configuration Predicted Traffic Noise Impacts

Receptor ID[2]	Activity Category[3]	NAC	Modeled Peak Hour Noise Level (dBA Leq(h)) and Change Over Existing[1]						
			Existing	FEC-M		FEC-W		A7C-FEC-M	
T01	B	67	45	36	(-9)	46	(1)	46	(1)
T02	B	67	45	36	(-9)	44	(-1)	44	(-1)
T03	B	67	45	36	(-9)	44	(-1)	44	(-1)
T04	B	67	45	37	(-8)	45	(0)	45	(0)
T05	B	67	45	43	(-2)	54	(9)	54	(9)
T06	B	67	45	42	(-4)	53	(8)	53	(8)
T07	B	67	45	39	(-6)	50	(5)	50	(5)
T08	B	67	45	39	(-6)	47	(2)	47	(2)
T09	B	67	45	41	(-4)	54	(9)	54	(9)
T10	B	67	45	39	(-6)	54	(9)	54	(9)
T11	B	67	45	39	(-7)	49	(4)	49	(4)
T12	B	67	45	40	(-5)	49	(4)	49	(4)
T13	B	67	45	40	(-5)	48	(3)	48	(3)
T14	B	67	45	37	(-8)	43	(-2)	43	(-2)
T15	B	67	45	41	(-4)	46	(1)	46	(1)
T16	B	67	45	37	(-8)	45	(-0)	45	(-0)
T17	B	67	45	37	(-8)	45	(-0)	45	(-0)
T18	B	67	45	38	(-7)	47	(2)	47	(2)
T19	B	67	45	35	(-10)	44	(-2)	44	(-2)
T20	B	67	45	37	(-8)	47	(2)	47	(2)
T21	B	67	45	38	(-8)	47	(2)	47	(2)
T22	B	67	45	34	(-11)	42	(-3)	42	(-3)
T23	B	67	45	33	(-12)	42	(-4)	42	(-4)
T24	B	67	45	33	(-12)	42	(-3)	42	(-3)
T25	B	67	45	33	(-13)	43	(-2)	43	(-2)
T26	B	67	45	33	(-13)	42	(-3)	42	(-3)
063a	B	67	50	**63**	**(13)**	**63**	**(13)**	**63**	**(13)**
063b	B	67	50	**64**	**(14)**	**64**	**(14)**	**64**	**(14)**
063c	B	67	50	58	(8)	59	(9)	59	(9)
063d	B	67	50	57	(7)	58	(8)	58	(8)
063e	B	67	50	52	(2)	52	(2)	52	(2)
063f	B	67	50	52	(2)	53	(3)	53	(3)
063g	B	67	50	52	(2)	52	(2)	52	(2)

Table 4.2-3
Refined Alternatives Initial Configuration Predicted Traffic Noise Impacts

Receptor ID[2]	Activity Category[3]	NAC	Modeled Peak Hour Noise Level (dBA Leq(h)) and Change Over Existing[1]						
			Existing	FEC-M		FEC-W		A7C-FEC-M	
063h	B	67	50	51	(1)	51	(1)	51	(1)
063i	B	67	50	55	(5)	55	(5)	55	(5)
063j	B	67	50	52	(2)	53	(3)	53	(3)
063k	B	67	50	49	(-1)	50	(0)	50	(0)
063l	B	67	50	**68**	**(18)**	**68**	**(18)**	**68**	**(18)**
063m	B	67	50	**69**	**(19)**	**70**	**(20)**	**70**	**(20)**
063n	B	67	50	**65**	**(15)**	**65**	**(15)**	**65**	**(15)**
063o	B	67	50	61	(11)	61	(11)	61	(11)
063p	B	67	50	59	(9)	59	(9)	59	(9)
063q	B	67	50	56	(6)	56	(6)	56	(6)
063r	B	67	50	52	(2)	52	(2)	52	(2)
063s	B	67	50	51	(1)	51	(1)	51	(1)
063t	B	67	50	56	(6)	57	(7)	57	(7)
063u	B	67	50	49	(-1)	50	(0)	50	(0)
063v	B	67	50	51	(1)	51	(1)	51	(1)
063w	B	67	50	49	(-1)	50	(-0)	50	(-0)
063x	B	67	50	47	(-3)	48	(-2)	48	(-2)
070b	B	67	45	40	(-5)	42	(-3)	42	(-3)
070c	B	67	45	47	(2)	50	(5)	50	(5)
070d	B	67	45	45	(-0)	48	(3)	48	(3)
070e	B	67	45	45	(0)	48	(3)	48	(3)
070f	B	67	45	46	(1)	48	(3)	48	(3)

1. Numbers in parentheses show increase over existing conditions with alternative. **Bold** numbers show traffic noise impacts.
2. Receptor locations are shown in Figure 3.3-1
3. Activity Categories are defined in Table 3.2-1

Peak Hour Traffic Noise Leq (h) Contours With Initial FEC-M Alternative

SECTION 5.0
NOISE ABATEMENT MEASURES

5.1 LONG TERM NOISE IMPACTS

Section 4.2.2 identified receptors along the build alternatives that are projected to approach or exceed the Federal Highway Administration (FHWA)/Caltrans Noise Abatement Criteria (NAC). Noise abatement must be considered for each of these locations to reduce the noise levels. In this section, noise abatement is considered for each area where a receptor indicates that the future with project noise level approaches or exceeds the applicable NAC by alternative. The only practical noise abatement method to reduce exterior noise levels is with sound barriers. This includes walls, berms or combinations of walls and berms. There has been some promising research into reducing traffic noise using Open Graded Asphalt. However, there are questions regarding how long the noise reductions from Open Graded Asphalt last as the surface wears over time. FHWA and Caltrans have several long term tests under way. However, until these long term tests are complete and conclusive FHWA does not allow for the consideration of the effects of Open Graded Asphalt on noise. For noise abatement to be provided it must be reasonable and feasible as defined by the FHWA/Caltrans criteria.

For noise abatement to be considered feasible under the FHWA/Caltrans criteria, it must provide a minimum of 5 dB of noise reduction at the impacted receiver. Additional feasibility considerations are: (1) topography, (2) access requirements for driveway, ramps, etc; (3) the presence of cross streets, (4) other noise sources in the area and (5) safety considerations. Consideration of these factors is outside the scope of the noise assessment but must be included in the final decision during final design of whether or not mitigation will be provided at each impacted receptor.

Determination of reasonableness of the noise abatement measures is more subjective than the determination of feasibility. Factors used in determining reasonableness are: (1) the cost of the mitigation; (2) absolute noise levels; (3) change in noise levels; (4) noise mitigation benefits; (5) date of development along the roadway; (6) life cycle of the mitigation measures; (7) environmental impact of the mitigation; (8) opinions of impacted residents; (9) input from public and local agencies; (10) social, economic and environmental factors. Caltrans provides a methodology for a preliminary reasonableness determination that accounts for factors (1) through (5) listed above in Section 2.8 of the Caltrans Traffic Noise Analysis Protocol (TNAP). This determination is discussed for each of the build alternatives below. Consideration of the other factors (6-10) is beyond the scope of this analysis but must be included in the final decision of whether or not mitigation will be provided during final design of the selected alternative.

For each of the receptors identified to have future noise levels approaching (i.e. within 1 dB of) or exceeding the applicable NAC or subject to a substantial noise increase, noise levels with sound walls of heights between 2.4m (8 ft.) and 5.0 m (16 ft) in 0.8 m (2 ft.) increments were calculated. With and without sound wall noise levels were calculated for these receivers and are presented in tables by alternative below.

For each alternative, a table is presented below showing the noise levels at the receptors with the alternative with no sound wall and with the five sound wall heights discussed above. Additionally, the Insertion Loss for each wall height is presented. The insertion loss is the

difference in the sound level with and without the wall in place. This is the amount of noise reduction provided by the wall. As discussed above, the wall must provide at least 5 dB of noise reduction to be considered feasible.

Sound walls are effective at reducing noise levels when they break the line of sight between the source of noise and the receiver. The deeper the wall breaks the sightline, the greater the nose reduction provided by the sound wall. Typically, the optimal location for a sound wall is the highest point between the road and the receptor. In cases where the roadway is above the receiver, a sound wall is typically located on the edge of the road. In cases where the receptors are above the road, the sound wall is typically most effective if it is located at the property line of the affected receptor. In some cases, this is within the road right-of-way and in others it is outside of the road right-of-way. It is preferred to construct sound walls within the road right-of-way. However, in many cases, sound walls within the road right-of-way do not satisfy the feasibility requirements (i.e. they do not provide at least 5 dB of noise reduction). Sound walls outside of the proposed right-of-way for each alternative are identified as being so. Noise levels with these sound walls are presented in separate tables for each alternative.

A preliminary reasonableness determination was prepared for each sound wall proposed for each alternative per the methodology presented in Section 2.8 of the TNAP. This is essentially a cost-benefit analysis. The reasonable cost, per benefited residence, is determined by a base per residence determination which is increased by amounts depending on the unmitigated noise level with the project, the increase over existing noise levels, the amount of noise reduction provided by the sound wall and if the benefited residences pre-date 1978 or the project represents new highway construction. The base determination is $17,000 per benefited residence. If the unmitigated noise levels with the project are between 66 and 69 dBA Leq(h), $2,000 is added, if the levels are between 70 and 74 dBA Leq(h), $4,000 is added, if the levels are between 75 and 78 dBA Leq(h), $6,000 is added and if the levels are more than 78 dBA then $8,000 is added. If the increase over existing levels is between 3 and 7 dBA, $2,000 is added, if the increase is between 8 and 11 dBA, $4,000 is added and if the increase is more than 12 dBA, $6,000 is added. If the sound wall provides between 6 and 8 dBA of noise reduction, $2,000 is added, if the sound wall provides between 9 and 11 dBA of noise reduction, $4,000 is added, and of the sound wall provides more than 12 dBA of noise reduction, $6,000 is added. If the project represents new highway construction or more than 50% of the benefited residences were constructed before 1978, $10,000 is added. Adding these factors to the base determination depending on the specifics of the sound wall results in a reasonable allowance per residence for the sound wall. If the cost of the sound wall is less than this, the sound wall is considered reasonable for the first five reasonableness factors discussed above. If the cost of the sound wall is greater than this, it is not considered reasonable.

For the preliminary reasonableness determination, the cost of the sound wall was determined using the Caltrans standard estimate of $150 per square meter ($14 per square foot). This value is multiplied by the length and height of the sound wall to determine the total cost of the sound wall. This cost is then divided by the number of benefited residences to determine the cost per residence which is compared with the reasonableness determination as described above. A benefited residence is a dwelling unit expected to receive a noise reduction of at least 5 dBA from the proposed sound wall. For this analysis, a conservative number of benefited residences was used in the calculation. Only first row dwelling units behind the wall were counted. Some noise sound walls may result in additional residences being benefited, but in most cases, walls

are found to be reasonable with the conservative count of benefited residences. Walls that were found to be unreasonable but may have additional benefited residences are discussed below, by alternative. For non residential uses, the number of benefited residences used in the preliminary reasonableness determination is taken to be one for every 30.5m (100') of frontage to the highway.

For each alternative, tables are presented below for each sound wall that summarize the preliminary reasonableness determination. For each sound wall the receptors benefited by that wall are presented along with the highest with project maximum hourly noise level and greatest increase over existing conditions at any of the receptors benefited by the wall. For each of the five wall heights assessed the table then presents the base data used to calculate the reasonableness allowance. This data is the insertion loss provided by the wall, the number of benefited residences, and if the project represents a new highway or more than 50% of the benefited residences were constructed before 1978. The reasonable allowance per benefited residence is then presented in the third to the last row of the table. This is the maximum cost of the wall, per benefited residence, that is considered reasonable. If the wall is not feasible, it does not provide at least 5 dB of insertion loss, than this is noted no reasonable allowance is presented. The reasonableness determination is not applicable to walls that are not feasible. The second to the last row of the table presents the estimated cost of the wall per benefited residence. The last row of the table indicates if the wall is reasonable, that is, is the estimated cost less than the reasonable allowance. The recommended sound wall height for each wall is discussed by alternative below.

To be effective, sound walls are required to have a surface density of at least 83 kilograms per square meter (3.5 pounds per square foot), and have no openings or cracks. They may be a solid wall, an earthen berm, or a combination of the two. They may be constructed of wood studs with stucco exterior, 6.3 millimeter (1/4 inch) plate glass, 15.9 millimeter (5/8 inch) plexiglass, any masonry material, or a combination of these materials. Wood and other materials may be acceptable if properly designed as sound walls.

Another FHWA/Caltrans requirement for sound walls is that they break the line of sight to a 3.5 m (11.5 ft.) high truck exhaust stack. Meeting this requirement is extremely dependant on the specific topography in an area and slight differences in relative elevations between the road, the sound wall, and the observer will result in different wall heights meeting this criterion. At this level of analysis, topographic mapping with the detail required to perform an accurate analysis of the line-of-sight to a truck exhaust stack is not available. Therefore, a detailed analysis of whether or not the sound walls break line-of-sight to the exhaust stack was not performed. In most cases, the recommended walls are expected to satisfy this requirement. If there is some uncertainty, this is noted below. Sound walls constructed for the selected alternative will need to meet this requirement which will be evaluated during final design.

A Final Noise Analysis will need to be prepared when appropriately detailed and finalized mapping is available for whichever alternative is selected. Detailed topographic plans showing the alternative and potentially affected residences will be required for that analysis. The plans should have a scale of 1:500 and a 0.5 meter contour interval. Noise levels should be analyzed at all land uses with sensitive receptors potentially impacted by the project. Noise measurements and locations should be evaluated for any changes in their vicinity and re-taken if required. Any model calibration will need to be redone with these new measurements.

FHWA/Caltrans requires that where sound walls are proposed, consideration must be given to the opinions of adjacent residents. Whether or not the residents favor the construction of the sound wall, the materials to be used and the final appearance of the structure must be considered. If 50% or more of the affected residents oppose construction of a sound wall, it shall not be provided. Further, if the majority of the residents object to the proposed sound wall height, a shorter sound wall may be constructed as long as it will reduce noise levels by a minimum of 5 dBA. The sound wall heights presented here should be considered preliminary. Final sound wall heights will be determined in the Final Noise Analysis conducted during final design and will consider the opinions of the residents.

5 1.1 FAR EAST CORRIDOR-MODIFIED-COMPLETE (FEC-M)-ULTIMATE ALTERNATIVE

Figure 5.2-1 shows the locations of the sound walls analyzed to abate the noise at the receptors identified to be impacted by the FEC-M-Ultimate Alternative in Section 4.2.2.1. The figure shows the sound walls designed to reduce noise levels for Receptors 063a, 063b, 063l, 063m, 063n, and 063o. Note that sound wall SW-063 was previously identified in the primary Noise Assessment prepared for the project. At the time of preparation of the primary noise assessment the area represented by Receptors 063l, 063m, 063n, and 063o was undeveloped. The need for Sound wall SW-063l was not identified in the primary noise assessment prepared for the project.

Both sound walls, SW-063 for Receptors 063a and 063b, and SW-063l for Receptors 063l, 063m, 063n and 063o, are not feasible unless the sound walls are located as shown in Figure 5.2-1, outside the proposed right of way for the FEC-M-Ultimate Alternative. In both cases, the receptors are elevated above the roadway. Sound walls located within the right-of-way would not break the receptors' line of sight to the road and provide less than 5 dB of insertion loss. Therefore, out of right-of-way sound walls are the only feasible sound walls for these receptors. Table 5.2-1 presents noise levels with the five sound walls heights for these out of right-of-way sound walls. Table 5.2-2 presents the input data and results of the preliminary reasonableness determination for each of the sound walls considered for the FEC-M-Ultimate Alternative.

Tables 5.2-1 and 5.2-2 show that sound wall SW-063 is reasonable and feasible with heights of 3m (10') or greater. All of these sound wall heights should break the line-of-sight to a truck exhaust stack. A 4.9m (16') sound wall is recommended for SW-063. This wall would reduce traffic noise levels by 5 to 10 dBA for approximately 35 residences at an approximate cost of $381,000.

Tables 5.2-1 and 5.2-2 show that sound wall SW-063l is reasonable and feasible with heights of 3m (10') or greater. All of these sound wall heights should break the line-of-sight to a truck exhaust stack. A 4.9m (16') sound wall is recommended for SW-063l. This wall would reduce traffic noise levels by 5 to 10 dBA for approximately 20 residences at an approximate cost of $240,000.

If the FEC-M-Ultimate Alternative were selected, implementation of sound walls SW-063 and SW-063l with the heights described above would abate the traffic noise impacts in the Talega Community resulting from this Alternative consistent with FHWA/Caltrans criteria. Implementation of the FEC-M-Ultimate Alternative would not result in any adverse environmental noise impacts. The analysis used to determine the locations and heights of these sound walls was based on preliminary designs for the FEC-M-Ultimate Alternative. If this

Alternative is selected a final noise assessment will need to be prepared during final design as discussed in Section 5.1.

For illustrative purposes Figure 5.2-2 presents the peak hour Leq(h) noise contours in the analysis area with the FEC-M-Ultimate Alternative and the proposed mitigation (i.e. Sound walls SW-063 and SW-063l constructed with heights of 4.9m (16') at locations shown in Figure 5.2-1).

5 1.2 FAR EAST CORRIDOR-MODIFIED-COMPLETE (FEC-M)-INITIAL ALTERNATIVE

Figure 5.2-1 shows the locations of the sound walls analyzed to abate the noise at the receptors identified to be impacted by the FEC-M-Initial Alternative in Section 4.2.2.2. The figure shows the sound walls designed to reduce noise levels for Receptors 063a, 063b, 063l, 063m, and 063n. Note that sound wall SW-063 was previously identified in the primary Noise Assessment prepared for the project. At the time of preparation of the primary noise assessment the area represented by Receptors 063l, 063m, and 063n was undeveloped. The need for Sound wall SW-063l was not identified in the primary noise assessment prepared for the project.

Both sound walls, SW-063 for Receptors 063a and 063b, and SW-063l for Receptors 063l, 063m, and 063n, are not feasible unless the sound walls are located as shown in Figure 5.2-1, outside the proposed right of way for the FEC-M-Initial Alternative. In both cases, the receptors are elevated above the roadway. Sound walls located within the right-of-way would not break the receptors' line of sight to the road and provide less than 5 dB of insertion loss. Therefore, out of right-of-way sound walls are the only feasible sound walls for these receptors. Table 5.2-3 presents noise levels with the five sound walls heights for these out of right-of-way sound walls. Table 5.2-4 presents the input data and results of the preliminary reasonableness determination for each of the sound walls considered for the FEC-M-Initial Alternative.

Tables 5.2-3 and 5.2-4 show that sound wall SW-063 is reasonable for all five wall heights analyzed. All of these sound wall heights should break the line-of-sight to a truck exhaust stack. A 4.9m (16') sound wall is recommended for SW-063. This wall would reduce traffic noise levels by 5 to 10 dBA for approximately 35 residences at an approximate cost of $381,000.

Tables 5.2-3 and 5.2-4 show that sound wall SW-063l is reasonable and feasible with heights of 3m (10') or greater. All of these sound wall heights should break the line-of-sight to a truck exhaust stack. A 4.9m (16') sound wall is recommended for SW-063l. This wall would reduce traffic noise levels by 5 to 10 dBA for approximately 20 residences at an approximate cost of $240,000.

If the FEC-M-Initial Alternative were selected, implementation of sound walls SW-063 and SW-063l with the heights described above would abate the traffic noise impacts in the Talega Community resulting from this Alternative consistent with FHWA/Caltrans criteria. Implementation of the FEC-M-Initial Alternative would not result in any adverse environmental noise impacts. The analysis used to determine the locations and heights of these sound walls was based on preliminary designs for the FEC-M-Initial Alternative. If this Alternative is selected a final noise assessment will need to be prepared during final design as discussed in Section 5.1.

For illustrative purposes Figure 5.2-3 presents the peak hour Leq(h) noise contours in the analysis area with the FEC-M-Initial Alternative and the proposed mitigation(i.e. Sound walls

SW-063 and SW-063l constructed with heights of 4.9m (16') at locations shown in Figure 5.2-1).

5 1.3 FAR EAST CORRIDOR-WEST-COMPLETE (FEC-W)-ULTIMATE ALTERNATIVE

Figure 5.2-4 shows the locations of the sound walls analyzed to abate the noise at the receptors identified to be impacted by the FEC-W-Ultimate Alternative in Section 4.2.2.3. The figure shows the sound walls designed to reduce noise levels for Receptors 063a, 063b, 063l, 063m, 063n, 063o, and 063p. Note that sound wall SW-063 was previously identified in the primary Noise Assessment prepared for the project. At the time of preparation of the primary noise assessment the area represented by Receptors 063l, 063m, 063n, and 063o was undeveloped. The need for Sound wall SW-063l was not identified in the primary noise assessment prepared for the project.

Both sound walls, SW-063 for Receptors 063a and 063b, and SW-063l for Receptors 063l, 063m, 063n, 063o and 063p, are not feasible unless the sound walls are located as shown in Figure 5.2-4, outside the proposed right of way for the FEC-W-Ultimate Alternative. In both cases, the receptors are elevated above the roadway. Sound walls located within the right-of-way would not break the receptors' line of sight to the road and provide less than 5 dB of insertion loss. Therefore, out of right-of-way sound walls are the only feasible sound walls for these receptors. Table 5.2-5 presents noise levels with the five sound walls heights for these out of right-of-way sound walls. Table 5.2-6 presents the input data and results of the preliminary reasonableness determination for each of the sound walls considered for the FEC-W-Ultimate Alternative.

Tables 5.2-5 and 5.2-6 show that sound wall SW-063 is reasonable and feasible with heights of 3m (10') or greater. All of these sound wall heights should break the line-of-sight to a truck exhaust stack. A 4.9m (16') sound wall is recommended for SW-063. This wall would reduce traffic noise levels by 5 to 10 dBA for approximately 35 residences at an approximate cost of $381,000.

Tables 5.2-1 and 5.2-2 show that sound wall SW-063l is reasonable and feasible with heights of 3m (10') or greater. All of these sound wall heights should break the line-of-sight to a truck exhaust stack. A 4.9m (16') sound wall is recommended for SW-063l. This wall would reduce traffic noise levels by 5 to 10 dBA for approximately 20 residences at an approximate cost of $240,000.

If the FEC-W-Ultimate Alternative were selected, implementation of sound walls SW-063 and SW-063l with the heights described above would abate the traffic noise impacts in the Talega Community resulting from this Alternative consistent with FHWA/Caltrans criteria. Implementation of the FEC-W-Ultimate Alternative would not result in any adverse environmental noise impacts. The analysis used to determine the locations and heights of these sound walls was based on preliminary designs for the FEC-W-Ultimate Alternative. If this Alternative is selected a final noise assessment will need to be prepared during final design as discussed in Section 5.1.

For illustrative purposes Figure 5.2-5 presents the peak hour Leq(h) noise contours in the analysis area with the FEC-W-Ultimate Alternative and the proposed mitigation (i.e. Sound walls SW-063 and SW-063l constructed with heights of 4.9m (16') at locations shown in Figure 5.2-4).

5 1.4 FAR EAST CORRIDOR-MODIFIED-COMPLETE (FEC-W)-INITIAL ALTERNATIVE

Figure 5.2-4 shows the locations of the sound walls analyzed to abate the noise at the receptors identified to be impacted by the FEC-W-Initial Alternative in Section 4.2.2.4. The figure shows the sound walls designed to reduce noise levels for Receptors 063a, 063b, 063l, 063m, and 063n. Note that sound wall SW-063 was previously identified in the primary Noise Assessment prepared for the project. At the time of preparation of the primary noise assessment the area represented by Receptors 063l, 063m, and 063n was undeveloped. The need for Sound wall SW-063l was not identified in the primary noise assessment prepared for the project.

Both sound walls, SW-063 for Receptors 063a and 063b, and SW-063l for Receptors 063l, 063m, and 063n, are not feasible unless the sound walls are located as shown in Figure 5.2-4, outside the proposed right of way for the FEC-W-Initial Alternative. In both cases, the receptors are elevated above the roadway. Sound walls located within the right-of-way would not break the receptors' line of sight to the road and provide less than 5 dB of insertion loss. Therefore, out of right-of-way sound walls are the only feasible sound walls for these receptors. Table 5.2-7 presents noise levels with the five sound walls heights for these out of right-of-way sound walls. Table 5.2-8 presents the input data and results of the preliminary reasonableness determination for each of the sound walls considered for the FEC-W-Initial Alternative.

Tables 5.2-7 and 5.2-8 show that sound wall SW-063 is reasonable for all five wall heights analyzed. All of these sound wall heights should break the line-of-sight to a truck exhaust stack. A 4.9m (16') sound wall is recommended for SW-063. This wall would reduce traffic noise levels by 5 to 10 dBA for approximately 35 residences at an approximate cost of $381,000.

Tables 5.2-7 and 5.2-8 show that sound wall SW-063l is reasonable and feasible with heights of 3m (10') or greater. All of these sound wall heights should break the line-of-sight to a truck exhaust stack. A 4.9m (16') sound wall is recommended for SW-063l. This wall would reduce traffic noise levels by 5 to 10 dBA for approximately 20 residences at an approximate cost of $240,000.

If the FEC-W-Initial Alternative were selected, implementation of sound walls SW-063 and SW-063l with the heights described above would abate the traffic noise impacts in the Talega Community resulting from this Alternative consistent with FHWA/Caltrans criteria. Implementation of the FEC-W-Initial Alternative would not result in any adverse environmental noise impacts. The analysis used to determine the locations and heights of these sound walls was based on preliminary designs for the FEC-W-Initial Alternative. If this Alternative is selected a final noise assessment will need to be prepared during final design as discussed in Section 5.1.

For illustrative purposes Figure 5.2-6 presents the peak hour Leq(h) noise contours in the analysis area with FEC-W-Initial Alternative and the proposed mitigation (i.e. Sound walls SW-063 and SW-063l constructed with heights of 4.9m (16') at locations shown in Figure 5.2-4).

5 1.5 ALIGNMENT 7 CORRIDOR-FAR EAST CROSSOVER -MODIFIED-COMPLETE (A7C-FEC-M)-ULTIMATE ALTERNATIVE

Figure 5.2-4 shows the locations of the sound walls analyzed to abate the noise at the receptors identified to be impacted by the A7C-FEC-M-Ultimate Alternative in Section 4.2.2.5. The figure shows the sound walls designed to reduce noise levels for Receptors 063a, 063b, 063l, 063m, 063n, 063o, and 063p. Note that sound wall SW-063 was previously identified in the primary Noise Assessment prepared for the project. At the time of preparation of the primary noise assessment the area represented by Receptors 063l, 063m, 063n, and 063o was undeveloped. The need for sound wall SW-063l was not identified in the primary noise assessment prepared for the project.

Both sound walls, SW-063 for Receptors 063a and 063b, and SW-063l for Receptors 063l, 063m, 063n, 063o and 063p, are not feasible unless the sound walls are located as shown in Figure 5.2-4, outside the proposed right of way for the A7C-FEC-M-Ultimate Alternative. In both cases, the receptors are elevated above the roadway. Sound walls located within the right-of-way would not break the receptors' line of sight to the road and provide less than 5 dB of insertion loss. Therefore, out of right-of-way sound walls are the only feasible sound walls for these receptors. Table 5.2-5 presents noise levels with the five sound walls heights for these out of right-of-way sound walls. Table 5.2-6 presents the input data and results of the preliminary reasonableness determination for each of the sound walls considered for the A7C-FEC-M-Ultimate Alternative.

Tables 5.2-5 and 5.2-6 show that sound wall SW-063 is reasonable and feasible with heights of 3m (10') or greater. All of these sound wall heights should break the line-of-sight to a truck exhaust stack. A 4.9m (16') sound wall is recommended for SW-063. This wall would reduce traffic noise levels by 5 to 10 dBA for approximately 35 residences at an approximate cost of $381,000.

Tables 5.2-1 and 5.2-2 show that sound wall SW-063l is reasonable and feasible with heights of 3m (10') or greater. All of these sound wall heights should break the line-of-sight to a truck exhaust stack. A 4.9m (16') sound wall is recommended for SW-063l. This wall would reduce traffic noise levels by 5 to 10 dBA for approximately 20 residences at an approximate cost of $240,000.

If the A7C-FEC-M-Ultimate Alternative were selected, implementation of sound walls SW-063 and SW-063l with the heights described above would abate the traffic noise impacts in the Talega Community resulting from this Alternative consistent with FHWA/Caltrans criteria. Implementation of the A7C-FEC-M-Ultimate Alternative would not result in any adverse environmental noise impacts. The analysis used to determine the locations and heights of these sound walls was based on preliminary designs for the A7C-FEC-M-Ultimate Alternative. If this Alternative is selected a final noise assessment will need to be prepared during final design as discussed in Section 5.1.

For illustrative purposes Figure 5.2-5 presents the peak hour Leq(h) noise contours in the analysis area with the A7C-FEC-M-Ultimate Alternative and the proposed mitigation (i.e. Sound walls SW-063 and SW-063l constructed with heights of 4.9m (16') at locations shown in Figure 5.2-4).

5 1.6 ALIGNMENT 7 CORRIDOR-FAR EAST CROSSOVER-MODIFIED-COMPLETE (A7C-FEC-M)-INITIAL ALTERNATIVE

Figure 5.2-4 shows the locations of the sound walls analyzed to abate the noise at the receptors identified to be impacted by the A7C-FEC-M-Initial Alternative in Section 4.2.2.6. The figure shows the sound walls designed to reduce noise levels for Receptors 063a, 063b, 063l, 063m, and 063n. Note that sound wall SW-063 was previously identified in the primary Noise Assessment prepared for the project. At the time of preparation of the primary noise assessment the area represented by Receptors 063l, 063m, and 063n was undeveloped. The need for Sound wall SW-063l was not identified in the primary noise assessment prepared for the project.

Both sound walls, SW-063 for Receptors 063a and 063b, and SW-063l for Receptors 063l, 063m, and 063n, are not feasible unless the sound walls are located as shown in Figure 5.2-4, outside the proposed right of way for the A7C-FEC-M -Initial Alternative. In both cases, the receptors are elevated above the roadway. Sound walls located within the right-of-way would not break the receptors' line of sight to the road and provide less than 5 dB of insertion loss. Therefore, out of right-of-way sound walls are the only feasible sound walls for these receptors. Table 5.2-7 presents noise levels with the five sound walls heights for these out of right-of-way sound walls. Table 5.2-8 presents the input data and results of the preliminary reasonableness determination for each of the sound walls considered for the A7C-FEC-M -Initial Alternative.

Tables 5.2-7 and 5.2-8 show that sound wall SW-063 is reasonable for all five wall heights analyzed. All of these sound wall heights should break the line-of-sight to a truck exhaust stack. A 4.9m (16') sound wall is recommended for SW-063. This wall would reduce traffic noise levels by 5 to 10 dBA for approximately 35 residences at an approximate cost of $381,000.

Tables 5.2-7 and 5.2-8 show that sound wall SW-063l is reasonable and feasible with heights of 3m (10') or greater. All of these sound wall heights should break the line-of-sight to a truck exhaust stack. A 4.9m (16') sound wall is recommended for SW-063l. This wall would reduce traffic noise levels by 5 to 10 dBA for approximately 20 residences at an approximate cost of $240,000.

If the A7C-FEC-M-Initial Alternative were selected, implementation of sound walls SW-063 and SW-063l with the heights described above would abate the traffic noise impacts in the Talega Community resulting from this Alternative consistent with FHWA/Caltrans criteria. Implementation of the A7C-FEC-M-Initial Alternative would not result in any adverse environmental noise impacts. The analysis used to determine the locations and heights of these sound walls was based on preliminary designs for the A7C-FEC-M-Initial Alternative. If this Alternative is selected a final noise assessment will need to be prepared during final design as discussed in Section 5.1.

For illustrative purposes Figure 5.2-6 presents the peak hour Leq(h) noise contours in the analysis area with the A7C-FEC-M-Initial Alternative and the proposed mitigation (i.e. Sound walls SW-063 and SW-063l constructed with heights of 4.9m (16') at locations shown in Figure 5.2-4).

5.2 CUMULATIVE IMPACTS

As discussed in Section 4.4 there are no cumulative noise impacts in terms of FHWA/Caltrans NEPA criteria. Therefore, no mitigation for cumulative impacts is required.

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Peak Hour Traffic Noise Leq (h) Contours With Initial FEC-W & A7C-FEC-M Alternatives

Table 5.2-1
With Out of Right-of-Way Barrier Noise Levels for FEC-M-Ultimate Alternative

	Peak Hour Noise Level and Insertion Loss With Barrier of Height					
Receptor	**None**	**2.4m (8')**	**3m (10')**	**3.7m (12')**	**4.3m (14')**	**4.9m (16')**
063a	65	61 (-4)	60 (-5)	60 (-5)	59 (-6)	59 (-6)
063b	65	61 (-4)	60 (-5)	59 (-6)	58 (-7)	55 (-10)
063c	60	60 (0)	60 (0)	60 (0)	60 (0)	60 (0)
063d	60	58 (-2)	58 (-2)	57 (-2)	57 (-3)	57 (-3)
063e	54	54 (0)	54 (0)	54 (0)	54 (0)	54 (0)
063f	55	54 (0)	54 (0)	54 (0)	54 (0)	54 (0)
063g	54	54 (0)	54 (0)	54 (-1)	53 (-1)	53 (-1)
063h	53	53 (0)	53 (0)	53 (0)	53 (0)	53 (0)
063i	57	57 (0)	57 (0)	57 (-1)	57 (-1)	57 (-1)
063j	54	54 (0)	54 (0)	54 (0)	54 (0)	54 (0)
063k	51	51 (0)	51 (0)	51 (0)	51 (0)	51 (0)
063l	70	67 (-3)	66 (-4)	65 (-5)	64 (-6)	63 (-7)
063m	72	68 (-4)	66 (-5)	65 (-7)	63 (-9)	62 (-10)
063n	67	66 (-2)	65 (-3)	63 (-4)	62 (-5)	61 (-6)
063o	63	62 (-1)	61 (-2)	60 (-3)	59 (-4)	58 (-5)
063p	61	60 (-1)	60 (-2)	59 (-2)	59 (-3)	58 (-4)
063q	58	58 (0)	58 (0)	58 (0)	58 (0)	58 (-1)
063r	54	54 (0)	54 (0)	54 (0)	54 (0)	54 (0)
063s	53	53 (0)	53 (0)	53 (0)	53 (0)	53 (0)
063t	58	58 (0)	58 (0)	58 (0)	58 (0)	58 (0)
063u	51	51 (0)	51 (0)	51 (0)	51 (0)	51 (0)
063v	53	53 (0)	53 (0)	53 (0)	53 (0)	53 (0)
063w	51	51 (0)	51 (0)	51 (0)	51 (0)	51 (0)
063x	49	49 (0)	49 (0)	49 (0)	49 (0)	49 (0)

Table 5.2-2
Preliminary Sound Wall Reasonableness Determination FEC-M-Ultimate Alternative

Sound Wall ID	**SW - 063**		**Receptors 063a & 063b**		
Predicted Without Sound Wall					
Absolute With Project Noise Level, Leq(h) dBA*		65			
Increase over Existing, dBA*		15			
Predicted With Sound Wall					
Wall Height	2.4m (8')	3m (10')	3.7m (12')	4.3m (14')	4.9m (16')
Insertion Loss (Noise Reduction), dBA*	4	5	6	7	10
No. Benefited Residences	35	35	35	35	35
New Highway or More than 50% of Residences Predate 1978?	Yes	Yes	Yes	Yes	Yes
Reasonable Allowance Per Benefited Residence	Not Feasible	$37,000	$39,000	$39,000	$41,000
Estimated Cost Per Residence	$5,450	$6,812	$8,174	$9,537	$10,899
Reasonable ?	**n/a**	**Yes**	**Yes**	**Yes**	**Yes**

Sound Wall ID	**SW-063L**		**Receptors 063l, 063m, 063n & 063o**		
Predicted Without Sound Wall					
Absolute With Project Noise Level, Leq(h) dBA*		72			
Increase over Existing, dBA*		22			
Predicted With Sound Wall					
Wall Height	2.4m (8')	3m (10')	3.7m (12')	4.3m (14')	4.9m (16')
Insertion Loss (Noise Reduction), dBA*	4	6	7	9	10
No. Benefited Residences	20	20	20	20	20
New Highway or More than 50% of Residences Predate 1978?	Yes	Yes	Yes	Yes	No
Reasonable Allowance Per Benefited Residence	Not Feasible	$41,000	$41,000	$43,000	$43,000
Estimated Cost Per Residence	$5,998	$7,497	$8,996	$10,496	$11,995
Reasonable ?	**n/a**	**Yes**	**Yes**	**Yes**	**Yes**

* At Critical Receptor
† Assuming cost of $151 per square meter ($14 per square foot)

Sound Walls SW-063 & SW-063I
Initial & Ultimate FEC-M Alternatives

Table 5.2-3
With Out of Right-of-Way Barrier Noise Levels for FEC-M-Initial Alternative

	Peak Hour Noise Level and Insertion Loss With Barrier of Height					
Receptor	**None**	**2.4m (8')**	**3m (10')**	**3.7m (12')**	**4.3m (14')**	**4.9m (16')**
063a	63	59 (-4)	58 (-5)	57 (-6)	56 (-7)	56 (-7)
063b	63	58 (-5)	57 (-6)	56 (-7)	55 (-8)	54 (-9)
063c	58	57 (0)	57 (0)	57 (0)	57 (0)	57 (0)
063d	57	56 (-2)	56 (-2)	55 (-2)	55 (-3)	55 (-3)
063e	52	51 (0)	51 (0)	51 (0)	51 (0)	51 (0)
063f	52	52 (0)	52 (0)	52 (0)	52 (0)	52 (-1)
063g	52	51 (0)	51 (-1)	51 (-1)	51 (-1)	51 (-1)
063h	51	51 (0)	51 (0)	51 (0)	51 (0)	51 (0)
063i	55	55 (0)	55 (0)	55 (0)	55 (-1)	54 (-1)
063j	52	52 (0)	52 (0)	52 (0)	52 (0)	52 (0)
063k	49	49 (0)	49 (0)	49 (0)	49 (0)	49 (0)
063l	68	65 (-3)	64 (-4)	63 (-5)	62 (-6)	61 (-7)
063m	69	66 (-4)	64 (-5)	62 (-7)	61 (-9)	59 (-10)
063n	65	63 (-2)	62 (-3)	61 (-4)	60 (-5)	59 (-6)
063o	61	60 (-1)	59 (-2)	58 (-3)	57 (-4)	56 (-5)
063p	59	58 (-1)	57 (-2)	57 (-2)	56 (-3)	56 (-4)
063q	56	56 (0)	56 (0)	56 (0)	56 (0)	55 (-1)
063r	52	52 (0)	52 (0)	52 (0)	52 (0)	51 (0)
063s	51	51 (0)	51 (0)	51 (0)	51 (0)	51 (0)
063t	56	56 (0)	56 (0)	56 (0)	56 (0)	56 (0)
063u	49	49 (0)	49 (0)	49 (0)	49 (0)	49 (0)
063v	51	50 (0)	50 (0)	50 (0)	50 (0)	50 (0)
063w	49	49 (0)	49 (0)	49 (0)	49 (0)	49 (0)
063x	47	47 (0)	47 (0)	47 (0)	47 (0)	47 (0)

Table 5.2-4
Preliminary Sound Wall Reasonableness Determination FEC-M-Initial Alternative

Sound Wall ID	**SW - 063**		**Receptors 063a & 063b**		
Predicted Without Sound Wall					
Absolute With Project Noise Level, Leq(h) dBA*		63			
Increase over Existing, dBA*		13			
Predicted With Sound Wall					
Wall Height	2.4m (8')	3m (10')	3.7m (12')	4.3m (14')	4.9m (16')
Insertion Loss (Noise Reduction), dBA*	5	6	7	8	9
No. Benefited Residences	35	35	35	35	35
New Highway or More than 50% of Residences Predate 1978?	Yes	Yes	Yes	Yes	Yes
Reasonable Allowance Per Benefited Residence	$37,000	$39,000	$39,000	$39,000	$41,000
Estimated Cost Per Residence	$5,450	$6,812	$8,174	$9,537	$10,899
Reasonable ?	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**

Sound Wall ID	**SW-063L**		**Receptors 063l, 063m, 063n & 063o**		
Predicted Without Sound Wall					
Absolute With Project Noise Level, Leq(h) dBA*		69			
Increase over Existing, dBA*		19			
Predicted With Sound Wall					
Wall Height	2.4m (8')	3m (10')	3.7m (12')	4.3m (14')	4.9m (16')
Insertion Loss (Noise Reduction), dBA*	3	5	7	8	10
No. Benefited Residences	20	20	20	20	20
New Highway or More than 50% of Residences Predate 1978?	Yes	Yes	Yes	Yes	No
Reasonable Allowance Per Benefited Residence	Not Feasible	$37,000	$39,000	$39,000	$41,000
Estimated Cost Per Residence	$5,998	$7,497	$8,996	$10,496	$11,995
Reasonable ?	**n/a**	**Yes**	**Yes**	**Yes**	**Yes**

* At Critical Receptor
† Assuming cost of $151 per square meter ($14 per square foot)

Peak Hour Traffic Noise Leq (h) Contours With Ultimate FEC-M Alternative-Mitigated

Table 5.2-5
With Out of Right-of-Way Barrier Noise Levels for FEC-W & A7C-FEC-M Ultimate Alternatives

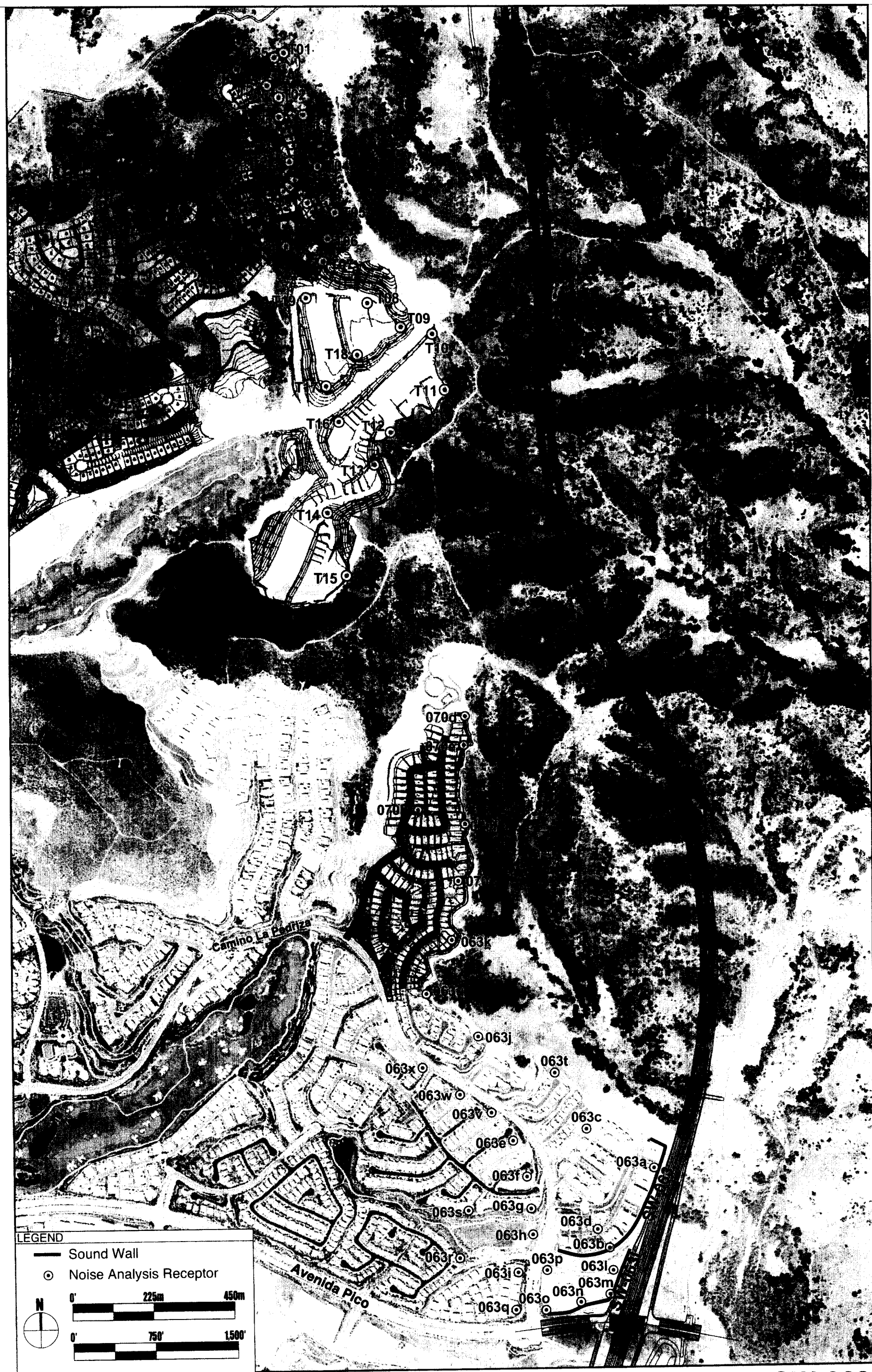
	Peak Hour Noise Level and Insertion Loss With Barrier of Height					
Receptor	**None**	**2.4m (8')**	**3m (10')**	**3.7m (12')**	**4.3m (14')**	**4.9m (16')**
063a	66	62 (-4)	62 (-4)	61 (-5)	61 (-5)	60 (-6)
063b	65	61 (-4)	60 (-5)	59 (-6)	59 (-6)	58 (-7)
063c	61	61 (0)	61 (0)	61 (0)	61 (0)	61 (0)
063d	61	59 (-2)	59 (-3)	58 (-3)	58 (-3)	58 (-3)
063e	55	54 (0)	54 (0)	54 (0)	54 (0)	54 (0)
063f	55	55 (-1)	55 (-1)	55 (-1)	55 (-1)	55 (-1)
063g	55	54 (-1)	54 (-1)	54 (-1)	54 (-1)	54 (-1)
063h	54	53 (0)	53 (0)	53 (0)	53 (-1)	53 (-1)
063i	58	57 (-1)	57 (-1)	57 (-1)	57 (-2)	57 (-2)
063j	55	55 (0)	55 (0)	55 (0)	55 (0)	55 (0)
063k	52	52 (0)	52 (0)	52 (0)	52 (0)	52 (0)
063l	72	67 (-4)	66 (-5)	65 (-6)	64 (-7)	63 (-8)
063m	73	68 (-4)	67 (-6)	65 (-8)	63 (-9)	62 (-11)
063n	69	66 (-3)	64 (-4)	63 (-5)	62 (-7)	61 (-8)
063o	64	62 (-2)	61 (-3)	60 (-4)	59 (-5)	58 (-6)
063p	63	60 (-3)	60 (-3)	59 (-4)	58 (-4)	58 (-5)
063q	59	58 (-1)	58 (-1)	58 (-1)	58 (-1)	58 (-1)
063r	55	54 (-1)	54 (-1)	54 (-1)	54 (-1)	54 (-1)
063s	54	53 (-1)	53 (-1)	53 (-1)	53 (-1)	53 (-1)
063t	59	60 (0)	60 (0)	60 (0)	60 (0)	60 (0)
063u	53	52 (0)	52 (0)	52 (0)	52 (0)	52 (0)
063v	54	53 (0)	53 (0)	53 (0)	53 (0)	53 (0)
063w	52	52 (0)	52 (0)	52 (0)	52 (0)	52 (0)
063x	50	50 (0)	50 (0)	50 (0)	50 (0)	50 (0)

Table 5.2-6
Preliminary Sound Wall Reasonableness Determination FEC-W & A7C-FEC-M Ultimate Alternatives

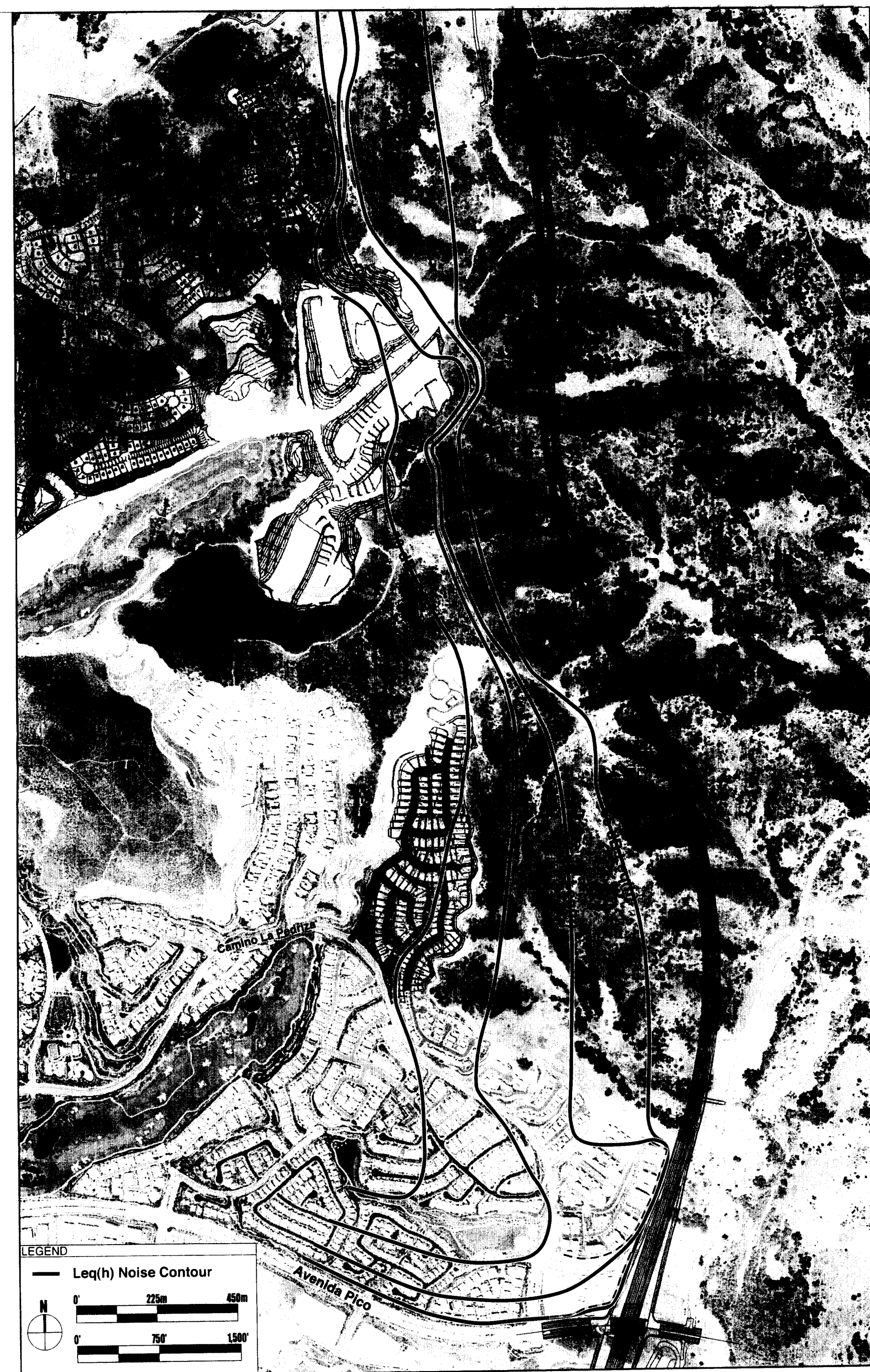
Sound Wall ID	**SW - 063**		**Receptors 063a & 063b**		
Predicted Without Sound Wall					
Absolute With Project Noise Level, Leq(h) dBA*		66			
Increase over Existing, dBA*		16			
Predicted With Sound Wall					
Wall Height	2.4m (8')	3m (10')	3.7m (12')	4.3m (14')	4.9m (16')
Insertion Loss (Noise Reduction), dBA*	5	6	7	7	8
No. Benefited Residences	35	35	35	35	35
New Highway or More than 50% of Residences Predate 1978?	Yes	Yes	Yes	Yes	Yes
Reasonable Allowance Per Benefited Residence	$37,000	$39,000	$39,000	$39,000	$39,000
Estimated Cost Per Residence	$5,450	$6,812	$8,174	$9,537	$10,899
Reasonable ?	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**

Sound Wall ID	**SW-063L**		**Receptors 063l, 063m, 063n & 063o**		
Predicted Without Sound Wall					
Absolute With Project Noise Level, Leq(h) dBA*		73			
Increase over Existing, dBA*		23			
Predicted With Sound Wall					
Wall Height	2.4m (8')	3m (10')	3.7m (12')	4.3m (14')	4.9m (16')
Insertion Loss (Noise Reduction), dBA*	5	6	8	10	11
No. Benefited Residences	20	20	20	20	20
New Highway or More than 50% of Residences Predate 1978?	Yes	Yes	Yes	Yes	No
Reasonable Allowance Per Benefited Residence	$39,000	$41,000	$41,000	$43,000	$43,000
Estimated Cost Per Residence	$5,998	$7,497	$8,996	$10,496	$11,995
Reasonable ?	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**

* At Critical Receptor
† Assuming cost of $151 per square meter ($14 per square foot)



Sound Walls SW-063 & SW-063I
Initial & Ultimate FEC-W & A7C-FEC-M Alternatives



Peak Hour Traffic Noise Leq (h) Contours
With Ultimate FEC-W & A7C-FEC-M Alternatives-Mitigated

Table 5.2-7
With Out of Right-of-Way Barrier Noise Levels for FEC-W and A7C-FEC-M Initial Alternatives

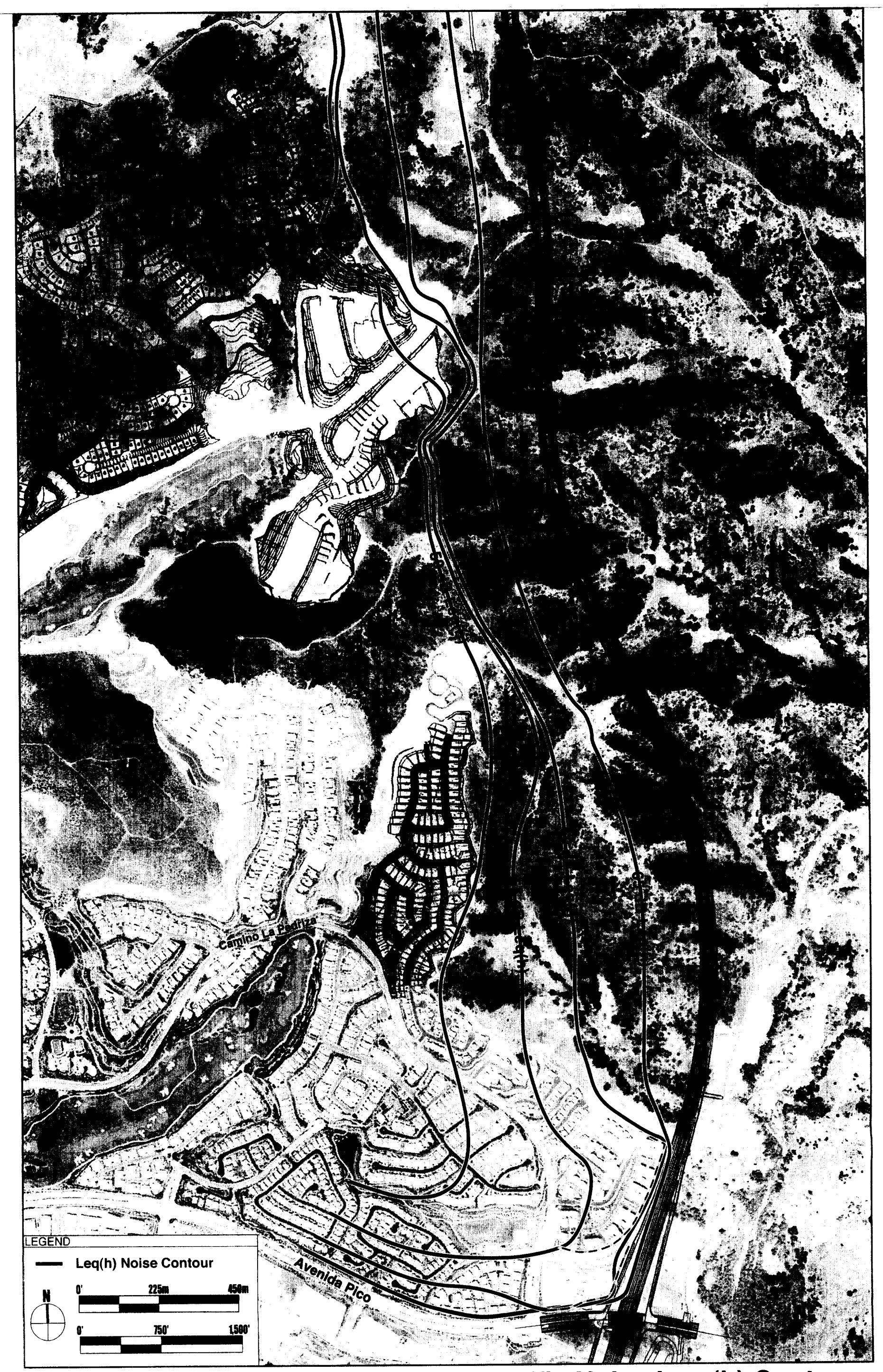
	Peak Hour Noise Level and Insertion Loss With Barrier of Height					
Receptor	**None**	**2.4m (8')**	**3m (10')**	**3.7m (12')**	**4.3m (14')**	**4.9m (16')**
063a	63	60 (-3)	59 (-4)	58 (-5)	58 (-5)	57 (-6)
063b	63	59 (-4)	58 (-5)	57 (-6)	56 (-7)	55 (-8)
063c	59	59 (0)	59 (0)	59 (0)	59 (0)	59 (0)
063d	58	57 (-1)	56 (-2)	56 (-2)	56 (-2)	55 (-2)
063e	52	52 (0)	52 (0)	52 (0)	52 (0)	52 (0)
063f	53	52 (0)	52 (0)	52 (0)	52 (0)	52 (0)
063g	52	52 (0)	52 (-1)	51 (-1)	51 (-1)	51 (-1)
063h	51	51 (0)	51 (0)	51 (0)	51 (0)	51 (0)
063i	55	55 (0)	55 (0)	55 (-1)	54 (-1)	54 (-1)
063j	53	53 (0)	53 (0)	53 (0)	53 (0)	53 (0)
063k	50	50 (0)	50 (0)	50 (0)	50 (0)	50 (0)
063l	68	65 (-3)	64 (-5)	63 (-6)	62 (-7)	61 (-7)
063m	70	66 (-4)	64 (-6)	63 (-7)	61 (-9)	60 (-10)
063n	65	63 (-2)	62 (-3)	61 (-4)	60 (-6)	59 (-7)
063o	61	60 (-1)	59 (-2)	58 (-3)	57 (-4)	56 (-5)
063p	59	58 (-2)	57 (-2)	57 (-3)	56 (-3)	55 (-4)
063q	56	56 (0)	56 (0)	56 (0)	56 (-1)	55 (-1)
063r	52	52 (0)	52 (0)	52 (0)	52 (0)	51 (0)
063s	51	51 (0)	51 (0)	51 (0)	51 (0)	51 (0)
063t	57	57 (0)	57 (0)	57 (0)	57 (0)	57 (0)
063u	50	50 (0)	50 (0)	50 (0)	50 (0)	50 (0)
063v	51	51 (0)	51 (0)	51 (0)	51 (0)	51 (0)
063w	50	50 (0)	50 (0)	50 (0)	50 (0)	50 (0)
063x	48	48 (0)	48 (0)	48 (0)	48 (0)	48 (0)

Table 5.2-8
Preliminary Sound Wall Reasonableness Determination FEC-W and A7C-FEC-M Initial Alternatives

Sound Wall ID	**SW - 063**		**Receptors 063a & 063b**		
Predicted Without Sound Wall					
Absolute With Project Noise Level, Leq(h) dBA*		63			
Increase over Existing, dBA*		13			
Predicted With Sound Wall					
Wall Height	2.4m (8')	3m (10')	3.7m (12')	4.3m (14')	4.9m (16')
Insertion Loss (Noise Reduction), dBA*	4	5	6	6	8
No. Benefited Residences	35	35	35	35	35
New Highway or More than 50% of Residences Predate 1978?	Yes	Yes	Yes	Yes	Yes
Reasonable Allowance Per Benefited Residence	Not Feasible	$37,000	$39,000	$39,000	$39,000
Estimated Cost Per Residence	$5,450	$6,812	$8,174	$9,537	$10,899
Reasonable ?	**n/a**	**Yes**	**Yes**	**Yes**	**Yes**

Sound Wall ID	**SW-063L**		**Receptors 063l, 063m, 063n & 063o**		
Predicted Without Sound Wall					
Absolute With Project Noise Level, Leq(h) dBA*		70			
Increase over Existing, dBA*		20			
Predicted With Sound Wall					
Wall Height	2.4m (8')	3m (10')	3.7m (12')	4.3m (14')	4.9m (16')
Insertion Loss (Noise Reduction), dBA*	4	6	9	9	10
No. Benefited Residences	20	20	20	20	20
New Highway or More than 50% of Residences Predate 1978?	Yes	Yes	Yes	Yes	No
Reasonable Allowance Per Benefited Residence	Not Feasible	$41,000	$43,000	$43,000	$43,000
Estimated Cost Per Residence	$5,998	$7,497	$8,996	$10,496	$11,995
Reasonable ?	**n/a**	**Yes**	**Yes**	**Yes**	**Yes**

* At Critical Receptor
† Assuming cost of $151 per square meter ($14 per square foot)



Peak Hour Traffic Noise Leq (h) Contours With Initial FEC-W & A7C-FEC-M Alternatives-Mitigated

SECTION 6.0
CEQA SIGNIFICANCE

This Section examines the impacts of the South Orange County Transportation Infrastructure Improvement Project (SOCTIIP) alternatives in terms of California Environmental Quality Act (CEQA) criteria. As discussed in Section 1.0, there are different criteria for assessing project related noise impacts in terms of CEQA and the National Environmental Policy Act (NEPA). The Federal Highway Administration's (FHWA's) NEPA noise criteria are in terms of peak hour Leq. The noise impacts of the SOCTIIP alternatives were evaluated using the NEPA criteria in Section 5.0.

The CEQA noise criteria are in terms of local municipalities' defined noise standards. The County of Orange and the cities in the SOCTIIP study area have established noise standards that are in terms of the Community Noise Equivalent Level (CNEL) measurement. The potential noise impacts of the Far East Corridor-Modified (FEC-M), Far East Corridor-West (FEC-W) and Alignment 7-Far East Crossover-Modified (A7C-FEC-M) SOCTIIP alternatives on the Talega Community in terms of CNEL are discussed in this Section.

The existing environment in terms of CNEL is discussed in Section 6.1. Section 6.2 presents the CEQA significance thresholds for noise impacts based on the local jurisdictions' noise standards. The potential noise impacts to the Talega Community along the three SOCTIIP build alternatives are assessed in Section 6.3. Cumulative noise impacts are discussed in Section 6.4. Section 6.5 provides the mitigation for the identified significant adverse noise impacts of the SOCTIIP alternatives.

CEQA requires that each significant impact be identified in the Environmental Impact Report (EIR) (Public Resources Code Section 21082.2). In this Section, references to significant adverse impacts of the SOCTIIP alternatives related to noise impacts are made to fulfill the requirements of CEQA. No representation as to significance made in this Section represents an assessment of the magnitude of such an impact under the requirements of federal law. Under NEPA, no determination need be made for each environmental effect. The Council on Environmental Quality (CEQ) regulations implementing NEPA state that "significantly" as used in NEPA requires consideration of both the context and the severity/intensity of the impacts of a project. The CEQ regulations recognize that the significance of an action must be analyzed in several contexts such as the society as a whole, the affected region, the affected interests and the locality. Significance varies with the setting of the proposed action (40 CFR Section 1508.27).

6.1 EXISTING ENVIRONMENT

For the receptors in the study area, the existing CNEL levels were assumed to be the same as the measured Leq levels presented in Section 4.0. This is a worst-case assumption because CNEL noise levels are typically a few dB higher than the average daytime noise levels that the measured Leq levels in Section 4 represent. Therefore, this assumption will result in slightly lower CNEL levels than actual levels in the areas along the alignments of the corridor alternatives. Because the significance threshold, discussed below, is in terms of an increase in noise increase over existing conditions, assuming a lower existing condition (that is, a lower CNEL value) will result in a greater increase in noise when comparing future with project conditions to existing noise levels. As discussed later in this Section, the existing CNEL levels

estimated for these receptors were used as an estimate for the future no-project CNEL noise levels at these receptors.

6.2 CEQA THRESHOLDS OF SIGNIFICANCE

The thresholds used for assessing the significance of short and long term noise impacts associated with the SOCTIIP alternatives, consistent with the requirements of CEQA, are described in the following sections.

6 2.1 LONG TERM, PERMANENT THRESHOLDS UNDER CEQA

In terms of local municipalities' CNEL standards, the criteria for determining impacts are based on the noise level increase caused by a project in combination with the resulting absolute noise level. An impact occurs if a project results in a substantial noise increase and the with project noise level exceeds a local municipality's CNEL standards, as explained in detail below.

To cause a significant adverse impact, a project alternative must first cause a substantial increase in future CNEL levels at a sensitive receptor. In community noise assessment, changes in noise levels greater than three dB are often identified as substantial. Changes less than one dB will not be discernible to local residents. In the range of one to three dB, residents who are very sensitive to noise may perceive a slight change in noise levels. There is no scientific evidence available to support the use of three dB as the threshold. In laboratory testing situations, humans are able to detect noise level changes of slightly less than one dB. However, in a community noise situation, noise exposures are over a long period and changes in noise levels occur over years, rather than the immediate comparison made in a laboratory situation. Therefore, the level at which changes in community noise levels become discernible is likely to be some value greater than one dB, and three dB appears to be appropriate for most people.

A project alternative that causes a noise level increase of 3 dB or more is considered to result in a substantial noise increase. The increase in noise level caused by the project alternative is the difference in the future noise level with the project alternative and the future noise level without the project alternative. The increase in future noise levels with a project alternative, compared to existing conditions, is a result of both the project alternative and overall growth in the region. If the noise level increase over existing conditions is greater than 3 dB and the project alternative causes more than 1 dB of this increase, that project alternative is considered to result in a substantial combined noise increase. If either increase is realized, a second condition must occur for a significant adverse noise impact to result from the project alternative.

The second condition that must occur for an impact to be considered significant and adverse in terms of the local municipalities' CNEL standards is that the increase results in a future noise level which exceeds the local municipalities' CNEL standard. All the municipalities in south Orange County have established an exterior residential CNEL standard of 65 CNEL. The County does not have an applicable noise standard relating to parks. However, all the Cities in the study area have established a 65 CNEL noise standard for parks. In some Cities, the park standard is only applicable at picnic areas and in others it is applicable at picnic areas, playgrounds and areas of frequent human activity. For this analysis, the broader scope of the standard was assumed and noise levels were evaluated at potentially impacted park picnic areas, playgrounds and areas of frequent human activity.

Analysis of impacts in terms of local municipalities' CNEL standards is applicable to areas along new roads constructed by the SOCTIIP alternatives and along existing roads that would be modified by the SOCTIIP alternatives (i.e. addition of lanes). It is also applicable to roads that would not be physically modified by the SOCTIIP alternatives but on which traffic volumes would change as a result of the SOCTIIP alternatives.

6.3 POTENTIAL NOISE IMPACTS

As discussed in Section 6.2.2, long-term significant adverse noise impacts occur when a project causes a substantial noise increase and the resulting noise level is in excess of the local municipality's noise standard. The applicable noise standard for the SOCTIIP alternatives is the 65 CNEL threshold for residential uses. This standard is also applicable to parks. The following Sections analyze the potential noise impacts in the Talega Community along the Far East Corridor-Modified (FEC-M), Far East Corridor-West (FEC-W) and Alignment 7-Far East Crossover-Modified (A7C-FEC-M) SOCTIIP alternatives. CNEL noise levels are assessed at the residential and park receptors previously discussed and analyzed in Sections 3.0, 4.0 and 5.0 and as shown in Figure 3.3-1. Absolute noise levels and noise level increases were calculated for each of these receptors, as provided in Section 6.3.1.

These calculated CNEL noise levels are based on ADT volumes presented in the traffic study prepared for the SOCTIIP alternatives. In the traffic study, traffic volumes with the project alternatives were calculated for four scenarios. These scenarios were two variations of the background road network, two levels of development on the Rancho Mission Viejo (RMV), and with and without tolls for all the Orange County toll roads. Section 2.0 of the traffic study provides a detailed description of these scenarios. For the assessment of long term, operations noise impacts along the alignments of the SOCTIIP build alternatives, the analysis in Section 6.3.1 represents a worst case. The traffic scenario that generates the highest with project alternative noise levels was used to calculate the with project noise levels.

6 3.1 IMPACTS ALONG ALIGNMENTS OF THE SOCTIIP ALTERNATIVES

Tables 6.3-1 and 6.3-2 provide CNEL noise levels at the residential and park receptors presented in Section 3.3.1 and Figure 3.3-1, for the three SOCTIIP build alternatives analyzed in this study. For each project alternative analyzed in this supplement, the existing CNEL noise level and future no project noise level for each receptor analyzed are provided. The existing noise levels were determined as discussed in Section 6.1. The future no project CNEL level was assumed not to change from existing conditions, which is a worst-case assumption. At many receptors, traffic volumes and other noise producing activities will increase in future years, likely resulting in somewhat higher CNEL noise levels at these receptors. As a result, by assuming that the future noise levels at these receptors are the same as the existing noise levels result in a lower than actual future no project CNEL level prediction. Because the significance threshold is in terms of the increases in noise levels caused by project alternatives, this will tend to result in an over estimate of with project impacts, which is worst case analysis.

The with project CNEL noise levels in Tables 6.3-1 and 6.3-2 were calculated based on the peak hour Leq(h) noise levels in Section 4.0 and the projected ADTs for the project alternatives from the traffic study. The difference between the CNEL and Leq(h) for a road segment was calculated based on the traffic volume used in calculating the peak hour Leq(h) noise level and the ADT projected for the nearest road segment. This difference was applied to the modeled

peak hour Leq(h) noise level to generate the CNEL noise level at each receptor. For each alternative, between two and four traffic scenarios were modeled. The with project noise levels in Tables 6.3-1 and 6.3-2 are the highest noise level values for any of the traffic scenarios modeled for these alternatives. In general, there was not a substantial difference in the future, with project noise levels under the different traffic scenarios. Using the highest noise levels for any of the traffic scenarios analyzed results in the greatest identification of noise impacts and a worst case representation of future with project noise impacts.

For each project alternative, the increase in noise levels over existing conditions and the increase due to the project alternative are shown in Tables 6.3-1 and 6.3-2. This allows for comparison of these increases in noise levels to the identified significance thresholds. The changes in noise levels between existing conditions and future with project conditions were calculated using tenths of a decibel and then rounded to whole decibels. Therefore, the increases shown in these tables may not add or subtract exactly due to this rounding.

Table 6.3-1 provides the future with project CNEL noise levels for the Far East Corridor-Modified (FEC-M), Far East Corridor -West (FEC-W), and Alignment 7 Corridor-Far East Crossover-Modified (A7C-FEC-M)-Ultimate Alternatives. Table 6.3-2 provides the future with project CNEL noise levels for the initial configurations of these Refined Alternatives. The data in these tables are discussed by Alternative in the following Sections.

6.3.1.1 FEC-M-Ultimate and Initial Alternatives

Table 6.3-1 shows that the FEC-M-Ultimate Alternative is projected to significantly impact two of the 55 analyzed receptors, which represent approximately 10 residences (Receptors 063l and 063m). The FEC-M-Ultimate Alternative would result in a substantial noise increase at both these receptors, compared to the future no project noise levels. Mitigation is required for these two receptors under the FEC-M-Ultimate Alternative.

Table 6.3-1 shows that at several receptors, the noise levels with the project are projected to be lower than the existing and future no project noise levels. The future with project noise levels include only noise generated by the FEC-M-Ultimate Alternative. The existing and future CNEL levels without the project were estimated from noise measurements. These measurements include all noise sources in the area. Therefore, Table 6.3-1 shows that the noise levels generated by traffic under the FEC-M-Ultimate Alternative would be less than the existing noise level. However, this does not mean that the traffic would be inaudible at these locations at all times. At some times, other noise sources would mask the traffic noise from the corridor and, therefore, the traffic noise under the FEC-M-Ultimate Alternative would be inaudible or indistinguishable. At other times, these other noise sources would not be present or would be low enough that the corridor traffic noise would be discernable.

Table 6.3-2 shows the FEC-M-Initial Alternative would result in similar noise impacts as the FEC-M-Ultimate Alternative. Under the FEC-M-Initial Alternative, the same two receptors (063l and 063m) would be significantly impacted and mitigation is required.

For illustrative purposes Figure 6.3-1 presents the traffic noise CNEL contours in the analysis area with the FEC-M-Ultimate Alternative without any mitigation. Figure 6.3-4 presents the traffic noise CNEL contours in the analysis area with the FEC-M-Initial Alternative without any mitigation.

6.3.1.2 FEC-W-Ultimate and Initial Alternatives

Table 6.3-1 shows that the FEC-W-Ultimate Alternative is projected to significantly impact two of the 55 analyzed receptors, which represent approximately 10 residences (Receptors 063l and 063m). The FEC-W-Ultimate Alternative would result in a substantial noise increase at both these receptors, compared to the future no project noise levels. Mitigation is required for these two receptors under the FEC-W-Ultimate Alternative.

Table 6.3-1 shows that at several receptors, the noise levels with the project are projected to be lower than the existing and future no project noise levels. The future with project noise levels include only noise generated by the FEC-W-Ultimate Alternative. The existing and future CNEL levels without the project were estimated from noise measurements. These measurements include all noise sources in the area. Therefore, Table 6.3-1 shows that the noise levels generated by traffic under the FEC-W-Ultimate Alternative would be less than the existing noise level. However, this does not mean that the traffic would be inaudible at these locations at all times. At some times, other noise sources would mask the traffic noise from the corridor and, therefore, the traffic noise under the FEC-W-Ultimate Alternative would be inaudible or indistinguishable. At other times, these other noise sources would not be present or would be low enough that the corridor traffic noise would be discernable.

Table 6.3-2 shows the FEC-W-Initial Alternative would result in similar noise impacts as the FEC-M-Ultimate Alternative. Under the FEC-W-Initial Alternative, the same two receptors (063l and 063m) would be significantly impacted and mitigation is required.

For illustrative purposes Figure 6.3-2 presents the traffic noise CNEL contours in the analysis area with the FEC-W-Ultimate Alternative without any mitigation. Figure 6.3-5 presents the traffic noise CNEL contours in the analysis area with the FEC-W-Initial Alternative without any mitigation.

6.3.1.3 A7C-FEC-M-Ultimate and Initial Alternatives

Table 6.3-1 shows that the A7C-FEC-M-Ultimate Alternative is projected to significantly impact two of the 55 analyzed receptors, which represent approximately 10 residences (Receptors 063l and 063m). The A7C-FEC-M-Ultimate Alternative would result in a substantial noise increase at both these receptors, compared to the future no project noise levels. Mitigation is required for these two receptors under the A7C-FEC-M-Ultimate Alternative.

Table 6.3-1 shows that at several receptors, the noise levels with the project are projected to be lower than the existing and future no project noise levels. The future with project noise levels include only noise generated by the A7C-FEC-M-Ultimate Alternative. The existing and future CNEL levels without the project were estimated from noise measurements. These measurements include all noise sources in the area. Therefore, Table 6.3-1 shows that the noise levels generated by traffic under the A7C-FEC-M-Ultimate Alternative would be less than the existing noise level. However, this does not mean that the traffic would be inaudible at these locations at all times. At some times, other noise sources would mask the traffic noise from the corridor and, therefore, the traffic noise under the A7C-FEC-M-Ultimate Alternative would be inaudible or indistinguishable. At other times, these other noise sources would not be present or would be low enough that the corridor traffic noise would be discernable.

Table 6.3-2 shows the A7C-FEC-M-Initial Alternative would result in similar noise impacts as the FEC-M-Ultimate Alternative. Under the A7C-FEC-M-Initial Alternative, the same two receptors (063l and 063m) would be significantly impacted and mitigation is required.

For illustrative purposes Figure 6.3-3 presents the traffic noise CNEL contours in the analysis area with the A7C-FEC-M-Ultimate Alternative without any mitigation. Figure 6.3-6 presents the traffic noise CNEL contours in the analysis area with the A7C-FEC-M-Initial Alternative without any mitigation.

6 3.2 IMPACTS ALONG ROADS NOT PHYSICALLED ALTERED BY ALTERNATIVES

Noise level changes along roads that would not be physically modified were assessed in the primary Noise Assessment prepared for the project. The only arterial roadway not in the newly developed areas in the Talega Community is Avenida Talega. None of the SOCTIIP Alternatives is projected result substantial traffic increase (i.e. increase CNEL levels by 1 dB or more) along Avenida Talega. While future traffic noise levels are projected to increase substantially over existing conditions, this is due to the planned development in the area. These homes have been developed in compliance with the City of San Clemente standards taking into account the future traffic conditions. Therefore, development of any of the SOCTIIP alternatives will not result in a significant noise impact along any roads not physically modified by the project in the areas of the Talega Community developed since the preparation of the primary Noise Assessment

6.4 CUMULATIVE NOISE IMPACTS

Cumulative impacts are impacts that are a result of the proposed project and other actions in the same study area. For this analysis, cumulative noise impacts are those impacts that occur when the proposed SOCTIIP project is analyzed with the traffic scenarios that assume buildout of the MPAH., and other reasonably foreseeable projects. This includes three traffic scenarios, with RMV developed with 14,000 dus, RMV developed with 21,000 dus, and with RMV developed with 21,000 dus and all of the toll roads in Orange County operating toll-free (the first two scenarios assume the toll roads operating under existing conditions). As discussed in Section 6.3.1, the analysis of impacts along the alignments of the SOCTIIP build alternatives is for the worst-case traffic scenario. Therefore, the analysis presented in Section 6.3.1 represents both cumulative and project specific impacts.

6 4.1 IMPACTS ALONG THE ALIGNMENTS OF THE SOCTIIP BUILD ALTERNATIVES

As discussed in Section 6.3.1, the analysis of impacts along the alignments of the SOCTIIP build alternatives is for the worst-case traffic scenario and the analysis in Section 6.3.1 is for both cumulative and project impacts. Therefore, no additional analysis is presented in this Section. Section 6.3.1 shows that there would be significant noise impacts along the SOCTIIP Build Alternatives analyzed. All of these impacts are due to the project. Mitigation is required for all of the impacts.

6.5 NOISE MITIGATION

6 5.1 MITIGATION ALONG THE ALIGNMENTS OF THE SOCTIIP BUILD ALTERNATIVES

The analysis in Section 6.3.1 indicates that all three of 11 the build alternatives assessed in this report result in significant adverse noise impacts at one or more receptors. As discussed in Section 5.2, the only practical way to mitigate outdoor traffic noise levels is through the construction of noise barriers. Section 5.2 presented the noise barriers required to meet the FHWA noise criteria. In all cases, the walls required to meet the FHWA noise criteria would also mitigate the CNEL noise impacts along the alignments of the SOCTIIP build alternatives identified in Section 6.3. 1. Tables 6.5-1 through 6.5-6 present the future with project noise CNEL levels with the five wall heights analyzed in Section 5.2. For each receptor, the noise level with the wall height recommended in Section 5.2 is shown in bold. These tables are discussed by Alternative in the following Sections.

6.5.1.1 Mitigation for FEC-M-Ultimate Alternative

Table 6.5-1 shows the CNEL noise levels at the receptors impacted by the FEC-M-Ultimate Alternative as discussed in Section 6.3.1.1 and shown in Table 6.3-1 with the same five noise barrier heights assessed in Section 5.2. The CNEL noise level with the barrier heights recommended for this Alternative in Section 5.1.1.1 are shown in bold.

Table 6.5-1 shows that, for Receptors 063l and 063m, the recommended barrier would reduce the CNEL noise level to below 65 CNEL, mitigating this adverse impact of the FEC-M-Ultimate Alternative to below a level of significance.

With the sound walls required to abate traffic noise per the FHWA criteria, the noise impacts identified in Section 6.3.1.1 for the FEC-M-Ultimate Alternative would be mitigated to below a level of significance as shown in Table 6.5-1.

For illustrative purposes Figure 6.5-1 presents the traffic noise CNEL contours in the analysis area with the FEC-M-Ultimate Alternative and the proposed mitigation (i.e. Sound walls SW-063 and SW-063l constructed with heights of 4.9m (16') at locations shown in Figure 5.2-1).

6.5.1.2 Mitigation for FEC-M-Initial Alternative

Table 6.5-2 shows the CNEL noise levels at the receptors impacted by the FEC-M-Initial Alternative as discussed in Section 6.3.1.1 and shown in Table 6.3-2 with the same five noise barrier heights assessed in Section 5.2. The CNEL noise level with the barrier heights recommended for this Alternative in Section 5.1.1.2 are shown in bold.

Table 6.5-2 shows that, for Receptors 063l and 063m, the recommended barrier would reduce the CNEL noise level to below 65 CNEL, mitigating this adverse impact of the FEC-M-Initial Alternative to below a level of significance.

With the sound walls required to abate traffic noise per the FHWA criteria, the noise impacts identified in Section 6.3.1.1 for the FEC-M-Initial Alternative would be mitigated to below a level of significance as shown in Table 6.5-2.

For illustrative purposes Figure 6.5-2 presents the traffic noise CNEL contours in the analysis area with the FEC-M-Ultimate Alternative and the proposed mitigation (i.e. Sound walls SW-063 and SW-063l constructed with heights of 4.9m (16') at locations shown in Figure 5.2-1).

6.5.1.3 Mitigation for FEC-W-Ultimate Alternative

Table 6.5-3 shows the CNEL noise levels at the receptors impacted by the FEC-W-Ultimate Alternative as discussed in Section 6.3.1.2 and shown in Table 6.3-1 with the same five noise barrier heights assessed in Section 5.2. The CNEL noise level with the barrier heights recommended for this Alternative in Section 5.1.1.3 are shown in bold.

Table 6.5-3 shows that, for Receptors 063l and 063m, the recommended barrier would reduce the CNEL noise level to below 65 CNEL, mitigating this adverse impact of the FEC-W-Ultimate Alternative to below a level of significance.

With the sound walls required to abate traffic noise per the FHWA criteria, the noise impacts identified in Section 6.3.1.2 for the FEC-W-Ultimate Alternative would be mitigated to below a level of significance as shown in Table 6.5-3.

For illustrative purposes Figure 6.5-3 presents the traffic noise CNEL contours in the analysis area with the FEC-W-Ultimate Alternative and the proposed mitigation (i.e. Sound walls SW-063 and SW-063l constructed with heights of 4.9m (16') at locations shown in Figure 5.2-4).

6.5.1.4 Mitigation for FEC-W-Initial Alternative

Table 6.5-4 shows the CNEL noise levels at the receptors impacted by the FEC-W-Initial Alternative as discussed in Section 6.3.1.4 and shown in Table 6.3-2 with the same five noise barrier heights assessed in Section 5.2. The CNEL noise level with the barrier heights recommended for this Alternative in Section 5.1.1.4 are shown in bold.

Table 6.5-4 shows that, for Receptors 063l and 063m, the recommended barrier would reduce the CNEL noise level to below 65 CNEL, mitigating this adverse impact of the FEC-W-Initial Alternative to below a level of significance.

With the sound walls required to abate traffic noise per the FHWA criteria, the noise impacts identified in Section 6.3.1.2 for the FEC-W-Initial Alternative would be mitigated to below a level of significance as shown in Table 6.5-4

For illustrative purposes Figure 6.5-4 presents the traffic noise CNEL contours in the analysis area with the FEC-W-Ultimate Alternative and the proposed mitigation (i.e. Sound walls SW-063 and SW-063l constructed with heights of 4.9m (16') at locations shown in Figure 5.2-4).

6.5.1.5 Mitigation for A7C-FEC-M-Ultimate Alternative

Table 6.5-5 shows the CNEL noise levels at the receptors impacted by the A7C-FEC-M-Ultimate Alternative as discussed in Section 6.3.1.3 and shown in Table 6.3-1 with the same five noise barrier heights assessed in Section 5.2. The CNEL noise level with the barrier heights recommended for this Alternative in Section 5.1.1.5 are shown in bold.

Table 6.5-5 shows that, for Receptors 063l and 063m, the recommended barrier would reduce the CNEL noise level to below 65 CNEL, mitigating this adverse impact of the A7C-FEC-M-Ultimate Alternative to below a level of significance.

With the sound walls required to abate traffic noise per the FHWA criteria, the noise impacts identified in Section 6.3.1.3 for the A7C-FEC-M-Ultimate Alternative would be mitigated to below a level of significance as shown in Table 6.5-5.

For illustrative purposes Figure 6.5-5 presents the traffic noise CNEL contours in the analysis area with the A7C-FEC-M-Ultimate Alternative and the proposed mitigation (i.e. Sound walls SW-063 and SW-063l constructed with heights of 4.9m (16') at locations shown in Figure 5.2-4).

6.5.1.6 Mitigation for A7C-FEC-M-Initial Alternative

Table 6.5-6 shows the CNEL noise levels at the receptors impacted by the A7C-FEC-M-Initial Alternative as discussed in Section 6.3.1.3 and shown in Table 6.3-2 with the same five noise barrier heights assessed in Section 5.2. The CNEL noise level with the barrier heights recommended for this Alternative in Section 5.1.1.6 are shown in bold.

Table 6.5-6 shows that, for Receptors 063l and 063m, the recommended barrier would reduce the CNEL noise level to below 65 CNEL, mitigating this adverse impact of the A7C-FEC-M-Initial Alternative to below a level of significance.

With the sound walls required to abate traffic noise per the FHWA criteria, the noise impacts identified in Section 6.3.1.5 for the A7C-FEC-M-Initial Alternative would be mitigated to below a level of significance as shown in Table 6.5-6.

For illustrative purposes Figure 6.5-6 presents the traffic noise CNEL contours in the analysis area with the A7C-FEC-M-Ultimate Alternative and the proposed mitigation (i.e. Sound walls SW-063 and SW-063l constructed with heights of 4.9m (16') at locations shown in Figure 5.2-4).

6.5.1.7 Level of Significance of Long Term Permanent Impacts, After Mitigation

All the significant adverse noise impacts along all the SOCTIIP build alternatives in the Talega Community would be mitigated to below a level of significance with the implementation of the mitigation measures discussed above.

6 5.2 CUMULATIVE IMPACT MITIGATION

6.5.2.1 Mitigation Along SOCTIIP Alternative Alignments

As discussed in Section 6.4, the analysis of impacts along the alignments of the SOCTIIP build alternatives is for the worst case traffic scenario. Therefore, the mitigation measures in Section 6.5.1 are for both cumulative and project related long term noise impacts. This analysis shows that the sound walls required to meet the FHWA noise criteria would mitigate significant adverse noise impacts to below a level of significance. Therfore, all substantial cumulative noise impacts along the alignments of the SOCTIIP build alternatives would be mitigated to below a level of significance.

6.5.2.2 Level of Significance of Cumulative Impacts, After Mitigation

All significant cumulative noise impacts along all the SOCTIIP build alternatives are mitigated to below a level of significance with the implementation of the mitigation measures discussed above.

Table 6.3-1
CNEL Noise Levels and Changes Along Refined Corridor Alternatives With Ultimate Configuration

Receptor ID	Existing CNEL	Future CNEL w/o Project	FEC-M			FEC-W			A7C-FEC-M		
			CNEL	Δ Existing	Δ Due to Project	CNEL	Δ Existing	Δ Due to Project	CNEL	Δ Existing	Δ Due to Project
T01	45	45	34	-11	-11	44	-1	-1	43	-2	-2
T02	45	45	34	-11	-11	42	-3	-3	42	-3	-3
T03	45	45	34	-11	-11	42	-3	-3	42	-3	-3
T04	45	45	35	-10	-10	43	-2	-2	42	-3	-3
T05	45	45	41	-4	-4	52	7	7	51	6	6
T06	45	45	40	-6	-6	51	6	6	50	5	5
T07	45	45	37	-8	-8	48	3	3	48	3	3
T08	45	45	37	-8	-8	45	-1	-1	44	-1	-1
T09	45	45	39	-6	-6	52	7	7	51	6	6
T10	45	45	37	-8	-8	52	7	7	51	6	6
T11	45	45	37	-9	-9	47	2	2	47	2	2
T12	45	45	38	-7	-7	47	2	2	47	2	2
T13	45	45	38	-7	-7	46	1	1	46	1	1
T14	45	45	35	-10	-10	41	-4	-4	41	-4	-4
T15	45	45	39	-6	-6	44	-1	-1	44	-1	-1
T16	45	45	35	-10	-10	43	-2	-2	42	-3	-3
T17	45	45	35	-10	-10	43	-2	-2	42	-3	-3
T18	45	45	36	-9	-9	45	0	0	44	-1	-1
T19	45	45	33	-12	-12	42	-4	-4	41	-4	-4
T20	45	45	35	-10	-10	45	0	0	44	-1	-1
T21	45	45	36	-10	-10	45	0	0	45	-1	-1
T22	45	45	32	-13	-13	40	-5	-5	39	-6	-6
T23	45	45	31	-14	-14	40	-6	-6	39	-6	-6
T24	45	45	31	-14	-14	40	-5	-5	40	-5	-5
T25	45	45	31	-15	-15	41	-5	-5	40	-5	-5
T26	45	45	31	-15	-15	40	-5	-5	39	-6	-6
063a	50	50	61	11	11	61	11	11	61	11	11
063b	50	50	61	11	11	61	11	11	60	10	10
063c	50	50	56	6	6	57	7	7	56	6	6
063d	50	50	55	5	5	57	7	7	56	6	6
063e	50	50	50	-1	-1	50	0	0	50	0	0
063f	50	50	50	0	0	51	1	1	50	0	0
063g	50	50	50	0	0	51	1	1	50	0	0
063h	50	50	49	-1	-1	49	-1	-1	49	-1	-1

Table 6.3-1
CNEL Noise Levels and Changes Along Refined Corridor Alternatives With Ultimate Configuration

Receptor ID	Existing CNEL	Future CNEL w/o Project	FEC-M			FEC-W			A7C-FEC-M		
			CNEL	Δ Existing	Δ Due to Project	CNEL	Δ Existing	Δ Due to Project	CNEL	Δ Existing	Δ Due to Project
063i	50	50	53	3	3	54	4	4	53	3	3
063j	50	50	50	0	0	51	1	1	50	0	0
063k	50	50	47	-3	-3	48	-2	-2	48	-3	-3
063l	50	50	**66**	**16**	**16**	**67**	**17**	**17**	**67**	**17**	**17**
063m	50	50	**67**	**17**	**17**	**68**	**18**	**18**	**68**	**18**	**18**
063n	50	50	63	13	13	64	14	14	64	14	14
063o	50	50	59	9	9	60	10	10	59	9	9
063p	50	50	57	7	7	58	8	8	58	8	8
063q	50	50	54	4	4	55	5	5	54	4	4
063r	50	50	50	0	0	51	1	1	50	0	0
063s	50	50	49	-1	-1	50	0	0	49	-1	-1
063t	50	50	54	4	4	55	5	5	55	5	5
063u	50	50	47	-3	-3	48	-2	-2	48	-2	-2
063v	50	50	48	-2	-2	49	-1	-1	49	-1	-1
063w	50	50	47	-3	-3	48	-2	-2	47	-3	-3
063x	50	50	45	-5	-5	46	-4	-4	46	-5	-5
070b	45	45	38	-7	-7	40	-5	-5	40	-5	-5
070c	45	45	45	0	0	47	2	2	46	1	1
070d	45	45	43	-3	-3	46	1	1	45	0	0
070e	45	45	43	-2	-2	46	1	1	45	0	0
070f	45	45	44	-1	-1	46	1	1	46	1	1

Bold cells indicate receptors projected to experience a substantial noise increase and noise levels over the 65 CNEL standard
Differences may not be exact due to rounding.

Traffic Noise CNEL Contours With Ultimate FEC-M Alternative

Traffic Noise CNEL Contours With Ultimate FEC-W Alternative

Traffic Noise CNEL Contours With Ultimate A7C-FEC-M Alternative

Table 6.3-2
CNEL Noise Levels and Changes Along Refined Corridor Alternatives With Initial Configuration

Receptor ID	Existing CNEL	Future CNEL w/o Project	FEC-M			FEC-W			A7C-FEC-M		
			CNEL	Δ Existing	Δ Due to Project	CNEL	Δ Existing	Δ Due to Project	CNEL	Δ Existing	Δ Due to Project
T01	45	45	34	-11	-11	44	-1	-1	44	-1	-1
T02	45	45	34	-11	-11	43	-2	-2	42	-3	-3
T03	45	45	34	-11	-11	43	-2	-2	42	-3	-3
T04	45	45	35	-10	-10	43	-2	-2	43	-2	-2
T05	45	45	41	-4	-4	52	7	7	52	7	7
T06	45	45	40	-5	-5	51	6	6	51	6	6
T07	45	45	37	-8	-8	49	4	4	48	3	3
T08	45	45	37	-8	-8	45	0	0	44	-1	-1
T09	45	45	39	-6	-6	52	7	7	52	7	7
T10	45	45	37	-8	-8	52	7	7	52	7	7
T11	45	45	37	-8	-8	48	3	3	47	2	2
T12	45	45	38	-7	-7	48	3	3	47	2	2
T13	45	45	38	-7	-7	47	2	2	46	1	1
T14	45	45	35	-10	-10	42	-3	-3	41	-4	-4
T15	45	45	39	-6	-6	45	0	0	44	-1	-1
T16	45	45	35	-10	-10	43	-2	-2	43	-2	-2
T17	45	45	35	-10	-10	43	-2	-2	43	-2	-2
T18	45	45	36	-9	-9	45	0	0	45	0	0
T19	45	45	33	-12	-12	42	-3	-3	41	-4	-4
T20	45	45	36	-10	-10	45	0	0	45	0	0
T21	45	45	36	-9	-9	46	1	1	45	0	0
T22	45	45	32	-13	-13	40	-5	-5	40	-5	-5
T23	45	45	31	-14	-14	40	-5	-5	39	-6	-6
T24	45	45	31	-14	-14	41	-4	-4	40	-5	-5
T25	45	45	31	-14	-14	41	-4	-4	41	-5	-5
T26	45	45	31	-14	-14	40	-5	-5	40	-5	-5
063a	50	50	61	11	11	61	11	11	61	11	11
063b	50	50	61	11	11	61	11	11	61	11	11
063c	50	50	56	6	6	57	7	7	57	7	7
063d	50	50	56	6	6	56	6	6	56	6	6
063e	50	50	50	0	0	51	1	1	50	0	0
063f	50	50	51	1	1	51	1	1	51	1	1
063g	50	50	50	0	0	50	0	0	50	0	0
063h	50	50	49	-1	-1	49	-1	-1	49	-1	-1

Table 6.3-2
CNEL Noise Levels and Changes Along Refined Corridor Alternatives With Initial Configuration

Receptor ID	Existing CNEL	Future CNEL w/o Project	FEC-M			FEC-W			A7C-FEC-M		
			CNEL	Δ Existing	Δ Due to Project	CNEL	Δ Existing	Δ Due to Project	CNEL	Δ Existing	Δ Due to Project
063i	50	50	54	4	4	54	4	4	53	3	3
063j	50	50	50	0	0	51	1	1	51	1	1
063k	50	50	47	-3	-3	49	-1	-1	48	-2	-2
063l	50	50	**66**	**16**	**16**	**67**	**17**	**17**	**67**	**17**	**17**
063m	50	50	**68**	**18**	**18**	**68**	**18**	**18**	**68**	**18**	**18**
063n	50	50	64	14	14	64	14	14	64	14	14
063o	50	50	59	9	9	59	9	9	59	9	9
063p	50	50	58	8	8	58	8	8	58	8	8
063q	50	50	54	4	4	54	4	4	54	4	4
063r	50	50	50	0	0	50	0	0	50	0	0
063s	50	50	50	-1	-1	50	0	0	49	-1	-1
063t	50	50	54	4	4	56	6	6	56	6	6
063u	50	50	47	-3	-3	49	-2	-2	48	-2	-2
063v	50	50	49	-1	-1	50	-1	-1	49	-1	-1
063w	50	50	47	-3	-3	48	-2	-2	48	-2	-2
063x	50	50	46	-5	-5	46	-4	-4	46	-4	-4
070b	45	45	39	-7	-7	41	-4	-4	40	-5	-5
070c	45	45	46	1	1	48	3	3	47	2	2
070d	45	45	43	-2	-2	46	1	1	46	1	1
070e	45	45	43	-2	-2	46	1	1	46	1	1
070f	45	45	45	0	0	47	2	2	47	2	2

Bold cells indicate receptors projected to experience a substantial noise increase and noise levels over the 65 CNEL standard
Differences may not be exact due to rounding.

Traffic Noise CNEL Contours With Initial FEC-M Alternative

Traffic Noise CNEL Contours With Initial FEC-W Alternative

Figure 6.3-5

Traffic Noise CNEL Contours With Initial A7C-FEC-M Alternative

Figure 6.3-6

Table 6.5-1
With Barrier CNEL Noise Levels for FEC-M-Ultimate Alternative

		CNEL With Barrier of Height				
Receptor	**None**	**2.4m (8')**	**3m (10')**	**3.7m (12')**	**4.3m (14')**	**4.9m (16')**
063a	61	57 (-4)	56 (-5)	56 (-5)	55 (-6)	**55 (-6)**
063b	61	57 (-4)	56 (-5)	55 (-6)	54 (-7)	**51 (-10)**
063c	56	55 (0)	55 (0)	55 (0)	55 (0)	**55 (0)**
063d	55	54 (-2)	54 (-2)	53 (-2)	53 (-3)	**53 (-3)**
063e	50	49 (0)	49 (0)	49 (0)	49 (0)	**49 (0)**
063f	50	50 (0)	50 (0)	50 (0)	50 (0)	**50 (0)**
063g	50	49 (0)	49 (0)	49 (-1)	49 (-1)	**49 (-1)**
063h	49	49 (0)	49 (0)	49 (0)	49 (0)	**49 (0)**
063i	53	53 (0)	53 (0)	53 (-1)	52 (-1)	**52 (-1)**
063j	50	50 (0)	50 (0)	50 (0)	50 (0)	**50 (0)**
063k	47	47 (0)	47 (0)	47 (0)	47 (0)	**47 (0)**
063l	66	63 (-3)	62 (-4)	61 (-5)	60 (-6)	**59 (-7)**
063m	67	64 (-4)	62 (-5)	60 (-7)	59 (-9)	**57 (-10)**
063n	63	61 (-2)	60 (-3)	59 (-4)	58 (-5)	**57 (-6)**
063o	59	58 (-1)	57 (-2)	56 (-3)	55 (-4)	**54 (-5)**
063p	57	56 (-1)	55 (-2)	55 (-2)	54 (-3)	**54 (-4)**
063q	54	54 (0)	54 (0)	54 (0)	54 (0)	**53 (-1)**
063r	50	50 (0)	50 (0)	50 (0)	50 (0)	**49 (0)**
063s	49	49 (0)	49 (0)	49 (0)	49 (0)	**49 (0)**
063t	54	54 (0)	54 (0)	54 (0)	54 (0)	**54 (0)**
063u	47	47 (0)	47 (0)	47 (0)	47 (0)	**47 (0)**
063v	48	48 (0)	48 (0)	48 (0)	48 (0)	**48 (0)**
063w	47	47 (0)	47 (0)	47 (0)	47 (0)	**47 (0)**
063x	45	45 (0)	45 (0)	45 (0)	45 (0)	**45 (0)**

Table 6.5-2
With Barrier CNEL Noise Levels for FEC-M-Initial Alternative

	CNEL With Barrier of Height					
Receptor	**None**	**2.4m (8')**	**3m (10')**	**3.7m (12')**	**4.3m (14')**	**4.9m (16')**
063a	61	57 (-4)	56 (-5)	55 (-6)	54 (-7)	**54 (-7)**
063b	61	56 (-5)	55 (-6)	54 (-7)	53 (-8)	**52 (-9)**
063c	56	56 (0)	56 (0)	56 (0)	56 (0)	**56 (0)**
063d	56	54 (-2)	54 (-2)	54 (-2)	53 (-3)	**53 (-3)**
063e	50	50 (0)	50 (0)	50 (0)	50 (0)	**50 (0)**
063f	51	51 (0)	51 (0)	50 (0)	50 (0)	**50 (-1)**
063g	50	50 (0)	50 (-1)	50 (-1)	50 (-1)	**49 (-1)**
063h	49	49 (0)	49 (0)	49 (0)	49 (0)	**49 (0)**
063i	54	53 (0)	53 (0)	53 (0)	53 (-1)	**53 (-1)**
063j	50	50 (0)	50 (0)	50 (0)	50 (0)	**50 (0)**
063k	47	47 (0)	47 (0)	47 (0)	47 (0)	**47 (0)**
063l	66	63 (-3)	62 (-4)	61 (-5)	60 (-6)	**59 (-7)**
063m	68	64 (-4)	63 (-5)	61 (-7)	59 (-9)	**58 (-10)**
063n	64	62 (-2)	61 (-3)	59 (-4)	58 (-5)	**57 (-6)**
063o	59	58 (-1)	57 (-2)	56 (-3)	55 (-4)	**54 (-5)**
063p	58	56 (-1)	56 (-2)	55 (-2)	55 (-3)	**54 (-4)**
063q	54	54 (0)	54 (0)	54 (0)	54 (0)	**54 (-1)**
063r	50	50 (0)	50 (0)	50 (0)	50 (0)	**50 (0)**
063s	50	49 (0)	49 (0)	49 (0)	49 (0)	**49 (0)**
063t	54	54 (0)	54 (0)	54 (0)	54 (0)	**54 (0)**
063u	47	47 (0)	47 (0)	47 (0)	47 (0)	**47 (0)**
063v	49	49 (0)	49 (0)	49 (0)	49 (0)	**49 (0)**
063w	47	47 (0)	47 (0)	47 (0)	47 (0)	**47 (0)**
063x	46	46 (0)	45 (0)	45 (0)	45 (0)	**45 (0)**

Traffic Noise CNEL Contours With Ultimate FEC-M Alternative-Mitigated

Traffic Noise CNEL Contours With Initial FEC-M Alternative-Mitigated

Table 6.5-3
With Barrier CNEL Noise Levels for FEC-W-Ultimate Alternative

		CNEL With Barrier of Height				
Receptor	**None**	**2.4m (8')**	**3m (10')**	**3.7m (12')**	**4.3m (14')**	**4.9m (16')**
063a	61	58 (-4)	58 (-4)	57 (-5)	57 (-5)	**56 (-6)**
063b	61	57 (-4)	56 (-5)	55 (-6)	55 (-6)	**54 (-7)**
063c	57	57 (0)	57 (0)	57 (0)	57 (0)	**57 (0)**
063d	57	55 (-2)	54 (-3)	54 (-3)	54 (-3)	**53 (-3)**
063e	50	50 (0)	50 (0)	50 (0)	50 (0)	**50 (0)**
063f	51	50 (-1)	50 (-1)	50 (-1)	50 (-1)	**50 (-1)**
063g	51	50 (-1)	50 (-1)	49 (-1)	49 (-1)	**49 (-1)**
063h	49	49 (0)	49 (0)	49 (0)	49 (-1)	**49 (-1)**
063i	54	53 (-1)	53 (-1)	53 (-1)	52 (-2)	**52 (-2)**
063j	51	51 (0)	51 (0)	51 (0)	51 (0)	**51 (0)**
063k	48	48 (0)	48 (0)	48 (0)	48 (0)	**48 (0)**
063l	67	63 (-4)	62 (-5)	61 (-6)	60 (-7)	**59 (-8)**
063m	68	64 (-4)	62 (-6)	61 (-8)	59 (-9)	**58 (-11)**
063n	64	61 (-3)	60 (-4)	59 (-5)	58 (-7)	**57 (-8)**
063o	60	58 (-2)	57 (-3)	56 (-4)	55 (-5)	**54 (-6)**
063p	58	56 (-3)	55 (-3)	55 (-4)	54 (-4)	**53 (-5)**
063q	55	54 (-1)	54 (-1)	54 (-1)	54 (-1)	**53 (-1)**
063r	51	50 (-1)	50 (-1)	50 (-1)	50 (-1)	**49 (-1)**
063s	50	49 (-1)	49 (-1)	49 (-1)	49 (-1)	**49 (-1)**
063t	55	55 (0)	55 (0)	55 (0)	55 (0)	**55 (0)**
063u	48	48 (0)	48 (0)	48 (0)	48 (0)	**48 (0)**
063v	49	49 (0)	49 (0)	49 (0)	49 (0)	**49 (0)**
063w	48	48 (0)	48 (0)	48 (0)	48 (0)	**48 (0)**
063x	46	46 (0)	46 (0)	46 (0)	46 (0)	**46 (0)**

Table 6.5-4
With Barrier CNEL Noise Levels for FEC-W-Initial Alternative

	CNEL With Barrier of Height					
Receptor	**None**	**2.4m (8')**	**3m (10')**	**3.7m (12')**	**4.3m (14')**	**4.9m (16')**
063a	61	58 (-3)	57 (-4)	56 (-5)	56 (-5)	**55 (-6)**
063b	61	57 (-4)	56 (-5)	55 (-6)	54 (-7)	**53 (-8)**
063c	57	57 (0)	57 (0)	57 (0)	57 (0)	**57 (0)**
063d	56	55 (-1)	55 (-2)	54 (-2)	54 (-2)	**54 (-2)**
063e	51	50 (0)	50 (0)	50 (0)	50 (0)	**50 (0)**
063f	51	51 (0)	51 (0)	51 (0)	51 (0)	**51 (0)**
063g	50	50 (0)	50 (-1)	50 (-1)	50 (-1)	**50 (-1)**
063h	49	49 (0)	49 (0)	49 (0)	49 (0)	**49 (0)**
063i	54	53 (0)	53 (0)	53 (-1)	53 (-1)	**53 (-1)**
063j	51	51 (0)	51 (0)	51 (0)	51 (0)	**51 (0)**
063k	49	49 (0)	49 (0)	49 (0)	49 (0)	**49 (0)**
063l	67	64 (-3)	62 (-5)	61 (-6)	60 (-7)	**59 (-7)**
063m	68	65 (-4)	63 (-6)	61 (-7)	60 (-9)	**58 (-10)**
063n	64	62 (-2)	61 (-3)	59 (-4)	58 (-6)	**57 (-7)**
063o	59	58 (-1)	57 (-2)	56 (-3)	55 (-4)	**54 (-5)**
063p	58	56 (-2)	56 (-2)	55 (-3)	54 (-3)	**54 (-4)**
063q	54	54 (0)	54 (0)	54 (0)	54 (-1)	**54 (-1)**
063r	50	50 (0)	50 (0)	50 (0)	50 (0)	**50 (0)**
063s	50	50 (0)	50 (0)	50 (0)	50 (0)	**50 (0)**
063t	56	56 (0)	56 (0)	56 (0)	56 (0)	**56 (0)**
063u	49	49 (0)	49 (0)	49 (0)	48 (0)	**48 (0)**
063v	50	49 (0)	49 (0)	49 (0)	49 (0)	**49 (0)**
063w	48	48 (0)	48 (0)	48 (0)	48 (0)	**48 (0)**
063x	46	46 (0)	46 (0)	46 (0)	46 (0)	**46 (0)**

Traffic Noise CNEL Contours
With Ultimate FEC-W Alternative-Mitigated

Traffic Noise CNEL Contours
With Initial FEC-W Alternative-Mitigated

Figure 6.5-4

Table 6.5-5
With Barrier CNEL Noise Levels for A7C-FEC-M-Ultimate Alternative

	CNEL With Barrier of Height					
Receptor	**None**	**2.4m (8')**	**3m (10')**	**3.7m (12')**	**4.3m (14')**	**4.9m (16')**
063a	61	57 (-4)	57 (-4)	56 (-5)	56 (-5)	**55 (-6)**
063b	60	56 (-4)	55 (-5)	54 (-6)	54 (-6)	**53 (-7)**
063c	56	56 (0)	56 (0)	56 (0)	56 (0)	**56 (0)**
063d	56	54 (-2)	54 (-3)	53 (-3)	53 (-3)	**53 (-3)**
063e	50	49 (0)	49 (0)	49 (0)	49 (0)	**49 (0)**
063f	50	50 (-1)	50 (-1)	50 (-1)	50 (-1)	**50 (-1)**
063g	50	49 (-1)	49 (-1)	49 (-1)	49 (-1)	**49 (-1)**
063h	49	48 (0)	48 (0)	48 (0)	48 (-1)	**48 (-1)**
063i	53	52 (-1)	52 (-1)	52 (-1)	52 (-2)	**52 (-2)**
063j	50	50 (0)	50 (0)	50 (0)	50 (0)	**50 (0)**
063k	48	48 (0)	48 (0)	47 (0)	47 (0)	**47 (0)**
063l	67	63 (-4)	61 (-5)	60 (-6)	59 (-7)	**58 (-8)**
063m	68	64 (-4)	62 (-6)	60 (-8)	58 (-9)	**57 (-11)**
063n	64	61 (-3)	60 (-4)	58 (-5)	57 (-7)	**56 (-8)**
063o	59	57 (-2)	56 (-3)	55 (-4)	54 (-5)	**53 (-6)**
063p	58	55 (-3)	55 (-3)	54 (-4)	53 (-4)	**53 (-5)**
063q	54	53 (-1)	53 (-1)	53 (-1)	53 (-1)	**53 (-1)**
063r	50	49 (-1)	49 (-1)	49 (-1)	49 (-1)	**49 (-1)**
063s	49	49 (-1)	49 (-1)	49 (-1)	49 (-1)	**49 (-1)**
063t	55	55 (0)	55 (0)	55 (0)	55 (0)	**55 (0)**
063u	48	47 (0)	47 (0)	47 (0)	47 (0)	**47 (0)**
063v	49	48 (0)	48 (0)	48 (0)	48 (0)	**48 (0)**
063w	47	47 (0)	47 (0)	47 (0)	47 (0)	**47 (0)**
063x	46	45 (0)	45 (0)	45 (0)	45 (0)	**45 (0)**

Table 6.5-6
With Barrier CNEL Noise Levels for A7C-FEC-M-Initial Alternative

	CNEL With Barrier of Height					
Receptor	**None**	**2.4m (8')**	**3m (10')**	**3.7m (12')**	**4.3m (14')**	**4.9m (16')**
063a	61	58 (-3)	57 (-4)	56 (-5)	56 (-5)	**55 (-6)**
063b	61	57 (-4)	56 (-5)	55 (-6)	54 (-7)	**53 (-8)**
063c	57	57 (0)	57 (0)	57 (0)	57 (0)	**57 (0)**
063d	56	54 (-1)	54 (-2)	54 (-2)	54 (-2)	**53 (-2)**
063e	50	50 (0)	50 (0)	50 (0)	50 (0)	**50 (0)**
063f	51	50 (0)	50 (0)	50 (0)	50 (0)	**50 (0)**
063g	50	50 (0)	49 (-1)	49 (-1)	49 (-1)	**49 (-1)**
063h	49	49 (0)	49 (0)	49 (0)	49 (0)	**49 (0)**
063i	53	53 (0)	53 (0)	53 (-1)	52 (-1)	**52 (-1)**
063j	51	51 (0)	51 (0)	51 (0)	51 (0)	**51 (0)**
063k	48	48 (0)	48 (0)	48 (0)	48 (0)	**48 (0)**
063l	67	63 (-3)	62 (-5)	61 (-6)	60 (-7)	**59 (-7)**
063m	68	64 (-4)	62 (-6)	61 (-7)	59 (-9)	**58 (-10)**
063n	64	61 (-2)	60 (-3)	59 (-4)	58 (-6)	**57 (-7)**
063o	59	58 (-1)	57 (-2)	56 (-3)	55 (-4)	**54 (-5)**
063p	58	56 (-2)	55 (-2)	55 (-3)	54 (-3)	**53 (-4)**
063q	54	54 (0)	54 (0)	54 (0)	53 (-1)	**53 (-1)**
063r	50	50 (0)	50 (0)	50 (0)	49 (0)	**49 (0)**
063s	49	49 (0)	49 (0)	49 (0)	49 (0)	**49 (0)**
063t	56	55 (0)	55 (0)	55 (0)	55 (0)	**55 (0)**
063u	48	48 (0)	48 (0)	48 (0)	48 (0)	**48 (0)**
063v	49	49 (0)	49 (0)	49 (0)	49 (0)	**49 (0)**
063w	48	48 (0)	48 (0)	47 (0)	47 (0)	**47 (0)**
063x	46	46 (0)	46 (0)	46 (0)	46 (0)	**46 (0)**

Traffic Noise CNEL Contours
With Ultimate A7C-FEC-M Alternative-Mitigated

Traffic Noise CNEL Contours
With Inital A7C-FEC-M Alternative-Mitigated

Figure 6.5-6

Attachment 2

Re-entrained PM10 Emissions

Attachment 2—Re-entrained PM_{10} Emissions

Scenario	6. Far East Corridor - Complete (FEC)	7. Far East Corridor - Complete (FEC)	8. Far East Corridor - Complete (FEC)	9. Far East Corridor - Talega Variation (FEC-TV)	10. Far East Corridor - Talega Variation (FEC-TV)	11. Far East Corridor - Talega Variation (FEC-TV)	12. Far East Corridor - Cristianitos Variation (FEC-CV)	13. Far East Corridor - Cristianitos Variation (FEC-CV)	14. Far East Corridor - Ortega Hwy Variation (FEC-OHV)	15. Far East Corridor - Ortega Hwy Variation (FEC-OHV)	16. Far East Corridor - Avd Pico Variation (FEC-APV)	17. Far East Corridor - Avd Pico Variation (FEC-APV)	18. Central Corridor - Complete (CC)	19. Central Corridor - Complete (CC)	20. Central Corridor - Complete (CC)	21. Central Corridor - Avd La Pata Variation (CC-ALPV)
Year	2025	2025	2025	2025	2025	2025	2025	2025	2025	2025	2025	2025	2025	2025	2025	2025
Network	Committed	MPAH/ RTP	MPAH/ RTP	Committed	MPAH/ RTP	MPAH/ RTP	Committed	MPAH/ RTP	Committed	MPAH/ RTP	Committed	MPAH/ RTP	Committed	MPAH/ RTP	MPAH/ RTP	Committed
Land Plan	OCP-2000 (1)	OCP-2000 (1)	OCP-2000 (2)	OCP-2000 (1)	OCP-2000 (1)	OCP-2000 (2)	OCP-2000 (1)	OCP-2000 (1)	OCP-2000 (1)	OCP-2000 (1)	OCP-2000 (1)	OCP-2000 (1)	OCP-2000 (1)	OCP-2000 (1)	OCP-2000 (2)	OCP-2000 (1)
PM_{10}	-13.1	-11.6	-18.5	-14.0	-12.3	-20.2	-9.3	-8.2	-6.1	-6.2	-9.1	-7.8	-15.2	-10.7	-14.5	-10.8

Scenario	22. Central Corridor – Avd La Pata Variation (CC-ALPV)	23. Central Corridor - Ortega Hwy Variation (CC-OHV)	24. Central Corridor - Ortega Hwy Variation (CC-OHV)	25. Alignment 7 - Complete (A7)	26. Alignment 7 - Complete (A7)	27. Alignment 7 - Far East Crossover Variation (A7-FECV)	28. Alignment 7 - Far East Crossover Variation (A7-FECV)	29. Alignment 7 - Far East Crossover Variation (A7-FECV)	30. Alignment 7 - Far East Crossover (Christianitos) Variation (A7-FECV-C)	31. Alignment 7 - Far East Crossover (Christianitos) Variation (A7-FECV-C)	32. Arterial Improvements Only (AIO)	33. Arterial Improvements Only (AIO)	34. Arterial Improvements Plus I-5 Widening (AIP)	35. Arterial Improvements Plus I-5 Widening (AIP)	36. I-5 Widening (I-5)	37. I-5 Widening (I-5)	38. I-5 Widening (I-5)
Year	2025	2025	2025	2025	2025	2025	2025	2025	2025	2025	2025	2025	2025	2025	2025	2025	2025
Network	MPAH/ RTP	Committed	MPAH/ RTP	Committed	MPAH/ RTP	Committed	MPAH/ RTP	MPAH/ RTP	Committed	MPAH/ RTP	Enhanced MPAH/ RTP	Enhanced MPAH/ RTP	Enhanced MPAH/ RTP	Enhanced MPAH/ RTP	Committed	MPAH/ RTP	MPAH/ RTP
Land Plan	OCP-2000 (1)	OCP-2000 (1)	OCP-2000 (1)	OCP-2000 (1)	OCP-2000 (1)	OCP-2000 (1)	OCP-2000 (1)	OCP-2000 (2)	OCP-2000 (1)	OCP-2000 (1)	OCP-2000 (1)	OCP-2000 (2)	OCP-2000 (1)	OCP-2000 (2)	OCP-2000 (1)	OCP-2000 (1)	OCP-2000 (2)
PM_{10}	-5.3	0.2	-0.5	-16.1	-11.0	-13.0	-9.9	-6.2	-3.5	-3.8	0.1	1.8	-0.5	1.1	-6.6	-6.4	-4.3

Nicoled

Att 3–CO Concentrations–Pico–I5.pdf
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Attachment 3

CO Concentrations at Avenida Pico and I-5

Attachment 3—CO Concentrations at Avenida Pico and I-5
Included in Response L7-25

Worst Case CO Concentrations at the Interchange of Avenida Pico and I-5

1-Hour Concentrations in ppm						
	No Action	**FEC**	**CC**	**A7C**	**AIO**	**I-5**
Existing	9.1	9.1	9.1	9.1	9.1	9.1
2008	5.2	5.4	5.8	5.3	5.4	5.1
2018	5.4	5.0	5.3	5.0	5.3	4.8
2025	6.2	6.1	4.7	5.6	5.5	5.5
8-Hour Concentrations in ppm						
	No Action	**FEC**	**CC**	**A7C**	**AIO**	**I-5**
Existing	6.9	6.9	6.9	6.9	6.9	6.9
2008	3.8	4.0	4.3	3.9	4.0	3.8
2018	4.0	3.7	3.9	3.7	3.9	3.5
2025	4.6	4.5	3.4	4.1	4.1	4.1

Source: Mestre Greve Associates (2004).

Nicoled

Att 4–Construction Emissions.pdf
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Attachment 4

Construction Emissions

Attachment 4—Construction Emissions for Response to Comment L7-26

Construction Emissions (Pounds/Day) - AIO Alternative

Construction Equipment	18,849.7	849.2	5,523.9	402.4	595.8
Employee Travel	289.8	18.9	35.9	2.3	1.8
Grading (PM_{10})	-	-	-	-	105.6
Import/Export	94	10	219	13	24.2
Demolition Debris	-	-	-	-	23.5
Grand Total	19,234	878	5,779	418	751

Attachment 5

CO Concentrations along Corridor and I-5

Attachment 5—CO Concentrations Along Corridor and I-5 for Response F5-23

Distance From Edge of Near Travel Lane	FEC Alternative		CC Alternative Along I-5		Notes:
	1-Hour Conc. (ppm)	8-Hour Conc. (ppm)	1-Hour Conc. (ppm)	8-Hour Conc. (ppm)	
0	5.3	5.1	6.5	4.9	At Edge of Travel Lane
10	4.9	4.7	5.5	4.4	At Edge of Shoulder
25	4.3	4.1	4.0	3.8	
50	4.0	3.8	3.2	3.4	
100	3.8	3.6	3.2	3.1	
200	3.6	3.4	3.2	2.8	
300	3.5	3.3	3.2	2.7	
400	3.5	3.3	3.2	2.6	
500	3.5	3.3	3.2	2.6	

Attachment 6

Updated Right-of-Way Acquisition Costs

Attachment 6—Estimated Acquisition and Relocation Costs for SOCTIIP Build Alternatives Updated for Additional Talega Residential Displacement (constant 2002 dollars)

Alternative	ROW and Relocation Cost		
	Original	Updated	Difference
A7C-ALPV			
Initial	86,266,000	104,385,000	$ 18,119,000
Ultimate	96,325,000	179,169,000	$ 82,844,000
CC			
Initial	421,484,000	518,053,000	$ 96,569,000
Ultimate	437,315,000	554,314,000	$116,999,000
CC-ALPV			
Initial	55,265,000	151,844,000	$ 96,579,000
Ultimate	68,022,000	185,021,000	$116,999,000

Attachment 7

List of Water Quality Limited Segments

2002 CWA SECTION 303(d) LIST OF WATER QUALITY LIMITED SEGMENTS
(Approved by USEPA - July 2003)

Regional Board No.	Regional Board	Water Body Type	Water Body Name	Estimated Size Affected	Unit	Pollutant_Stressor	Potential Sources
8	Santa Ana	Rivers/Streams	Los Trancos Creek (Crystal Cove Creek)	0.19	Miles	Fecal Coliform	Source Unknown
8	Santa Ana	Rivers/Streams	Los Trancos Creek (Crystal Cove Creek)	0.19	Miles	Total Coliform	Source Unknown
8	Santa Ana	Bays and Harbors	Newport Bay, Lower	767	Acres	Pesticides	Agriculture
8	Santa Ana	Bays and Harbors	Newport Bay, Lower	767	Acres	Pesticides	Contaminated Sediments
8	Santa Ana	Bays and Harbors	Newport Bay, Lower	767	Acres	Priority Organics	Contaminated Sediments
8	Santa Ana	Bays and Harbors	Newport Bay, Lower	767	Acres	Priority Organics	Unknown Nonpoint Source
8	Santa Ana	Bays and Harbors	Newport Bay, Lower	767	Acres	Metals	Urban Runoff/Storm Sewers
8	Santa Ana	Bays and Harbors	Newport Bay, Lower	767	Acres	Metals	Contaminated Sediments
8	Santa Ana	Bays and Harbors	Newport Bay, Lower	767	Acres	Metals	Boatyards
8	Santa Ana	Estuaries	Newport Bay, Upper (Ecological Reserve)	653	Acres	Pesticides	Agriculture
8	Santa Ana	Estuaries	Newport Bay, Upper (Ecological Reserve)	653	Acres	Pesticides	Unknown Nonpoint Source
8	Santa Ana	Estuaries	Newport Bay, Upper (Ecological Reserve)	653	Acres	Metals	Urban Runoff/Storm Sewers
8	Santa Ana	Rivers/Streams	San Diego Creek Reach 1	7.8	Miles	Pesticides	Unknown Nonpoint Source
8	Santa Ana	Rivers/Streams	San Diego Creek Reach 1	7.8	Miles	Fecal Coliform	Urban Runoff/Storm Sewers
8	Santa Ana	Rivers/Streams	San Diego Creek Reach 1	7.8	Miles	Fecal Coliform	Other Urban Runoff
8	Santa Ana	Rivers/Streams	San Diego Creek Reach 2	6.3	Miles	Unknown Toxicity	Unknown Nonpoint Source
8	Santa Ana	Rivers/Streams	San Diego Creek Reach 2	6.3	Miles	Metals	Urban Runoff/Storm Sewers
9	San Diego	Rivers/Streams	Aliso Creek	19	Miles	Toxicity	Urban Runoff/Storm Sewers
9	San Diego	Rivers/Streams	Aliso Creek	19	Miles	Toxicity	Unknown Nonpoint Source
9	San Diego	Rivers/Streams	Aliso Creek	19	Miles	Toxicity	Unknown point source
9	San Diego	Rivers/Streams	Aliso Creek	19	Miles	Phosphorus	Urban Runoff/Storm Sewers
9	San Diego	Rivers/Streams	Aliso Creek	19	Miles	Phosphorus	Unknown Nonpoint Source
9	San Diego	Rivers/Streams	Aliso Creek	19	Miles	Phosphorus	Unknown point source
9	San Diego	Rivers/Streams	Aliso Creek	19	Miles	Bacteria Indicators	Urban Runoff/Storm Sewers
9	San Diego	Rivers/Streams	Aliso Creek	19	Miles	Bacteria Indicators	Unknown point source
9	San Diego	Rivers/Streams	Aliso Creek	19	Miles	Bacteria Indicators	Nonpoint/Point Source
9	San Diego	Estuaries	Aliso Creek (mouth)	0.29	Acres	Bacteria Indicators	Nonpoint/Point Source
9	San Diego	Bays and Harbors	Dana Point Harbor	119	Acres	Bacteria Indicators	Urban Runoff/Storm Sewers
9	San Diego	Bays and Harbors	Dana Point Harbor	119	Acres	Bacteria Indicators	Marinas and Recreational Boating
9	San Diego	Bays and Harbors	Dana Point Harbor	119	Acres	Bacteria Indicators	Unknown Nonpoint Source
9	San Diego	Bays and Harbors	Dana Point Harbor	119	Acres	Bacteria Indicators	Unknown point source
9	San Diego	Coastal Shorelines	Pacific Ocean Shoreline, Aliso HSA	0.65	Miles	Bacteria Indicators	Nonpoint/Point Source
9	San Diego	Coastal Shorelines	Pacific Ocean Shoreline, Dana Point HSA	2	Miles	Bacteria Indicators	Nonpoint/Point Source
9	San Diego	Coastal Shorelines	Pacific Ocean Shoreline, Laguna Beach HSA	1.8	Miles	Bacteria Indicators	Nonpoint/Point Source
9	San Diego	Coastal Shorelines	Pacific Ocean Shoreline, Lower San Juan HSA	1.2	Miles	Bacteria Indicators	Nonpoint/Point Source
9	San Diego	Coastal Shorelines	Pacific Ocean Shoreline, San Clemente HA	3.7	Miles	Bacteria Indicators	Nonpoint/Point Source
9	San Diego	Coastal Shorelines	Pacific Ocean Shoreline, San Joaquin Hills HSA	0.63	Miles	Bacteria Indicators	Urban Runoff/Storm Sewers
9	San Diego	Coastal Shorelines	Pacific Ocean Shoreline, San Joaquin Hills HSA	0.63	Miles	Bacteria Indicators	Unknown Nonpoint Source
9	San Diego	Coastal Shorelines	Pacific Ocean Shoreline, San Joaquin Hills HSA	0.63	Miles	Bacteria Indicators	Unknown point source
9	San Diego	Rivers/Streams	Prima Deshecha Creek	1.2	Miles	Phosphorus	Urban Runoff/Storm Sewers

2002 CWA SECTION 303(d) LIST OF WATER QUALITY LIMITED SEGMENTS
(Approved by USEPA - July 2003)

Regional Board No.	Regional Board	Water Body Type	Water Body Name	Estimated Size Affected	Unit	Pollutant_Stressor	Potential Sources
9	San Diego	Rivers/Streams	Prima Deshecha Creek	1.2	Miles	Phosphorus	Unknown Nonpoint Source
9	San Diego	Rivers/Streams	Prima Deshecha Creek	1.2	Miles	Phosphorus	Unknown point source
9	San Diego	Rivers/Streams	Prima Deshecha Creek	1.2	Miles	Turbidity	Urban Runoff/Storm Sewers
9	San Diego	Rivers/Streams	Prima Deshecha Creek	1.2	Miles	Turbidity	Unknown Nonpoint Source
9	San Diego	Rivers/Streams	Prima Deshecha Creek	1.2	Miles	Turbidity	Unknown point source
9	San Diego	Rivers/Streams	San Juan Creek	1	Miles	Bacteria Indicators	Nonpoint/Point Source
9	San Diego	Estuaries	San Juan Creek (mouth)	6.3	Acres	Bacteria Indicators	Nonpoint/Point Source
9	San Diego	Rivers/Streams	Segunda Deshecha Creek	0.92	Miles	Phosphorus	Urban Runoff/Storm Sewers
9	San Diego	Rivers/Streams	Segunda Deshecha Creek	0.92	Miles	Phosphorus	Unknown Nonpoint Source
9	San Diego	Rivers/Streams	Segunda Deshecha Creek	0.92	Miles	Phosphorus	Unknown point source
9	San Diego	Rivers/Streams	Segunda Deshecha Creek	0.92	Miles	Turbidity	Construction/Land Development
9	San Diego	Rivers/Streams	Segunda Deshecha Creek	0.92	Miles	Turbidity	Urban Runoff/Storm Sewers
9	San Diego	Rivers/Streams	Segunda Deshecha Creek	0.92	Miles	Turbidity	Channelization
9	San Diego	Rivers/Streams	Segunda Deshecha Creek	0.92	Miles	Turbidity	Flow Regulation/Modification
9	San Diego	Rivers/Streams	Segunda Deshecha Creek	0.92	Miles	Turbidity	Unknown Nonpoint Source
9	San Diego	Rivers/Streams	Segunda Deshecha Creek	0.92	Miles	Turbidity	Unknown point source

Attachment 8

Sediment Transport Study

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Executive Summary

This study was prepared to assess the potential for a significant change in the sediment supply from San Mateo Creek to San Onofre State Beach and the Trestles surfing area as a result of the construction of the Foothill Transportation Corridor and other development in the watershed. There is concern that a significant change in the sediment supply could alter the bathometry of the nearshore area, thereby changing the characteristics of the wave. Changes in the wave characteristics could impact the world-class Trestles surfing area.

Three scenarios were evaluated to assess the conditions expected within the watershed. First, a baseline case was defined as the existing watershed condition and no planned or proposed development. The second case was defined as the baseline condition with the development of the Foothill Transportation Corridor (FTC). The third case was defined as the baseline condition with the development of the FTC and that of the planned Rancho Mission Viejo (RMV) development, a mixed-use residential and commercial project located in the Cristianitos watershed.

Both the FTC and RMV have proposed measures to mitigate the impact of each project on changes in watershed sediment supply. The FTC will pass off-site drainage areas under the roadway in culverts designed to ensure that sediment is not impeded. Further, each project avoids construction in or altering the primary stream courses to the greatest extent feasible. Change to the watershed hydrology as a result of the projects is also mitigated to reduce the potential impact to sediment transport.

Previous investigations (Simons, Li & Associates, 1985) have determined San Mateo Creek to be transport capacity controlled, so the study was focused on assessing the change in transport capacity of identified creek reaches between the three development scenarios. The computer program SAM (Sediment Analysis Model) was used to perform the calculations for three storm recurrence intervals: 2-year, 10-year, and 100-year.

The results of the study show that the changes to the sediment transport in San Mateo Creek are insignificant for both development scenarios (with the FTC and with the FTC and RMV). Changes in transport capacity are generally limited to one or two percent of the total for the assumed dominant discharge (10-year storm). Accordingly, changes to the sediment budget for a Trestles area sub-cell will also be insignificant as a result of the proposed projects.

1 Introduction

The purpose of this report is to summarize the results of the qualitative and quantitative sediment continuity analyses performed for the lower natural San Mateo Creek channel to evaluate the sediment transport capacity and sediment delivery to the beach. The South Orange County Transportation Infrastructure Improvement Project (SOCTIIP) includes various roadway alignment alternatives to the extension of the Foothill South Corridor from Rancho Santa Margarita to San Clemente. The roadway alternative alignments generally extend a distance of 16 – 17 miles and span across three to six watersheds (depending on the alternative). There is concern that the project may disrupt and alter the sediment delivery to San Onofre State Beach. The Cristianitos and San Mateo Creeks are most likely to be potentially impacted by the project since there is very little current urbanization in these watersheds, and the various Corridor alignments fall within these watersheds for the longest distance on a relative basis. The focus of the study is to determine whether there is an impact to sediment delivery resulting from the proposed project.

1.1 Significance Criteria

The assessment as to whether a change is 'significant' can be made with some objectivity by comparing the predicted changes to the uncertainty in the model input parameters as well as the magnitude of responses from independent variables such as rainfall intensity, rainfall spatial and temporal patterns, and other sediment sources or sinks such as longshore sediment transport. Accordingly, changes in sediment transport at San Onofre Beach from San Mateo Creek could be considered insignificant for values below 10 percent of the total estimated volume.

1.2 Approach and Discussion

Medium-grained sand and fine gravel are of particular interest in the San Juan and San Mateo Creek watersheds, as these are the types of sediment that are most important for beach supply. The primary sources of such sediment are the alluvial deposits found in streambeds and stored on floodplains. These deposits contain considerable amounts of unconsolidated sand and fine gravel that are available to the stream.

The lower San Mateo Creek channel reach was evaluated to compare the sediment transport capacity of the channel based on existing (no project) condition and the with-project conditions. A cumulative project analysis was performed to evaluate the potential changes to the sediment transport and delivery resulting from the project in addition to the changes that may occur with the construction of the proposed Rancho Mission Viejo (RMV) project within the San Mateo Creek watershed.

Some of the comments received on the project environmental document indicate that a sediment budget analysis is needed to assess the potential impacts to the San Onofre State Beach. The technical analysis prepared by the Soil, Water, Air, Protection Enterprise

(SWAPE), which was an attachment to the comments, references the US Army Corps of Engineers Sediment Budget Analysis System (SBAS). SBAS is a one-dimensional computer model used by engineers to assess the changes in a user-defined 'cell' by tracking sediment inputs (sources) and outputs (sinks) using the principle of continuity. Developing a SBAS model requires assembling detailed spatial and temporal information regarding each of the sources and sinks in the cell as well as information about the transport processes within, into and out of the cell.

The toll road can physically impact only one of the source elements of the budget in what could be defined as the 'trestles' area cell. This source is beach quality sized sediment discharge from San Mateo Creek. As a part of development of a sediment budget analysis, a sediment transport analysis would be required to quantify the volume of material that is input to the study cell from San Mateo Creek. If pre-project and post-project sediment source quantities are within in a few percent of each other then the overall impact on the budget is not significant. Since the tollway has no impact on other sources or sinks in the budget analysis, if it can be shown that the small change to this source component as a result of the project is not significant. Under these conditions, the further step of developing a sediment budget is academic.

1.3 San Mateo Creek Study Reach

San Mateo Creek is a relatively undisturbed natural channel. The San Mateo Creek watershed has a drainage area of 132 square miles originating from within Cleveland National Forest and flowing southwesterly through Camp Pendleton. Figure 1 shows the aerial photo of the entire San Mateo Creek watershed. Figure 1–1 shows the SOCTIIP project Far East Corridor alignment and the limits of the proposed RMV project within the watershed. Figures 1–2 and 1–3 show photographs taken September 2004 of the lower San Mateo Creek channel looking upstream and downstream of I-5 freeway.

Figure 1–4 shows the study reach along the lower San Mateo Creek channel. The study reach is generally from the ocean outfall and extending 2 miles upstream (just downstream of the Cristianitos Creek confluence).

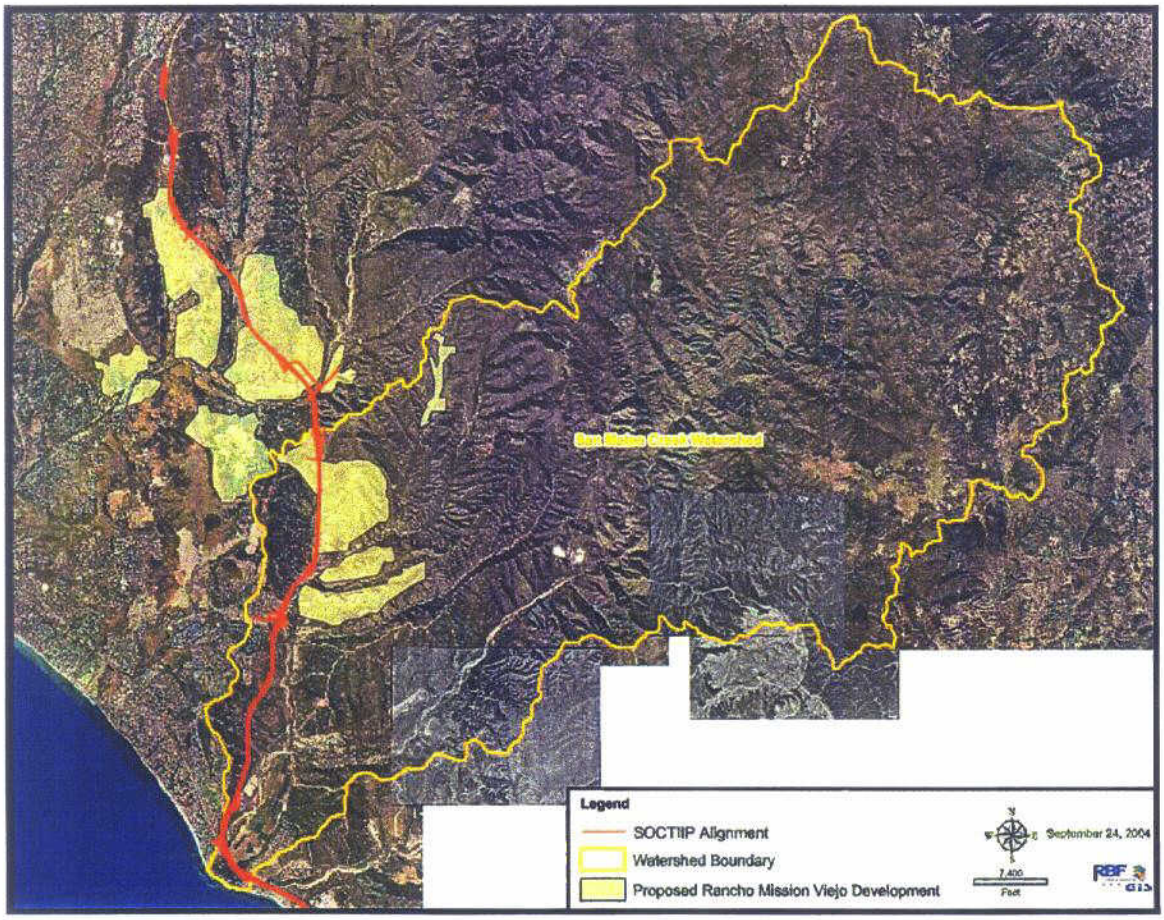

Figure 1-1 San Mateo Watershed Showing SOCTIIP Project and Proposed Rancho Mission Viejo Development within San Mateo Creek Watershed Boundaries

Figure 1-2 San Mateo Lower Channel Reach Looking Downstream from I-5 Freeway

Figure 1-3 Photograph of San Mateo Creek Channel Looking Upstream from I-5 Freeway

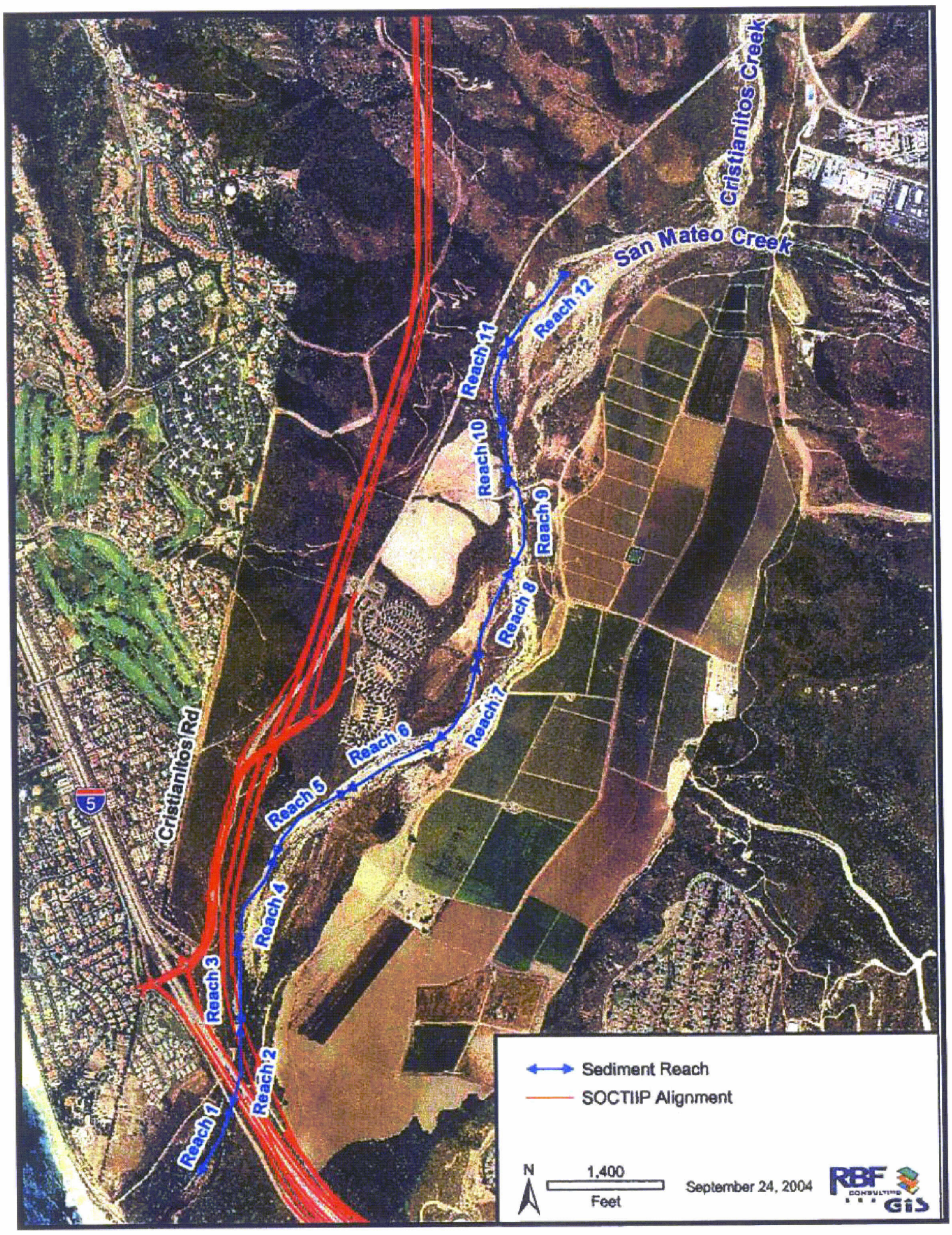

Figure 1-4 Study Reach and Location of Sediment Transport Subreaches

1.4 Watershed Supply vs. Transport Capacity Control

The physical processes governing the discharge of sediment through a channel reach are complex. The controlling mechanism may be considered one of two types: watershed supply control or transport capacity control. If the characteristics of the channel reach are such that the quantity of sediment it yields is limited by the amount released from the upstream watershed (i.e., the channel is armored) the channel reach is considered watershed supply-controlled. If the sediment yield from the channel reach is affected by the amount of sediment supplied from upstream (such as an aggrading channel or a channel with an abundance of transportable material), then the channel reach is labeled transport capacity-controlled, since it is the reach's sediment transport capacity that determines the sediment yield. San Mateo Creek has been determined to be transport capacity controlled (Simons, Li & Associates, 1985 prepared for the U.S. Army Corps of Engineers). Furthermore, there are no visible signs of armoring of the lower channel reach. A review of the Rancho Mission Viejo sediment analysis (see Section 5) also confirms this approach since coarse sediment yields change by relatively minor amounts.

Since it is estimated that the San Mateo Creek is controlled by the sediment transport capacity of the stream in the study reach, impact to sediment delivery to the beach is focused on the analysis of sediment transport. Comparison of the channel's sediment transport capacity of the existing watershed conditions, with-project watershed conditions, and with-project cumulative with RMV project was evaluated. The sediment transport capacity of San Mateo Creek is presented in this report and discussed in Sections 3, 4, and 5.

2 Watershed Hydrology

2.1 Watershed Hydrology

Hydrology for the San Mateo Creek watershed was prepared for existing and with-project watershed conditions (Psomas, 2003). Hydrologic analysis was also prepared for with-project and with-RMV project watershed conditions (Psomas, 2003). Peak discharges were estimated for the 2-, 10-, and 100-year storm events. Existing and Project condition flows for each storm event are presented in Table 2-1 .

As shown, the with-project conditions increased the 100-year peak discharge by less than 1%. When the RMV project is implemented, peak discharges are expected to decrease by 2% resulting from changes to flood routing (mitigation associated with the RMV project) and time of peak flow.

Table 2-1 San Mateo Creek Summary of Peak Discharges (all discharges in cubic feet per second)

Return Period	Existing Watershed Condition	With-Project Conditions	Difference	With-Project and With RMV Project	Difference
2-yr	406	411	1%	418	3%
10-yr	6999	7025	0%	6975	0%
100-yr	47312	47356	0%	46469	-2%

3 Evaluation of Sediment Transport (Approach)

3.1 Sediment Continuity

3.1.1 Methodology

The sediment continuity principle applied to a channel reach is expressed as

$$Q_{s,in} - Q_{s,out} = \frac{\partial V}{\partial t}$$

Where

$Q_{s,in}$ = sediment supply (inflow)

$Q_{s,out}$ = sediment transport capacity (outflow)

$\frac{\partial V}{\partial t}$ = rate of change in sediment storage

The continuity principle is reflective of the law of conservation of mass and forms the basis for estimating the magnitude of adjustments to a channel reach in response to a given sequence of flows (inflow hydrograph).

For a given flood event and duration, the volume of sediment deposited or eroded in a channel reach is simply the difference between the upstream sediment supply rate ($Q_{s,in}$) and the channel reach sediment transport capacity ($Q_{s,out}$).

A channel reach experiences aggradation (i.e., sediment deposition) when the supply rate exceeds the transport capacity and it is subject to degradation (i.e., general scour) when the supply rate is less than the transport capacity. The sediment continuity principle can be applied to evaluate conditions of a single event (e.g., 10-year storm).

3.1.2 Procedure

1. Compute the hydraulic parameters for the study reach using a one-dimensional steady flow hydraulics model such as HEC-RAS (USACE 2003) for a sequence of discharges (e.g., 2-, 10-, and 100-year storm events).
2. Determine the discharge predominantly responsible for the channel characteristics in the study reach.
3. Divide the study reach into subreaches based on
   - Geomorphologic characteristics,
   - Hydraulic parameters (i.e., hydraulic depth, velocity, top width, and energy gradient) for the channel-forming discharge,
   - Bed-material characteristics,

- Existing structures of interest (e.g., fixed points such as road crossings),
- Proposed improvements, and
- Maintaining uniform subreach lengths, if possible.

4. For each subreach, develop a characteristic-rating curve for each of the five (5) hydraulic parameters: water discharge, hydraulic depth, velocity, top width, and energy gradient.
5. Select sediment transport models appropriate for the channel characteristics (e.g., d_{50}, hydraulic depth, velocity, top width, and energy gradient). The hydraulic parameters should be based on the channel-forming discharge.
6. Calculate the sediment transport capacity of each subreach using the selected sediment transport models.
7. Apply the sediment continuity principle by comparing transport capacities on a subreach-by-subreach basis, under the assumption that the sediment supply to any given subreach is equal to the transport capacity of the adjacent upstream subreach. The comparison starts at the upstream limits of the study reach by designating the most upstream subreach as the supply source, including the contribution of bed-material sized sediment from tributaries, sheet flow, or bank erosion within the upstream subreach.

4 Sediment Transport Analysis (Application)

4.1 Average Hydraulic Parameters

The hydraulic analyses were based on existing channel geometry and ultimate hydrologic conditions. One-dimensional steady flow hydraulics were computed for the study reach using HEC-RAS (USACE 2003). Flows for the 2-, 10-, and 100-year storm events were used in the analysis. The 10-year storm event was determined to be predominantly responsible for the channel characteristics in the study reach based on qualitative assumptions (Simons, Li & Associates, 1994 prepared for the Orange County Environmental Management Agency.).

The study reach was divided into twelve (12) subreaches. Average hydraulic parameters (i.e., hydraulic depth, velocity, top width, and energy gradient) were calculated for each designated subreach and discharge. Twelve (12) sets of average hydraulic parameters were determined. Each set represents a constant discharge associated with a particular event.

Table 4-1 Summary of 2-, 10-, and 100-year Hydraulic Parameters for Existing Conditions

2 Year				
Reach	Vel Chnl	Hydr Depth	Top Width	E.G. Slope
	(ft/s)	(ft)	(ft)	(ft/ft)
12	3.10	1.27	169	0.0039
11	5.46	0.92	81	0.0185
10	0.37	4.17	265	0.0000
9	2.76	0.95	207	0.0240
8	3.14	0.68	273	0.0118
7	3.00	0.54	293	0.0135
6	1.03	1.17	424	0.0007
5	2.22	1.08	363	0.0109
4	1.65	1.47	551	0.0265
3	1.50	2.30	259	0.0064
2	0.84	2.69	266	0.0013
1	2.39	1.10	208	0.0130
Avg	2.29	1.53	280	0.0109
10 Year				
Reach	Vel Chnl	Hydr Depth	Top Width	E.G. Slope
	(ft/s)	(ft)	(ft)	(ft/ft)
12	3.75	1.81	1282	0.0038
11	6.76	1.29	917	0.0101
10	3.04	5.46	421	0.0004
9	5.78	3.31	391	0.0070
8	5.13	2.00	822	0.0072
7	4.65	1.93	849	0.0047
6	4.09	3.63	609	0.0018
5	4.86	2.27	977	0.0074
4	3.77	3.25	965	0.0172
3	4.14	4.21	519	0.0053
2	3.74	6.71	312	0.0019
1	7.32	3.18	375	0.0162
Avg	4.75	3.25	703	0.0069
100 Year				
Reach	Vel Chnl	Hydr Depth	Top Width	E.G. Slope
	(ft/s)	(ft)	(ft)	(ft/ft)
12	9.83	4.03	1575	0.0077
11	8.72	5.28	1448	0.0034
10	7.95	6.16	1162	0.0015
9	10.07	5.00	1263	0.0053
8	9.78	4.25	1241	0.0076
7	5.98	7.29	1120	0.0021
6	9.72	6.84	1566	0.0035
5	9.47	5.13	1808	0.0079
4	5.01	8.84	1833	0.0021
3	4.47	6.08	2806	0.0005
2	9.04	15.09	378	0.0023
1	15.66	6.11	661	0.0167
Avg	8.81	6.67	1405	0.0050

Table 4-2 Summary of 2-yr, 10-yr, and 100-yr Hydraulic Parameters for With-Project

2 Year				
Reach	Vel Chnl	Hydr Depth	Top Width	E.G. Slope
	(ft/s)	(ft)	(ft)	(ft/ft)
12	3.11	1.28	169	0.0039
11	5.46	0.93	81	0.0183
10	0.37	4.16	266	0.0000
9	2.76	0.95	208	0.0236
8	3.15	0.68	274	0.0118
7	3.00	0.54	294	0.0135
6	1.04	1.18	424	0.0007
5	2.24	1.09	364	0.0110
4	1.66	1.47	552	0.0268
3	1.51	2.30	260	0.0064
2	0.85	2.67	267	0.0013
1	2.40	1.10	209	0.0132
Avg	2.30	1.53	281	0.0109
10 Year				
Reach	Vel Chnl	Hydr Depth	Top Width	E.G. Slope
	(ft/s)	(ft)	(ft)	(ft/ft)
12	3.74	1.82	1283	0.0037
11	6.79	1.28	917	0.0102
10	3.05	5.46	422	0.0004
9	5.79	3.32	391	0.0069
8	5.14	2.00	822	0.0072
7	4.64	1.93	851	0.0047
6	4.09	3.63	610	0.0018
5	4.88	2.28	977	0.0075
4	3.77	3.26	966	0.0170
3	4.12	4.24	519	0.0053
2	3.75	6.72	312	0.0019
1	7.33	3.19	375	0.0162
Avg	4.76	3.26	704	0.0069
100 Year				
Reach	Vel Chnl	Hydr Depth	Top Width	E.G. Slope
	(ft/s)	(ft)	(ft)	(ft/ft)
12	9.83	4.03	1575	0.0077
11	8.72	5.28	1450	0.0034
10	7.95	6.16	1162	0.0015
9	10.07	5.00	1263	0.0053
8	9.78	4.25	1241	0.0076
7	5.98	7.29	1120	0.0021
6	9.72	6.84	1569	0.0035
5	9.48	5.15	1810	0.0080
4	4.98	8.87	1867	0.0020
3	4.43	6.16	2802	0.0005
2	9.03	15.13	378	0.0023
1	15.66	6.11	661	0.0167
Avg	8.80	6.69	1408	0.0050

Table 4-3 Summary of 2-yr, 10-yr, and 100-yr Hydraulic Parameters for With-Project and With RMV Project

2 Year				
Reach	Vel Chnl	Hydr Depth	Top Width	E.G. Slope
	(ft/s)	(ft)	(ft)	(ft/ft)
12	3.13	1.29	170	0.0039
11	5.48	0.94	82	0.0182
10	0.38	4.16	267	0.0000
9	2.78	0.96	209	0.0240
8	3.16	0.69	275	0.0118
7	3.02	0.54	295	0.0134
6	1.04	1.19	424	0.0007
5	2.24	1.09	365	0.0109
4	1.68	1.47	553	0.0275
3	1.52	2.31	261	0.0064
2	0.86	2.69	267	0.0013
1	2.40	1.10	211	0.0134
Avg	2.31	1.54	281	0.0110
10 Year				
Reach	Vel Chnl	Hydr Depth	Top Width	E.G. Slope
	(ft/s)	(ft)	(ft)	(ft/ft)
12	3.74	1.81	1282	0.0038
11	6.76	1.28	916	0.0102
10	3.04	5.46	421	0.0004
9	5.77	3.31	391	0.0070
8	5.13	2.00	822	0.0072
7	4.65	1.93	848	0.0047
6	4.08	3.62	608	0.0018
5	4.85	2.27	977	0.0074
4	3.76	3.25	965	0.0171
3	4.12	4.23	518	0.0053
2	3.73	6.70	312	0.0018
1	7.30	3.18	375	0.0162
Avg	4.74	3.25	703	0.0069
100 Year				
Reach	Vel Chnl	Hydr Depth	Top Width	E.G. Slope
	(ft/s)	(ft)	(ft)	(ft/ft)
12	9.76	3.99	1569	0.0077
11	8.69	5.23	1417	0.0034
10	7.88	6.13	1156	0.0015
9	10.03	4.96	1251	0.0053
8	9.73	4.20	1238	0.0076
7	5.94	7.20	1120	0.0021
6	9.64	6.84	1538	0.0035
5	9.43	5.09	1794	0.0080
4	4.93	8.84	1832	0.0020
3	4.64	6.58	2760	0.0005
2	8.95	15.00	377	0.0023
1	15.57	6.06	658	0.0167
Avg	8.77	6.68	1392	0.0051

4.2 SAM Hydraulic Design Package for Channels

Thomas et al (2002) developed SAM, a computer program designed to compute the width, depth, slope, and n-value for stable alluvial material. SAM is capable of determining stable channel dimensions, calculating bed-material discharge, and calculating the sediment yield of a stream. SAM provides a reasonable approach to preliminary screening of design alternatives, and, in some cases, is suitable for final design or performance monitoring.

4.2.1 Purpose

SAM is an integrated system of programs developed to aid engineers in analyses associated with designing, operating, and maintaining flood control channels and stream restoration projects. The following fundamental sediment processes are considered: erosion, entrainment, transportation, and deposition. Compaction of the deposited bed sediment is not accounted for in the design of stable channels.

The three (3) main modules—SAM.hyd, SAM.sed, and SAM.yld—can be used in series or use separately, to assist in various hydraulic design situations.

4.2.2 SAM.hyd Module

A single typical cross section, of a stream is considered. Geometry of a cross section can be prescribed with station and elevation coordinates for irregular channels, or as simple or compound geometry (e.g., rectangular, trapezoidal). The steady state, normal depth equation is solved in order to transform complex geometry into composite hydraulic parameters. The normal depth equation can be solved for depth, width, slope, discharge, or roughness. Several different roughness equations can be applied within the same cross section. Stable channel dimensions can be computed for fully alluvial sand-bed or gravel-bed streams. Normal depth calculations are compared to Shield's diagram for particle stability to determine if riprap is required. Riprap is sized based on either a given flow depth and velocity, or a given water discharge and cross-section.

4.2.3 SAM.sed Module

The SAM.sed module calculates the bed-material sediment discharge-rating curve by size class using hydraulic parameters, either calculated using the SAM.hyd module or specified by the user. The sediment transport functions defined in SAM.sed cover a range of riverine conditions, which are listed in Table 4-4. The sediment transport rate is determined by partitioning the sediment composition into size classes and summing the sediment transport rates computed for each size class.

Sediment transport functions are applied at a point, thus allowing for no temporal or spatial variability in the size-class distribution. In a natural stream, the size-class distribution of bed material changes with variations in spatial and temporal factors.

The designated bed gradation controls the calculated sediment discharge in a sediment transport function. The rate of transport increases exponentially as the grain size decreases. Therefore, bed-material gradations must be determined carefully.

Table 4-4 Sediment Transport Functions in SAM

Ackers-White	Ackers-White, D50
Brownlie, D50	Colby
Einstein (Bed-load)	Einstein (Total-load)
Engelund-Hansen	Laursen (Copeland)
Laursen (Madden), 1985	Meyer-Peter and Muller (MPM), 1948
MPM (1948), D50	Parker (gravel only)
Profitt (Sutherland)	Schoklitsch
Toffaleti	Toffaleti-MPM
Toffaleti-Schoklitsch	Yang
Yang, D50	van Rijn

4.2.4 SAM.yld Module

The SAM.yld module provides hydraulic design engineers with a systematic method for calculating sediment yield. Sediment yield is the total sediment outflow from a watershed or drainage basin, measurable at a reference cross section for a specified period.

The flow can be specified by either a flow duration curve or a hydrograph. The sediment discharge-rating curve can be specified as either sediment discharge or sediment concentration versus water discharge. The flow duration curve is integrated with the sediment discharge-rating curve.

Sediment yield can be subdivided based on the method of transport. The finer portion of the sediment yield continuously maintained in suspension by flow turbulence is called the wash load. The coarser fraction of the sediment yield actively exchanged with the sediment on the bed is called the bed-material sediment yield. If sediment transport is calculated using sediment transport equations, only the bed-material sediment yield is calculated. If sediment transport is determined from total load measurements, then the total sediment yield (i.e., combined wash load and bed-material load) is calculated.

4.3 Sediment Gradation Analysis

A composite gradation curve was estimated from samples obtained within the lower portions of the watershed. These samples were assumed representative of the bed material for the study reach based on field observations. The composite median bed-

material size, D_{50}, is 0.11 millimeters. Material size is characteristic of fine sand to medium sand material. Figure 4–1 shows the gradation curves for San Mateo Creek.

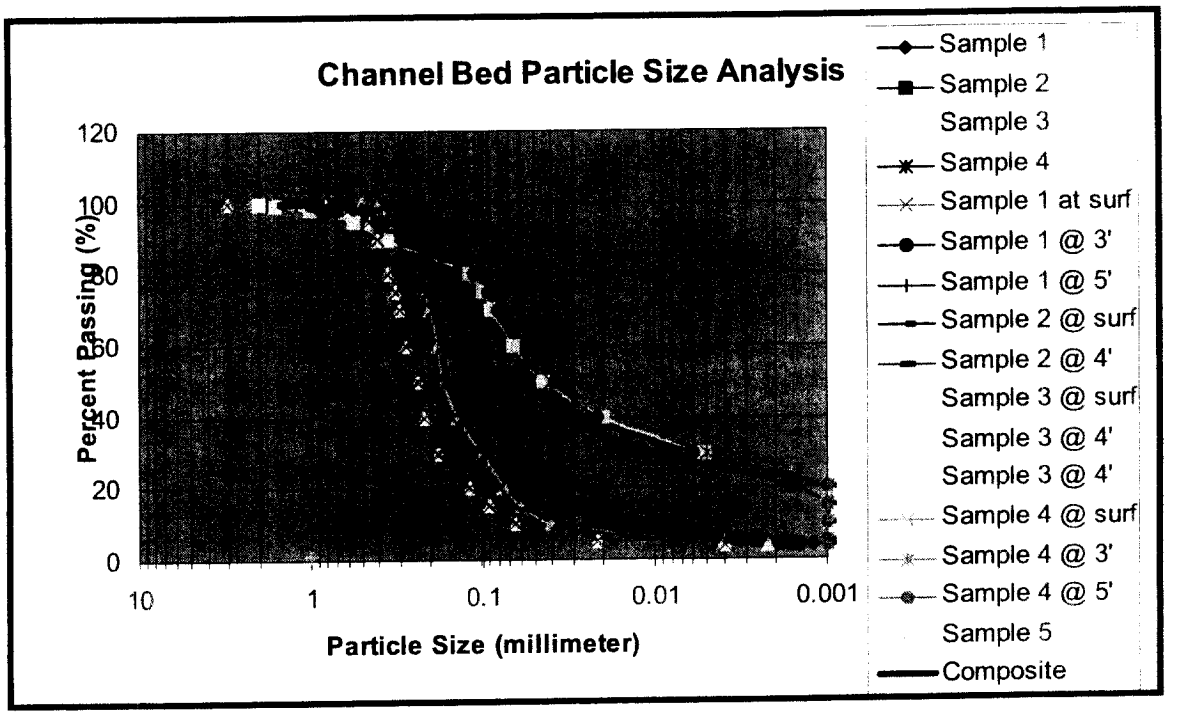

Figure 4-1 Sediment Gradation Curves

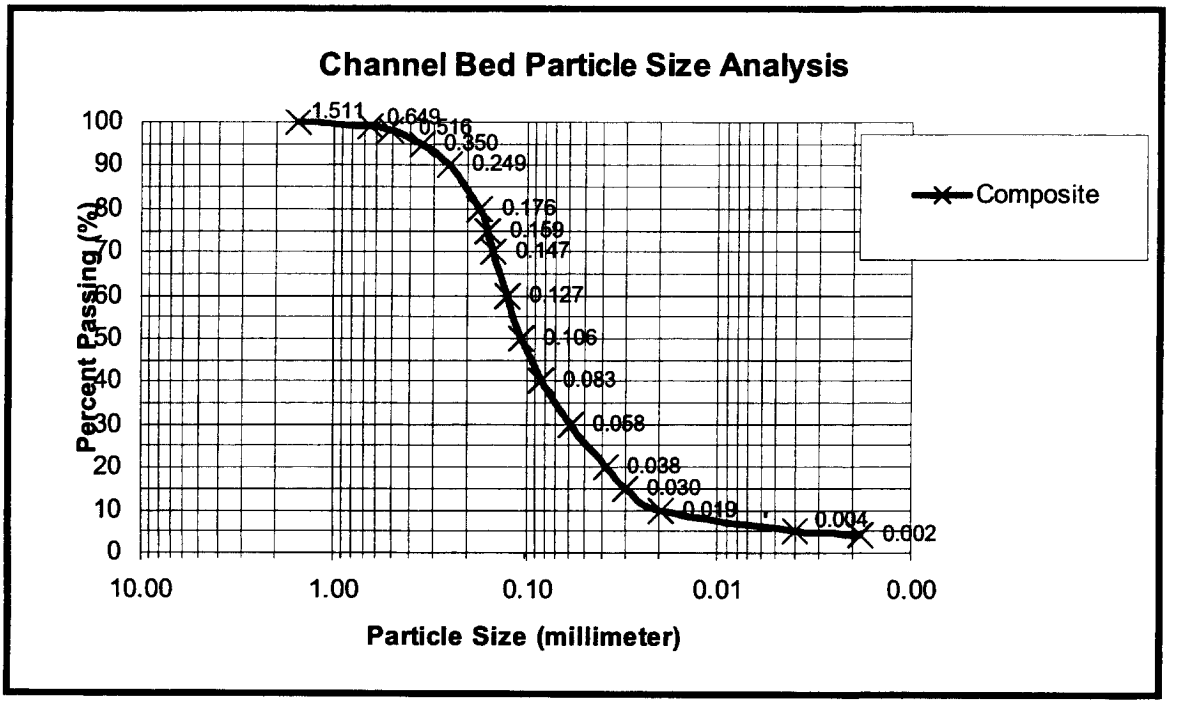

Figure 4-2 Sediment Gradation Curve used in SAM Model

4.4 Selection of Sediment Transport Models

Quantitative analysis of the aggradation, degradation, and lateral migration tendency of a stream requires knowledge of both the sediment transport capacity of the stream and the sediment supply to the stream. Several sediment transport functions are available for estimating either the bed-load or the total bed-material load (Table 4-4). The distinction can be critical in sand-bed streams, where the suspended bed-material load may be orders of magnitude greater than the bed-load. Another important difference in sediment transport functions is the application of the grain-size distribution. Most sediment transport functions were developed as single grain-size functions, typically using the median bed-material size to represent the total load. A multiple grain-size sediment transport function should be used. Multiple grain-size functions are very sensitive to the grain-size distribution of the bed material, particularly in the lower 10 percent of the gradation curve (Einstein, 1950).

Sediment transport functions consider the hydraulic conditions of the stream (i.e., velocity, depth, width, shear stress, and stream power) in varying combinations and the size characteristics of the bed material. The bed-material transport rate computed from these functions does not include the wash-load component of the total sediment load.

Most sediment transport functions are empirical in nature and should be applied to field conditions similar to the conditions in which they were developed. The selection process is based on the premise a sediment transport function that accurately predicts measured sediment transport rates in a gauged stream would be an appropriate predictor in an un-gauged stream with similar characteristics. Calculated screening parameters (i.e., d_{50}, slope, velocity, depth, and width) for the project stream are compared to the same screening parameters from a list of rivers (Brownlie 1981) that have sufficient sediment data to determine an appropriate sediment transport function. This selection process is only applicable to log-normal distributions since measured bed-material gradations were reduced to median grain sizes and geometric standard deviations.

A discrepancy ratio was calculated for each measured discharge:

$$\text{discrepancy ratio} = \frac{q_s \text{ computed}}{q_s \text{ measured}}$$

For each stream dataset, the percentage of discrepancy ratios between 0.5 and 2.0 was determined, and the average discrepancy ratio was computed. The sediment transport functions with the highest percentage of discrepancy ratios within accepted range were selected first and the function with the average discrepancy ratio closest to 1.0 was ranked highest.

Table 4-5 Study Reach and Location of Sediment Transport Subreaches

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ATC	63		Laursen (Madden)	68.25	1.10	1.15
			Toffaleti	63.49	1.13	1.30
			Laursen (Copeland)	69.84	1.14	1.28
CHO	33		Colby	69.71	0.83	0.56
			Ackers-White	42.42	1.21	1.92
			Engelund-Hansen	48.48	0.75	0.73
AMC	11		Laursen (Copeland)	45.45	1.09	1.22
			Einstein (Total Load	27.27	0.74	1.29
			Laursen (Madden)	27.27	0.69	0.88
NED	66		Engelund-Hansen	48.48	1.00	0.83
			Van Rijn	53.03	0.94	0.99
			Toffaleti-Schoklitsch	42.42	1.09	1.33
ACP	142		Engelund-Hansen	45.77	1.02	0.96
			Van Rijn	41.55	0.73	0.84
			Toffaleti-Schoklitsch	55.63	1.31	1.26
RED	30		Toffaleti-Schoklitsch	90.00	1.01	0.43
			Laursen (Copeland)	83.33	0.96	0.57
			Ackers-White	86.67	1.05	0.81

The Toffaleti-Schoklitsch and Engelund-Hansen sediment transport models demonstrated the best correlation. The Larsen (Madden) and Laursen (Copeland) transport models showed an acceptable level of correlation for comparison. Each of the models is described below.

4.4.1 Engelund-Hansen Sediment Transport Model

Engelund-Hansen (1967) proposed a formula that predicts the volumetric current related total sediment load for a reach based on an energy balance concept with a minimum amount of site-specific information.

4.4.2 Toffaleti-Schoklitsch Sediment Transport Model

The Toffaleti-Schoklitsch is a combined function for sand and gravel streams. Sediment transport is calculated using both functions by size class. Calculated bed load from the Toffaleti function is compared to that total calculated by Schoklitsch and the larger is used for bed load. Suspended load is then calculated using Toffaleti. Toffaleti (1968) is a multiple grain size function for sand bed rivers.

4.4.3 Laursen (Madden) (Madden, 1993) Sediment Transport Model

The Laursen (Madden) function is a multiple grain size function modified by Madden for sand bed transport. It has been used for mixtures of sand and gravel.

4.4.4 Laursen (Copeland) Sediment Transport Model

The Laursen (Copeland) model is a modification to Laursen's (1958) multiple grain size function, extending its range to larger gravel sizes.

4.5 Sediment Continuity Analysis (General Scour/Deposition)

For each subreach, a characteristic, rating curve was developed for each of the five (5) hydraulic parameters: water discharge, hydraulic depth, velocity, top width, and energy gradient. The representative sediment gradation curve was determined in Section 4.3.

Sediment transport models were selected in Section 4.4. The Toffaleti-Schoklitsch and Engelund-Hansen equations showed the higher correlations of the four models selected.

The sediment transport capacities for each subreach were calculated for each of the four (4) selected sediment transport models and for 2-, 10-, and 100-year storm events. The results for each event show consistent trends and thus, only the channel-forming event (10-year event) is shown below in Figure 4–3.

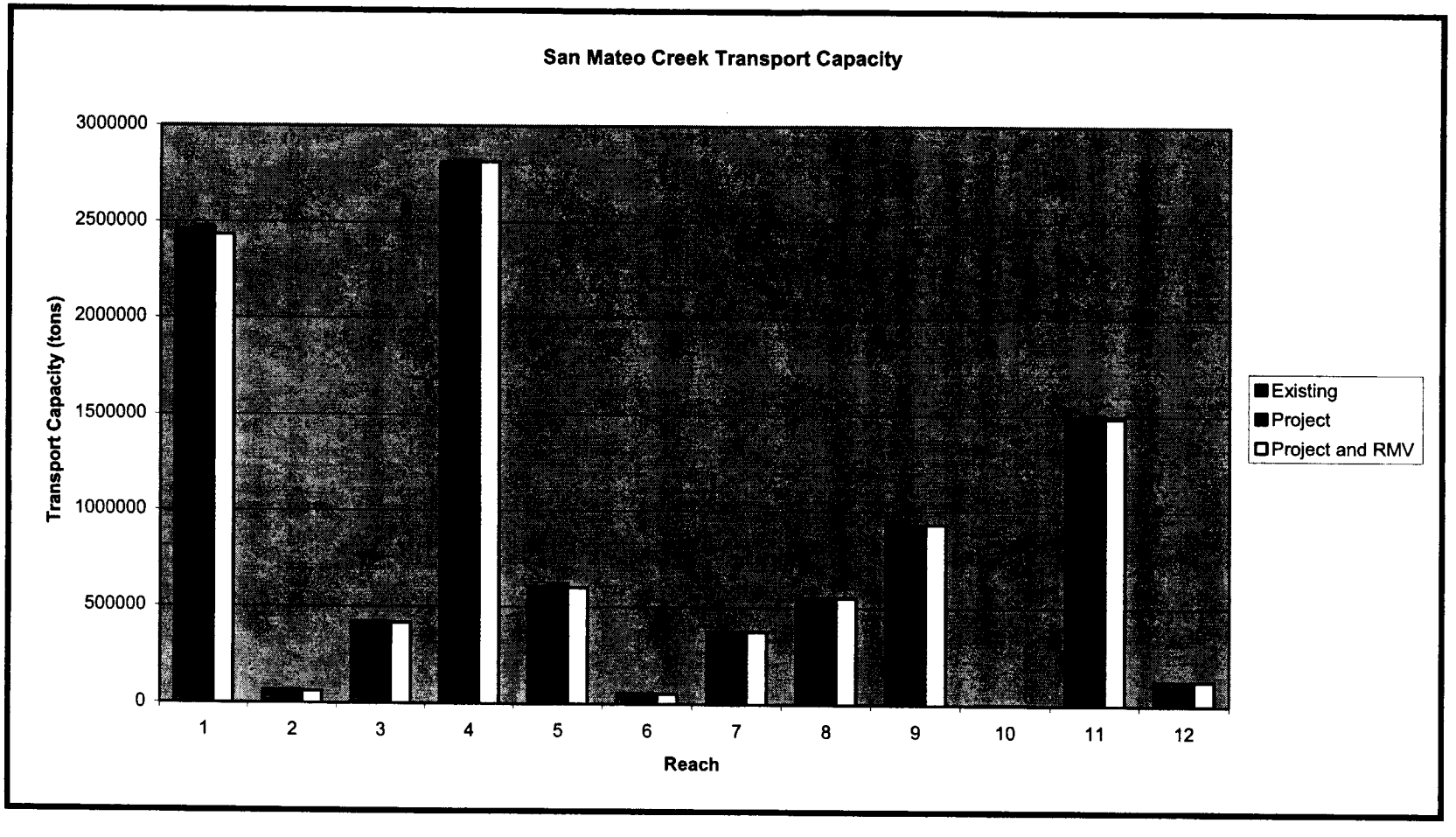

Figure 4-3 Sediment Transport Capacity for San Mateo Creek

Table 4-6 Comparison of Sediment Transport Rates (tons) – 10-Year Flood Event

Return Period (yrs)	Sediment Reach	Condition (tons)			Percent Change (%)	
		Existing Flow/Existing Conditions	Project Condition Flows/Project Alignment	Project Condition Flows and RMV/Project Alignment	Existing vs. Project	Existing vs. Project and RMV
10	1	2455708	2474967	2433473	1%	-1%
	2	66713	67114	62589	1%	-6%
	3	417873	418833	415075	0%	-1%
	4	2808180	2820651	2812567	0%	0%
	5	607878	621988	601039	2%	-1%
	6	55810	55880	55018	0%	-1%
	7	374053	374637	373359	0%	0%
	8	553269	555056	550835	0%	0%
	9	939283	928758	932643	-1%	-1%
	10	3333	3365	3309	1%	-1%
	11	1494352	1506435	1488804	1%	0%
	12	127629	125458	126882	-2%	-1%

5 Discussion of Rancho Mission Viejo Development Plan

A summary of the sedimentation analysis (sediment yield and sediment transport) for the Rancho Mission Viejo Development proposed partially within San Mateo Creek watershed is addressed in *The Ranch Plan Draft Program EIR No 589.* Anticipated changes in coarse and fine sediment yield resulting from project development were estimated for both the 2- and 100-year events using the MUSLE model. The results of the MUSLE modeling suggest that sediment yields within the watersheds are likely to decrease as a result of Ranch Plan development. However, additional factors – such as the contribution of episodic events were included in the assessment of watershed sediment yield to properly evaluate the project impacts. Upon considering these other factors, the analysis reveals that coarse sediment yields change by relatively minor amounts when comparing existing and post-construction conditions, commonly less than 15 tons per 2-year event, and less than 250 tons per 100-year event.

It was determined that nearly all watersheds and sub-basins will retain most or nearly all of their episodic sediment inputs because the key slopes yielding the coarse sediment will be left largely undisturbed. For example, the major source of coarse sediments in peak sediment transport rates based on the transport capacity of the channel were calculated as a preliminary assessment of long-term stream stability for the 2-, 10-, and 100-year discharge events for each of the sub-basins using the SAMwin model (ACOE program for Hydraulic Design Package of Channels). Peak transport rates per unit area were also calculated for each of the sub-basins. A preliminary sediment balance was performed on a reach-by-reach basis of the different creek systems to assess the relative magnitude and direction for change in the sediment transport capacity that provides an indicator of either erosion or sedimentation.

The results of the study in Rancho Mission Viejo indicate that the unmitigated development plans would alter the in-channel sediment transport processes by altering the hydrologic and hydraulic regime of the Cristianitos Creek channel systems. Altered flow regimes could potentially induce bed and/or bank instability, or contribute to existing instabilities. The impacts are considered potentially significant at the local scale (i.e., on the streams in the local canyons such as Chiquita, Gobernadora and Cristianitos) and will be mitigated by the development. By preventing increases in peak flows, channels will not be subject to significantly altered sediment transport characteristics and the impacts of the proposed development plans will be reduced to a level that is less than significant. The channel stability and adjustment to the proposed plans will be monitored by RMV as an additional mitigation measure.

6 Summary

This report summarizes the results of the qualitative and quantitative sediment continuity analyses performed for the lower San Mateo Creek channel to evaluate the sediment transport capacity and sediment delivery to the beach. The focus of the study is to determine whether there is an impact to sediment delivery resulting from the proposed project, or a cumulative impact with other planned development in the watershed.

The results of the sediment continuity (sediment transport) analysis for the three scenarios (existing watershed condition, with-project, and cumulative with RMV project conditions) are summarized in Table 4-6. As shown, the impacts of the project to sediment transport capacity of the lower San Mateo Creek channel are insignificant. The SOCTIIP project alters about 0.3% of the San Mateo Creek watershed, resulting in insignificant changes to hydrology and hydraulics of the channel, and thus resulting in insignificant changes to sediment transport.

The cumulative impacts of the project to the lower San Mateo Creek channel and the construction of the RMV project are also insignificant since changes to the channel hydraulics were insignificant. As discussed in Section 2, San Mateo Creek has been identified (SLA Study for the Corps of Engineers, 1985) as being controlled by sediment transport. Insignificant changes to sediment transport of the lower channel reach would translate to insignificant changes to the sediment delivery to the beach. Mitigation proposed by the RMV project must be monitored, since studies there showed the potential for local change to creeks resulting from the development. The contribution from the toll road is not expected to be a significant factor in any of the study cases. Based on the qualitative and quantitative analyses performed for the San Mateo Creek channel and based on available information on hydrology and channel hydraulics, the results of the sediment transport analysis conclude that the project will result in insignificant impacts to sediment delivery to San Onofre State Beach.

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USACE, HEC-RAS

USACE, SAM

Appendix A - Hydraulics

Existing Conditions 100Y

River Station	Q (cfs)	Velocity (Ft/s)	Hydraulic Depth (Ft)	E.G. Slope (Ft/Ft)	Top Width (Ft)
12905	47312	9.83	4.03	0.0077	1575
11695	47312	8.72	5.28	0.0034	1448
10698	47312	7.95	6.16	0.0015	1162
10104	47312	8.16	4.34	0.0037	1640
9476	47312	12.11	5.70	0.0070	860
8889	47312	9.84	4.75	0.0044	1239
8290	47312	9.73	3.76	0.0107	1243
7668	47312	6.32	6.81	0.0026	1146
7117	47312	5.64	7.75	0.0015	1095
6554	47312	5.10	10.78	0.0008	896
6147	47312	7.01	4.17	0.0013	1879
5899	47312	14.08	5.23	0.0063	1900
5313	47312	12.79	4.03	0.0138	1487
4690	47312	6.03	6.28	0.0018	2141
4090	47312	6.45	5.69	0.0038	1579
3486	47312	3.57	12.00	0.0004	2086
2884	47312	4.13	5.74	0.0004	2933
2680	47312	4.59	5.71	0.0006	2766
2284	47312	4.58	5.89	0.0006	2761
2075	47312	4.47	7.58	0.0003	2803
1907	47312	3.39	10.39	0.0001	2830
1701	47312	2.77	12.18	0.0002	2783
1525	47312	4.11	14.10	0.0003	2453
1307	47312	8.11	16.38	0.0014	378
1053	47312	9.97	13.29	0.0030	381
977	47312	12.33	11.34	0.0053	372
927	47312	20.75	7.39	0.0287	331
667	47312	16.06	7.06	0.0118	497
482	47312	11.82	5.96	0.0067	808
284	47312	13.40	4.63	0.0125	956
85	47312	13.50	3.95	0.0237	989

Existing Conditions 10Y

River Station	Q (cfs)	Velocity (Ft/s)	Hydraulic Depth (Ft)	E.G. Slope (Ft/Ft)	Top Width (Ft)
12905	6999	3.75	1.81	0.0038	1282
11695	6999	6.76	1.29	0.0101	917
10698	6999	3.04	5.46	0.0004	421
10104	6999	5.83	2.59	0.0093	464
9476	6999	5.72	4.08	0.0045	313
8889	6999	4.06	2.91	0.0023	626
8290	6999	6.16	1.12	0.0120	1010
7668	6999	3.56	1.96	0.0038	1058
7117	6999	5.72	1.90	0.0056	645
6554	6999	1.91	4.47	0.0004	841
6147	6999	2.94	4.53	0.0007	532
5899	6999	6.09	2.66	0.0033	480
5313	6999	7.15	1.33	0.0137	1013
4690	6999	2.48	3.25	0.0009	940
4090	6999	6.07	1.13	0.0341	1025
3486	6999	1.47	5.38	0.0002	905
2884	6999	2.12	5.37	0.0003	649
2680	6999	2.89	4.70	0.0007	537
2284	6999	8.00	1.95	0.0222	465
2075	6999	4.76	4.45	0.0012	389
1907	6999	2.92	6.46	0.0004	613
1701	6999	3.35	6.70	0.0008	677
1525	6999	3.35	7.24	0.0007	1064
1307	6999	2.92	7.77	0.0006	315
1053	6999	4.44	5.04	0.0023	324
977	6999	6.84	3.88	0.0077	277
927	6999	11.08	2.35	0.0399	278
667	6999	6.04	4.48	0.0044	272
482	6999	5.13	4.20	0.0033	344
284	6999	6.10	2.74	0.0076	465
85	6999	6.54	1.52	0.0200	760

Existing Conditions 2Y

River Station	Q (cfs)	Velocity (Ft/s)	Hydraulic Depth (Ft)	E.G. Slope (Ft/Ft)	Top Width (Ft)
12905	406	3.10	1.27	0.0039	169
11695	406	5.46	0.92	0.0185	81
10698	406	0.37	4.17	0.0000	265
10104	406	4.17	0.54	0.0454	182
9476	406	1.26	1.38	0.0012	234
8889	406	1.43	0.66	0.0020	431
8290	406	4.79	0.70	0.0212	121
7668	406	1.85	0.57	0.0034	393
7117	406	4.12	0.51	0.0233	195
6554	406	0.48	1.32	0.0001	636
6147	406	0.67	1.35	0.0002	449
5899	406	1.56	0.98	0.0014	265
5313	406	3.92	0.48	0.0213	216
4690	406	0.46	1.71	0.0001	516
4090	406	3.05	0.30	0.0530	448
3486	406	0.24	2.64	0.0000	654
2884	406	0.29	3.15	0.0000	445
2680	406	0.50	3.15	0.0000	257
2284	406	4.44	0.61	0.0289	149
2075	406	1.71	1.36	0.0010	176
1907	406	0.55	2.52	0.0001	291
1701	406	0.72	1.94	0.0002	290
1525	406	0.43	4.41	0.0000	215
1307	406	0.41	3.48	0.0000	282
1053	406	1.26	1.24	0.0014	258
977	406	2.38	0.87	0.0072	201
927	406	4.51	0.66	0.0355	143
667	406	1.41	1.58	0.0012	182
482	406	1.01	1.65	0.0006	242
284	406	1.71	0.90	0.0038	264
85	406	2.87	0.56	0.0200	251

Project Condition 100Y

River Station	Q (cfs)	Velocity (Ft/s)	Hydraulic Depth (Ft)	E.G. Slope (Ft/Ft)	Top Width (Ft)
12905	47356	9.83	4.03	0.0077	1575
11695	47356	8.72	5.28	0.0034	1450
10698	47356	7.95	6.16	0.0015	1162
10104	47356	8.16	4.35	0.0037	1640
9476	47356	12.12	5.70	0.0070	860
8889	47356	9.84	4.75	0.0044	1239
8290	47356	9.73	3.76	0.0107	1243
7668	47356	6.32	6.81	0.0026	1146
7117	47356	5.64	7.75	0.0015	1096
6554	47356	5.10	10.78	0.0008	896
6147	47356	7.01	4.17	0.0013	1883
5899	47356	14.07	5.23	0.0063	1904
5313	47356	12.82	4.03	0.0139	1486
4690	47356	6.01	6.31	0.0018	2147
4090	47356	6.39	5.74	0.0036	1589
3486	47356	3.56	12.00	0.0004	2146
2884	47356	4.08	5.82	0.0004	2934
2680	47356	4.52	5.80	0.0005	2767
2284	47356	4.54	5.96	0.0006	2750
2075	47356	4.48	7.64	0.0003	2792
1907	47356	3.24	10.42	0.0002	2819
1701	47356	2.62	12.20	0.0002	2779
1525	47356	3.84	14.07	0.0004	2446
1307	47356	8.09	16.43	0.0014	379
1053	47356	9.97	13.30	0.0030	381
977	47356	12.34	11.34	0.0053	372
927	47356	20.76	7.39	0.0287	331
667	47356	16.06	7.07	0.0118	497
482	47356	11.82	5.97	0.0067	809
284	47356	13.40	4.63	0.0125	956

Project Condition 10Y

River Station	Q (cfs)	Velocity (Ft/s)	Hydraulic Depth (Ft)	E.G. Slope (Ft/Ft)	Top Width (Ft)
12905	7025	3.74	1.82	0.0037	1283
11695	7025	6.79	1.28	0.0102	917
10698	7025	3.05	5.46	0.0004	422
10104	7025	5.83	2.60	0.0092	464
9476	7025	5.74	4.08	0.0045	313
8889	7025	4.07	2.91	0.0023	626
8290	7025	6.17	1.12	0.0120	1011
7668	7025	3.56	1.97	0.0038	1058
7117	7025	5.70	1.90	0.0055	648
6554	7025	1.92	4.48	0.0004	842
6147	7025	2.95	4.52	0.0007	534
5899	7025	6.09	2.66	0.0032	480
5313	7025	7.18	1.33	0.0139	1013
4690	7025	2.48	3.26	0.0009	940
4090	7025	6.06	1.13	0.0338	1026
3486	7025	1.47	5.39	0.0002	906
2884	7025	2.12	5.37	0.0003	649
2680	7025	2.89	4.71	0.0007	537
2284	7025	7.99	1.96	0.0220	465
2075	7025	4.67	4.60	0.0012	386
1907	7025	3.01	6.46	0.0004	612
1701	7025	3.49	6.68	0.0010	675
1525	7025	3.57	7.03	0.0009	1058
1307	7025	2.92	7.78	0.0006	316
1053	7025	4.45	5.05	0.0023	324
977	7025	6.85	3.89	0.0077	277
927	7025	11.09	2.36	0.0398	278
667	7025	6.06	4.49	0.0044	272
482	7025	5.14	4.21	0.0033	345
284	7025	6.11	2.75	0.0076	465
85	7025	6.55	1.53	0.0200	760

Project Condition 2Y

River Station	Q (cfs)	Velocity (Ft/s)	Hydraulic Depth (Ft)	E.G. Slope (Ft/Ft)	Top Width (Ft)
12905	411	3.11	1.28	0.0039	169
11695	411	5.46	0.93	0.0183	81
10698	411	0.37	4.16	0.0000	266
10104	411	4.15	0.54	0.0447	184
9476	411	1.27	1.39	0.0012	234
8889	411	1.43	0.66	0.0020	432
8290	411	4.81	0.70	0.0212	121
7668	411	1.85	0.58	0.0034	394
7117	411	4.13	0.51	0.0233	195
6554	411	0.49	1.33	0.0001	637
6147	411	0.67	1.36	0.0002	449
5899	411	1.57	0.99	0.0014	265
5313	411	3.95	0.48	0.0215	217
4690	411	0.46	1.72	0.0001	517
4090	411	3.07	0.30	0.0536	449
3486	411	0.24	2.64	0.0000	655
2884	411	0.29	3.15	0.0000	445
2680	411	0.50	3.16	0.0000	258
2284	411	4.45	0.61	0.0289	150
2075	411	1.73	1.35	0.0010	175
1907	411	0.59	2.49	0.0001	280
1701	411	0.79	1.87	0.0002	279
1525	411	0.47	4.29	0.0000	204
1307	411	0.42	3.46	0.0000	282
1053	411	1.27	1.25	0.0014	258
977	411	2.39	0.87	0.0072	202
927	411	4.50	0.65	0.0362	146
667	411	1.42	1.59	0.0012	182
482	411	1.02	1.66	0.0006	243
284	411	1.72	0.90	0.0039	265

Project Conditions and RMV Development 100Y

River Station	Q (cfs)	Velocity (Ft/s)	Hydraulic Depth (Ft)	E.G. Slope (Ft/Ft)	Top Width (Ft)
12905	46469	9.76	3.99	0.0077	1569
11695	46469	8.69	5.23	0.0034	1417
10698	46469	7.88	6.13	0.0015	1156
10104	46469	8.15	4.31	0.0038	1621
9476	46469	12.04	5.65	0.0070	857
8889	46469	9.78	4.71	0.0044	1233
8290	46469	9.69	3.71	0.0107	1242
7668	46469	6.29	6.73	0.0026	1145
7117	46469	5.60	7.66	0.0015	1095
6554	46469	5.05	10.70	0.0008	896
6147	46469	6.97	4.31	0.0013	1781
5899	46469	13.95	5.22	0.0063	1881
5313	46469	12.76	3.98	0.0140	1471
4690	46469	5.97	6.24	0.0018	2130
4090	46469	6.35	5.68	0.0036	1578
3486	46469	3.51	12.00	0.0003	2086
2884	46469	4.88	8.55	0.0006	2734
2680	46469	4.58	5.62	0.0006	2765
2284	46469	4.63	5.77	0.0006	2749
2075	46469	4.53	7.45	0.0003	2791
1907	46469	3.25	10.23	0.0002	2818
1701	46469	2.61	12.01	0.0002	2762
1525	46469	3.83	13.88	0.0004	2437
1307	46469	8.01	16.30	0.0014	378
1053	46469	9.89	13.17	0.0030	380
977	46469	12.27	11.21	0.0054	371
927	46469	20.64	7.31	0.0288	330
667	46469	15.98	7.01	0.0118	494
482	46469	11.71	5.94	0.0066	805
284	46469	13.35	4.58	0.0126	953
85	46469	13.40	3.92	0.0237	986

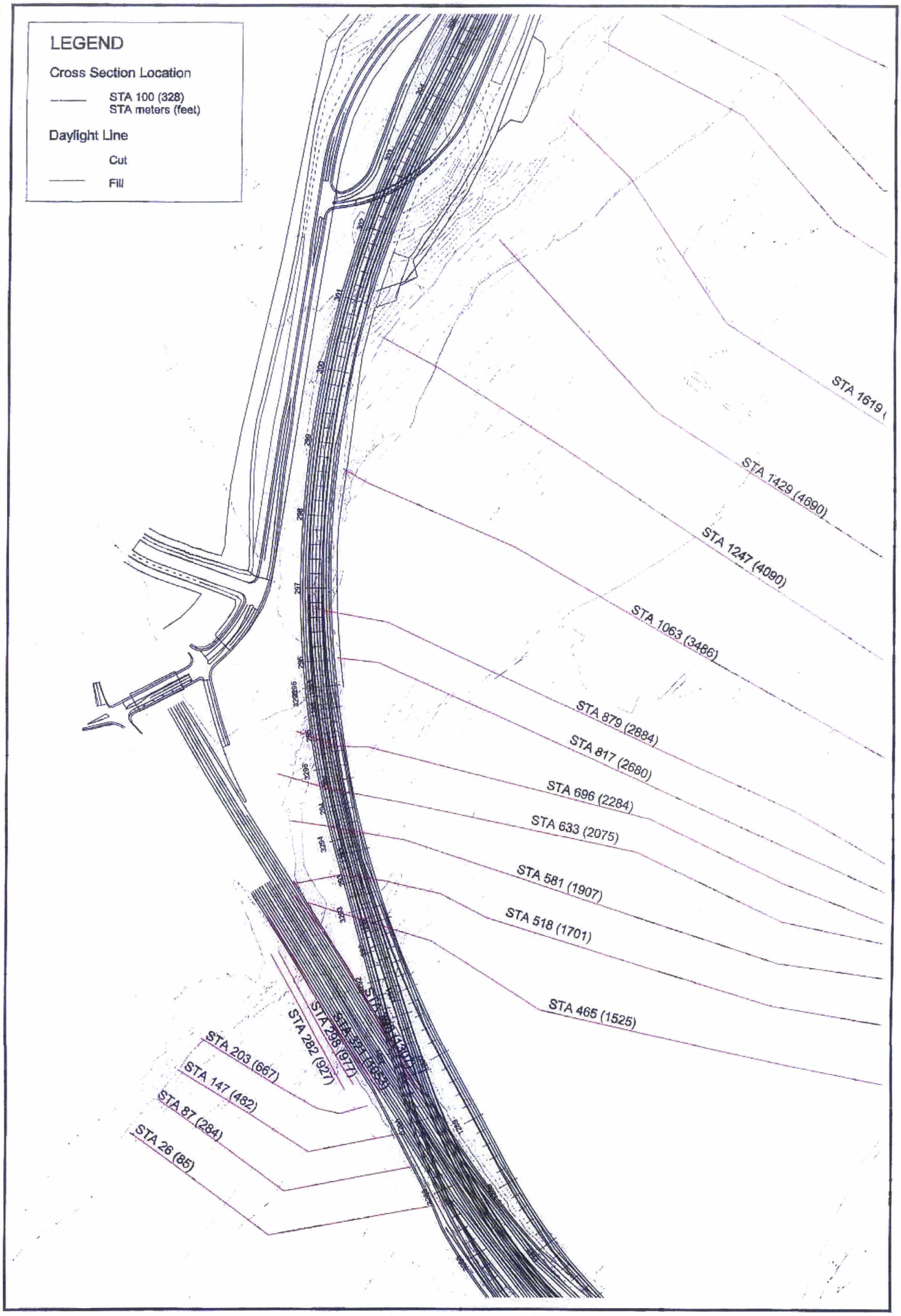
Project Conditions and RMV Development 10Y

River Station	Q (cfs)	Velocity (Ft/s)	Hydraulic Depth (Ft)	E.G. Slope (Ft/Ft)	Top Width (Ft)
12905	6975	3.74	1.81	0.0038	1282
11695	6975	6.76	1.28	0.0102	916
10698	6975	3.04	5.46	0.0004	421
10104	6975	5.82	2.59	0.0093	464
9476	6975	5.71	4.07	0.0045	313
8889	6975	4.05	2.91	0.0023	625
8290	6975	6.16	1.12	0.0120	1010
7668	6975	3.55	1.96	0.0038	1058
7117	6975	5.72	1.90	0.0056	642
6554	6975	1.91	4.47	0.0004	841
6147	6975	2.93	4.53	0.0007	531
5899	6975	6.07	2.65	0.0032	480
5313	6975	7.15	1.33	0.0138	1012
4690	6975	2.47	3.25	0.0009	939
4090	6975	6.05	1.13	0.0340	1025
3486	6975	1.47	5.37	0.0002	905
2884	6975	2.11	5.36	0.0003	649
2680	6975	2.88	4.69	0.0007	536
2284	6975	7.99	1.94	0.0222	465
2075	6975	4.66	4.59	0.0012	384
1907	6975	3.00	6.45	0.0004	609
1701	6975	3.48	6.65	0.0010	670
1525	6975	3.55	7.15	0.0009	1048
1307	6975	2.91	7.76	0.0006	315
1053	6975	4.43	5.03	0.0023	324
977	6975	6.83	3.87	0.0077	276
927	6975	11.06	2.35	0.0398	278
667	6975	6.03	4.48	0.0044	272
482	6975	5.12	4.20	0.0033	344
284	6975	6.09	2.74	0.0076	464

Project Conditions and RMV Development 2Y

River Station	Q (cfs)	Velocity (Ft/s)	Hydraulic Depth (Ft)	E.G. Slope (Ft/Ft)	Top Width (Ft)
12905	46469	9.76	3.99	0.0077	1569
11695	46469	8.69	5.23	0.0034	1417
10698	46469	7.88	6.13	0.0015	1156
10104	46469	8.15	4.31	0.0038	1621
9476	46469	12.04	5.65	0.0070	857
8889	46469	9.78	4.71	0.0044	1233
8290	46469	9.69	3.71	0.0107	1242
7668	46469	6.29	6.73	0.0026	1145
7117	46469	5.60	7.66	0.0015	1095
6554	46469	5.05	10.70	0.0008	896
6147	46469	6.97	4.31	0.0013	1781
5899	46469	13.95	5.22	0.0063	1881
5313	46469	12.76	3.98	0.0140	1471
4690	46469	5.97	6.24	0.0018	2130
4090	46469	6.35	5.68	0.0036	1578
3486	46469	3.51	12.00	0.0003	2086
2884	46469	4.88	8.55	0.0006	2734
2680	46469	4.58	5.62	0.0006	2765
2284	46469	4.63	5.77	0.0006	2749
2075	46469	4.53	7.45	0.0003	2791
1907	46469	3.25	10.23	0.0002	2818
1701	46469	2.61	12.01	0.0002	2762
1525	46469	3.83	13.88	0.0004	2437
1307	46469	8.01	16.30	0.0014	378
1053	46469	9.89	13.17	0.0030	380
977	46469	12.27	11.21	0.0054	371
927	46469	20.64	7.31	0.0288	330
667	46469	15.98	7.01	0.0118	494
482	46469	11.71	5.94	0.0066	805
284	46469	13.35	4.58	0.0126	953
85	46469	13.40	3.92	0.0237	986

Appendix B - Location of Cross-Sections

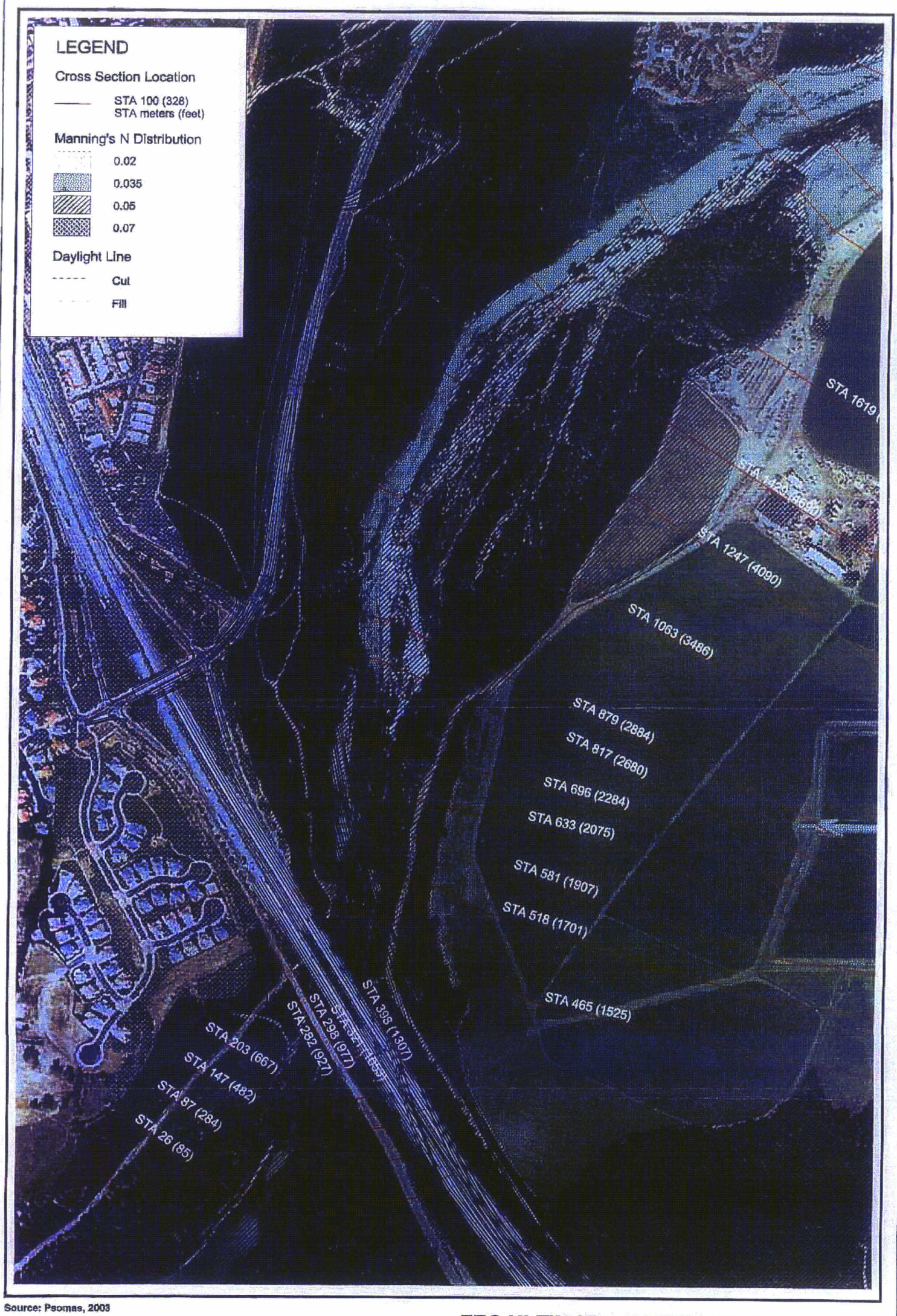


Source: Psomas, 2003

0 60 120 180 Meters

0 200 400 600 800 Feet

FEC ULTIMATE ALTERNATIVE
San Mateo Creek Crossing Location and Topographic Layout

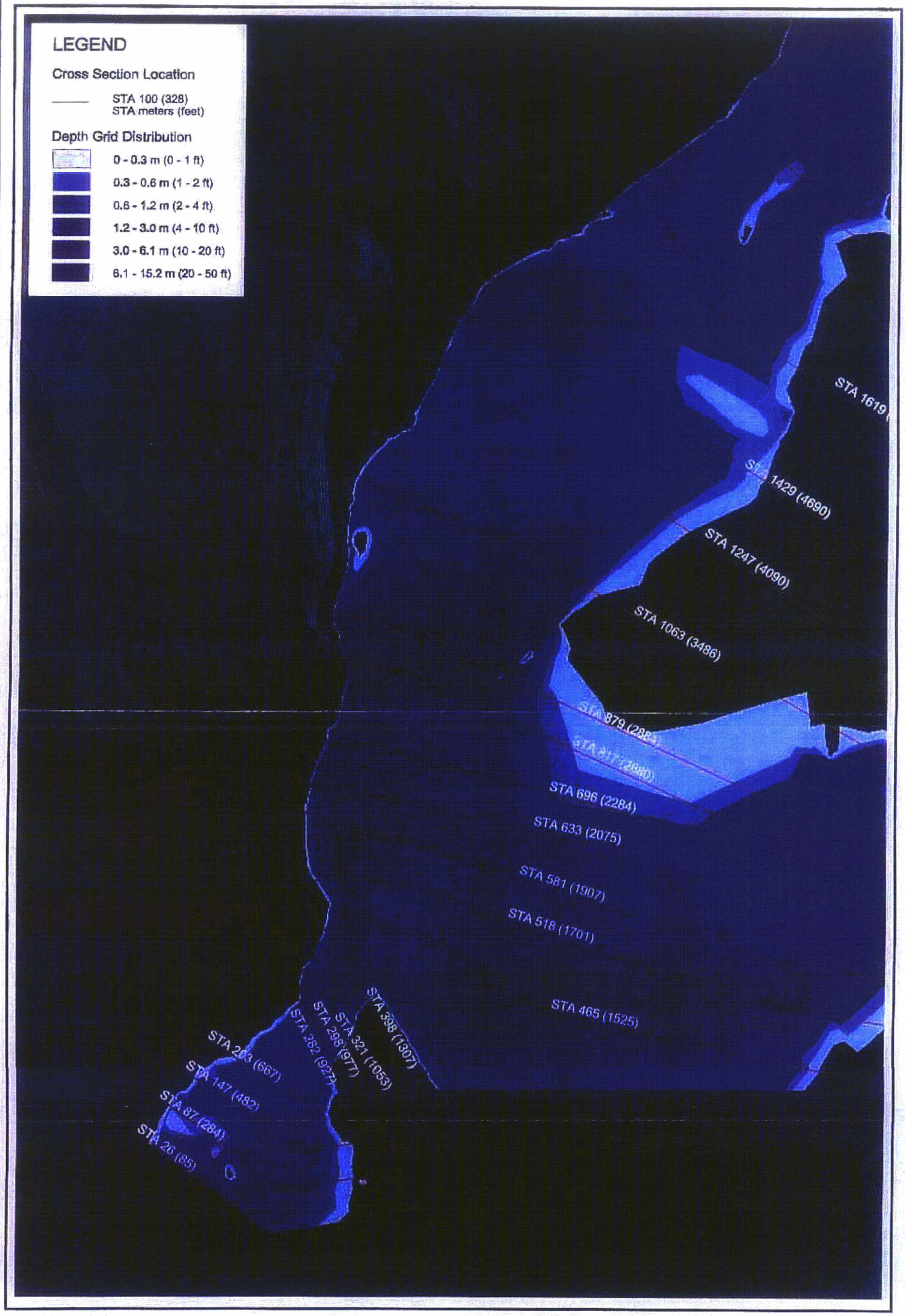


Source: Psomas, 2003

0 60 120 180 Meters

0 200 400 600 800 Feet

FEC ULTIMATE ALTERNATIVE
San Mateo Creek Aerial Photo and Manning's N Distribution

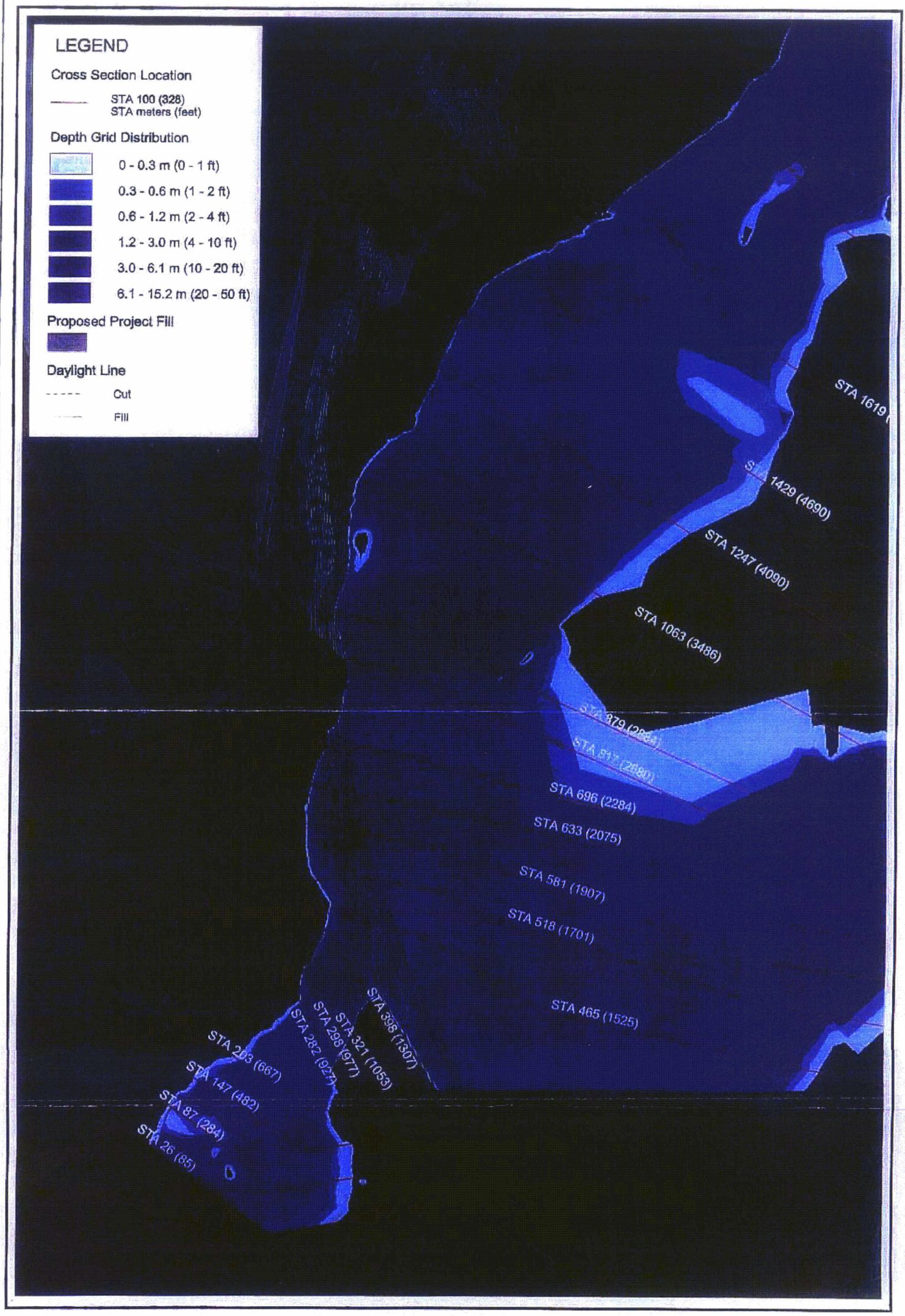


Source: Psomas, 2003

0 60 120 180 Meters

0 200 400 600 800 Feet

FEC ULTIMATE ALTERNATIVE
San Mateo Creek Existing Conditions
100-Yr Floodplain with Depth Grid



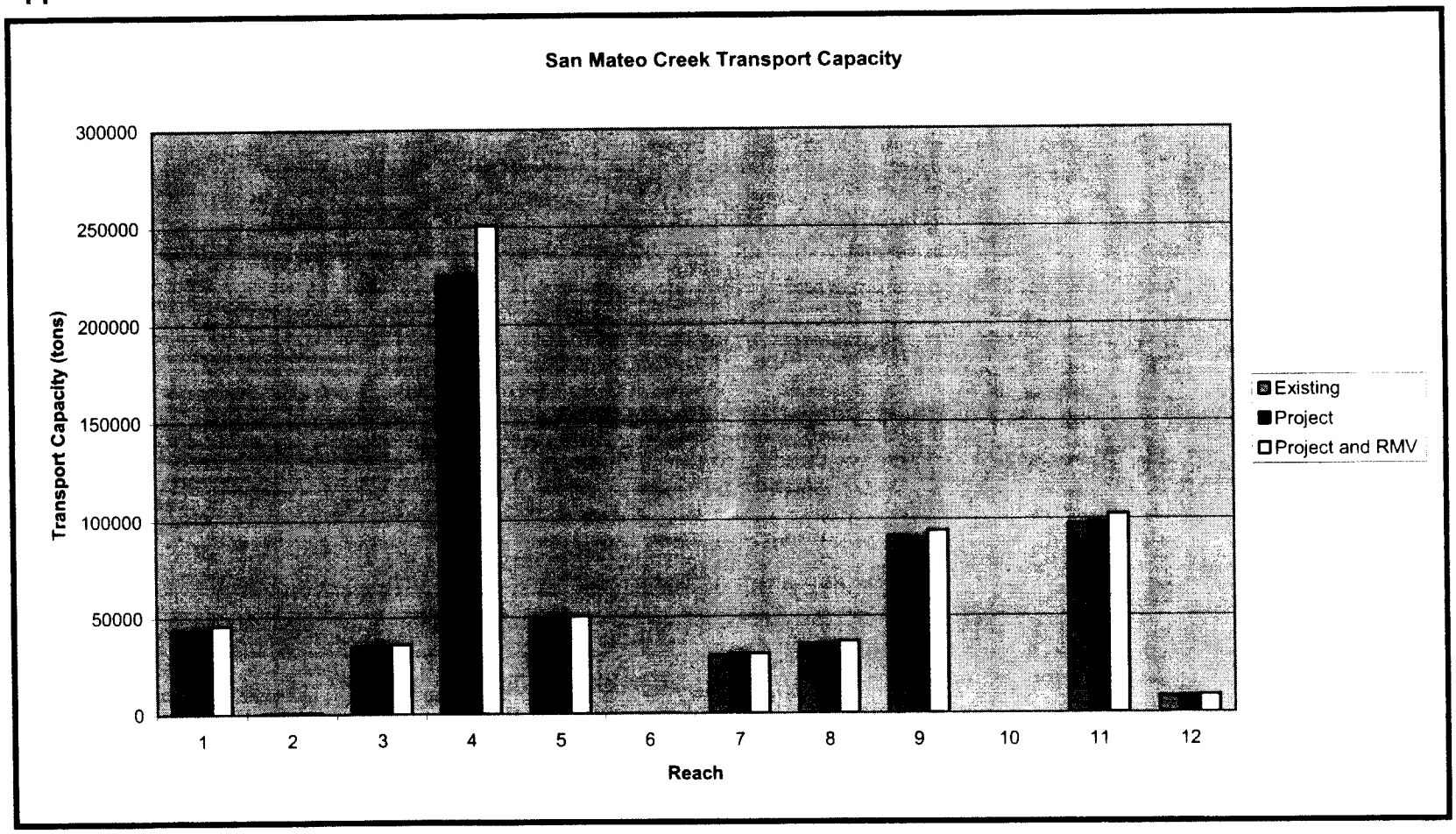
Source: Psomas, 2003

0 60 120 180 Meters

0 200 400 600 800 Feet

FEC ULTIMATE ALTERNATIVE
San Mateo Creek Project Conditions
100-Yr Floodplain with Depth Grid

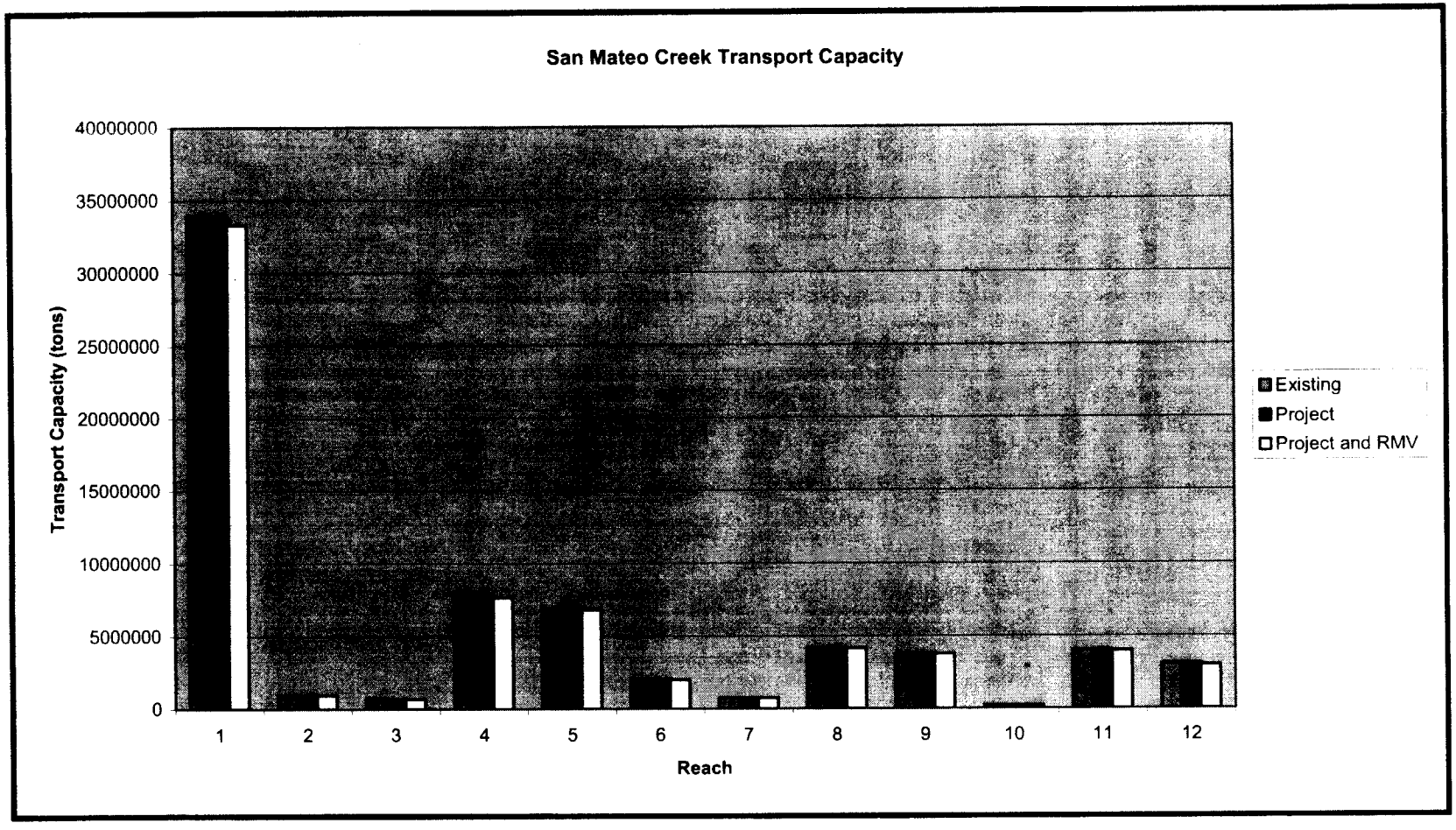
Appendix C - SAM Runs



Sediment Transport Capacity for San Mateo Creek

Comparison of Sediment Transport Rates (tons) – 2-Year Flood Event

Return Period (yrs)	Sediment Reach	Condition (tons)			Percent Change (%)	
		Existing Flow/Existing Conditions	Project Condition Flows/Project Alignment	Project Condition Flows and RMV/Project Alignment	Existing vs. Project	Existing vs. Project and RMV
2	1	43391	44239	45829	2%	6%
	2	619	628	660	1%	7%
	3	34615	35458	36136	2%	4%
	4	224993	226085	250907	0%	12%
	5	48648	50606	50474	4%	4%
	6	162	167	173	3%	7%
	7	29745	30516	30906	3%	4%
	8	35554	35928	37111	1%	4%
	9	91115	90014	93856	-1%	3%
	10	5	5	5	0%	0%
	11	97178	98146	102230	1%	5%
	12	8198	8435	8872	3%	8%



Sediment Transport Capacity for San Mateo Creek

Comparison of Sediment Transport Rates (tons) – 100-Year Flood Event

Return Period (yrs)	Sediment Reach	Condition (tons)			Percent Change (%)	
		Existing Flow/Existing Conditions	Project Condition Flows/Project Alignment	Project Condition Flows and RMV/Project Alignment	Existing vs. Project	Existing vs. Project and RMV
100	1	33973376	33966860	33310312	0%	-2%
	2	982660	982707	955230	0%	-3%
	3	764176	693626	696113	-9%	-9%
	4	7798739	7596406	7641859	-3%	-2%
	5	6847020	6975913	6815090	2%	0%
	6	2029580	2030486	1977691	0%	-3%
	7	744302	744708	746722	0%	0%
	8	4218174	4216596	4145616	0%	-2%
	9	3790314	3781297	3741102	0%	-1%
	10	220756	220782	216088	0%	-2%
	11	3990148	4023418	3959082	1%	-1%
	12	3052579	3048834	2961011	0%	-3%

The Sediment Transport Study Data Sheets are bound separately. The Data Sheets are available for public review during regular business hours at:

Transportation Corridor Agencies
125 Pacifica
Irvine, CA 92618
Phone: 949-754-3444
Hours: 8 AM to 5 PM, Monday through Friday.

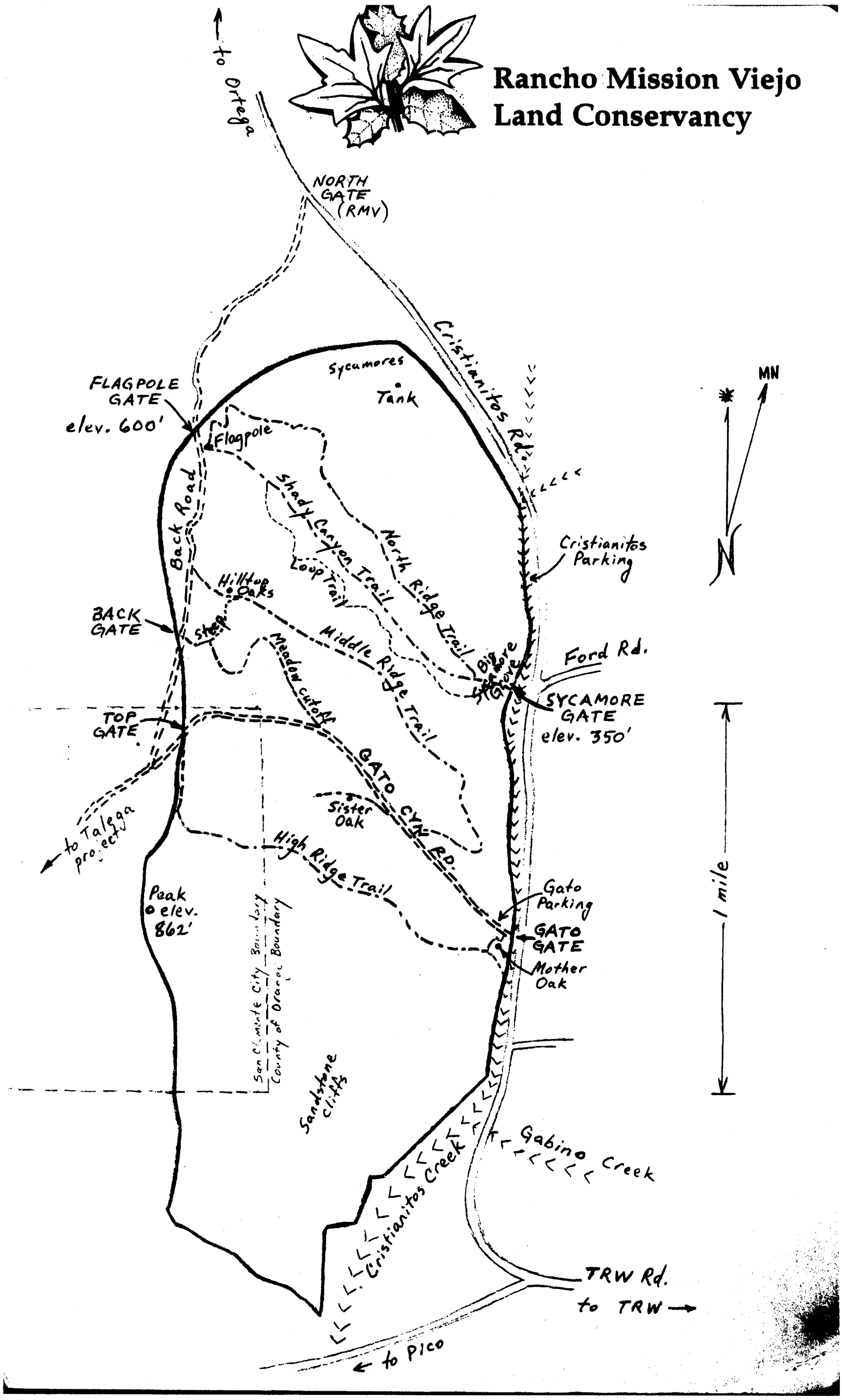
San Clemente Information Center
209 Avenida Del Mar
Suite 102
San Clemente, CA 92672
Phone: 949-366-4941
Hours: Tuesday through Friday, 9:30 AM to 5:00 PM and Saturday from 10:00 AM to 4:00 PM.

In addition, this report may be purchased in either hard copy or on a compact disc (CD) by calling the TCA at 949-754-3444.

Attachment 9

Conservancy Trail Map

Rancho Mission Viejo Land Conservancy



Attachment 10

NCCP/HCP and SAMP/MSAA Consistency Analysis and Compatibility Map

Attachment 10

SOCTIIP Analysis of the NCCP/HCP Planning Guidelines and SAMP/MSAA Watershed Planning Principles

Comments on the SOCTIIP Draft EIS/SEIR questioned the relationship of the SOCTIIP alternatives to the NCCP/HCP reserve design guidelines and the SAMP/MSAA Watershed Planning Principles. In particular, see Response to Comment O21-263. In response to those comments, this analysis has been prepared.

For the following analysis, two sets of guidelines and planning principles published for the coordinated NCCP/HCP and SAMP/MSAA planning processes have been utilized. The guidelines and principles represent the latest available biological information on the southern subregion NCCP/HCP and SAMP/MSAA study area. This analysis focuses on the SOCTIIP A7C-FEC-M/Preferred Alternative, and addresses the relationship of the alternative to the Draft Southern Subregion NCCP/HCP Planning Guidelines and the Draft San Juan Creek Watershed/Western San Mateo Creek SAMP/MSAA Watershed Planning Principles. While the SAMP and MSAA processes have previously proceeded as one process, it is TCA's understanding that the two processes may be separated. If they proceed separately, the MSAA may be incorporated into the NCCP/HCP process and the SAMP would proceed on a separate track. Because the Planning Guidelines and Watershed Planning Principles continue to guide these planning processes, this Attachment continues to address the Guidelines and Principles as they were originally established.

Before discussing each specific guideline and principle, some background on the nature of those processes and the SOCTIIP project is provided. The NCCP/HCP reserve design process considers the entire 91,000-acre southern subregion. The objective of the process is to designate areas for permanent habitat preservation along with areas that can be developed. Thus, the process is a landscape-level planning process. In addition, as other NCCP/HCPs have done, it is expected that the final NCCP/HCP will include provisions for infrastructure to support both existing development and planned development that is consistent with the NCCP/HCP. The NCCP/HCP is not being planned in a vacuum; there is existing development and approved plans that provide for infrastructure within the NCCP/HCP area. The SOCTIIP project is an infrastructure project that will provide mobility for the public in accordance with regional land use and transportation planning. A SOCTIIP corridor build alternative has been on the Orange County Master Plan of Arterial Highways since 1981.

NCCP/HCP Reserve Design Guidelines

The following excerpts from the NCCP Guidelines examine the purposes of the guidelines and the manner in which they were formulated to provide guidance for protecting, managing, and enhancing resources within the southern subregion. The SOCTIIP Preferred Alternative is partially located within the NCCP/HCP southern subregion. The Preferred Alternative extends into northern San Diego County, while the NCCP/HCP southern subregion does not extend past the Orange County border. The SOCTIIP study area is illustrated on Figure 4.10-1 of the EIS/SEIR:

> "The Planning Guidelines for the Southern NCCP/HCP . . . are intended to provide an objective and common set of planning considerations and recommendations for use by the resource and regulatory agencies and the program participants in selecting and evaluating reserve program, restoration and management alternatives for the Southern NCCP/HCP." The Southern NCCP/HCP Guidelines were prepared by the NCCP/SAMP Working Group. These guidelines represent a synthesis of the following source materials:

- The NCCP Conservation Guidelines, including the seven Tenets of Reserve Design, prepared by the [NCCP] Scientific Review Panel appointed by the CDFG (1993)
- The Principles of Reserve Design and Adaptive Management Principles for the Southern Subregion prepared by the Science Advisors convened by the Nature Conservancy to assist in the preparation of the Southern NCCP (Science Advisors 1998)
- Southern Subregion databases

The seven basic Tenets of Reserve Design are listed below, followed by an analysis of whether or not the Preferred Alternative would preclude attainment of the tenets. The analysis first focuses on the Preferred Alternative alone, and then includes a discussion of the approved Ranch Plan (including the Settlement Agreement Plan) and cumulative impacts.

1. Conserve Target Species throughout the Planning Area

In the context of this tenet, "conserve" means that the species are well-distributed across their range. The NCCP/HCP planning guidelines identify three "target species" within the southern subregion. These species include the orange-throated whiptail, coastal cactus wren, and coastal California gnatcatcher. The target species serve as the conservation planning surrogates for identifying habitat areas that should be considered for inclusion in a reserve design.

Orange-Throated Whiptail [1]

The orange-throated whiptail occurs in washes and in open areas of sage scrub and chaparral with gravelly soils, often with rocks. The orange-throated whiptail prefers the well-drained friable soil on slopes with a southern exposure that are barren or only sparsely covered with vegetation. This species is known to occur throughout the SOCTIIP study area within suitable habitat and is considered abundant. Within the study area for the Ranch Plan (Ranch Mission Viejo [RMV]), whiptail occurrences were widely scattered, but there appear to be three clusters of occurrences totaling approximately 115 individuals. This species was recorded at approximately 126 locations within the SOCTIIP study area and at 174 locations within the study area of the southern subregion, although it is expected to occur throughout the region in suitable habitat.

The Preferred Alternative is anticipated to affect approximately seven known locations of the orange-throated whiptail. This represents approximately 5.6 percent of the recorded locations within the SOCTIIP study area. The portion of the Preferred Alternative that occurs within the southern subregion boundary would result in the loss of approximately five of these recorded locations, representing approximately 2.9 percent of the recorded locations. This loss would not preclude the ability of the southern subregion to conserve this species in the subregion because approximately 97.1 percent of the recorded occurrences within the southern subregion would remain upon implementation of the Preferred Alternative.

[1] Indirect and fragmentation impacts to the target species are discussed in the EIS/SEIR, including the Response to Comments. The EIS/SEIR and Response to Comments also identify the avoidance, minimization and compensation measures (e.g., Upper Chiquita Canyon Conservation Area) to reduce potential project impacts to the greatest extent practicable. The impact discussion for the target species focuses on the direct loss of recorded individuals relative to the known individuals within the SOCTIIP study area and the southern subregion. This level of analysis provides a clear and easily comparable assessment of conservation of species within the subregion if a corridor build alternative is implemented.

Coastal Cactus Wren

The coastal cactus wren inhabits coastal sage scrub and alluvial sage scrub habitats that have sufficient amounts of prickly pear cactus and/or cholla. This species is known to occur throughout the SOCTIIP study area within suitable habitat. A total of 89 occurrences of this species were recorded within the SOCTIIP study area. Within the southern subregion, this species was recorded at 1,410 locations.

The Preferred Alternative is anticipated to affect approximately five known locations of the coastal cactus wren. This represents approximately 5.6 percent of the recorded locations within the SOCTIIP study area. That portion of the Preferred Alternative within the southern subregion would result in the loss of approximately four of these locations, representing approximately 0.3 percent of the recorded locations within the subregion. This loss would not preclude the ability of the southern subregion to conserve this species in the subregion because approximately 99.7 percent of the recorded occurrence within the southern subregion would remain upon completion of an alignment such as the Preferred Alternative.

Coastal California Gnatcatcher

The coastal California gnatcatcher primarily occurs within coastal sage scrub, coastal sage scrub-chaparral mix, coastal sage scrub-grassland ecotone, and occasionally in riparian habitats. Gnatcatchers have been recorded at 140 occurrences within the SOCTIIP study area. Within the southern subregion, this species was recorded at 737 locations.

The Preferred Alternative is anticipated to affect approximately nine known locations of the coastal California gnatcatcher. This represents approximately 6.4 percent of the recorded locations within the SOCTIIP study area. That portion of the A7C-FEC-M Alternative within the southern subregion would result in the loss of approximately three of the locations within the southern subregion, representing approximately 0.4 percent of the recorded locations within the subregion. This loss would not preclude the ability of the southern subregion to conserve this species in the subregion because approximately 99.6 percent of the recorded occurrence within the southern subregion would remain upon completion of an alignment such as the Preferred Alternative.

Habitat Value

To partially mitigate impacts to the three target species, the TCA has established habitat preservation and proposed restoration activities in the Upper Chiquita Canyon Conservation Area. The Upper Chiquita Canyon Conservation Area consists of approximately 478.7 ha (1,182 ac) and was created by the TCA to mitigate biological impacts resulting from construction of the SOCTIIP. The Conservation Area was originally under substantial threat for development; however, the TCA was able to conserve this area that would have been lost or substantially degraded by development in advance of the anticipated impacts from the SOCTIIP. The gnatcatchers present in the Conservation Area represent the northern portion of the gnatcatcher population in a key location in the Chiquita Canyon, Western Gobernadora/ Chiquadora Ridge, and Wagon Wheel area (Draft NCCP/HCP Planning Guidelines, April 2003). These areas are "integral to the overall function of the reserve for this species because they provide linkages to other populations, including Camp Pendleton (Draft NCCP/HCP Planning Guidelines, April 2003)."

The 1993 NCCP Conservation Guidelines state that "subregional NCCPs will designate a system of reserves designed to provide for no net loss of habitat value from the present, taking into account management and enhancement. No net loss of habitat value means no net reduction in the ability of the subregion to maintain viable populations of target species over the long-term." According to the April 2003 Draft NCCP/HCP Planning Guidelines, the "combination of a property formulated Habitat Reserve

and a comprehensive Adaptive Management Program will allow the NCCP/HCP program to maintain net habitat value on a long-term basis for species ultimately receiving regulatory coverage under the program." The net habitat value equation takes into consideration habitat gains (through preservation and/or restoration) and loss (project impacts). The habitat gains by the proposed project (i.e., Upper Chiquita Conservation Area, and habitat restoration) have offset the habitat losses to result in a "no net loss of habitat values" finding consistent with the NCCP guidelines.

Relationship of the Preferred Alternative and the Approved Ranch Plan (Settlement Agreement Plan)

On November 9, 2004, the Orange County Board of Supervisors approved the Ranch Plan project. As part of that approval, the Board of Supervisors certified EIR No. 589 and adopted the California Environmental Quality Act (CEQA) Findings of Fact and a Statement of Overriding Considerations for the Alternative B-10 Modified plan of the Ranch Plan (hereafter referred to as the approved Ranch Plan). CEQA Findings of Fact and Statement of Overriding Considerations for the Ranch Plan, prepared by the County of Orange and approved by the Orange County Board of Supervisors on November 9, 2004). The Findings of Fact and Statement of Overriding Considerations state that "For the listed Planning Species (referred to as "target species" in the Tenet), Alternative B-10 Modified has medium to very high consistency with the NCCP/HCP Guidelines and provides medium to very high protection for the unlisted Planning Species." Therefore, based on the SOCTIIP analysis above and Findings of Fact and Statement of Overriding Considerations for the Alternative B-10 modified plan, these cumulative projects are not expected to prevent the reserve design from achieving its tenet of conserving "target species" throughout the southern subregion. As discussed below, the Ranch Plan now includes even more open space/habitat preservation than anticipated as part of the County approval.

Subsequent to County approval of the Ranch Plan, the County of Orange and RMV entered into a Settlement Agreement with the Endangered Habitats League, Natural Resources Defense Council, Sea and Sage Audubon Society, Laguna Greenbelt, Inc., and Sierra Club. The Settlement Agreement did not change the total number of approved dwelling units or non-residential development for the Ranch Plan, but did alter the location of development and increase the area devoted to open space. For example, under the Settlement Agreement, an additional 1800 acres of habitat will be preserved in the San Juan and San Juan Creek watersheds; Planning Areas 6 and 9 are limited to open space, Planning Area 7 is limited to open space, ranch and orchard operations, Planning Area 8 is limited to open space and a 500 acre development area, and modifications were made to the permitted use and development configurations in Planning Areas 2, 3 and 4.

The Preferred Alternative generally transects the center portion of the Ranch Plan, including Planning Areas 2 and 5 designated for development as well as areas designated as open space (Planning Area 10) in the approved Settlement Agreement Plan. The Preferred Alternative avoids impacts to large areas dedicated to resource open space in the eastern portion of the Ranch Plan site referred to as the "Eastern block." Overall, the alignment would impact approximately 156.58 acres designated for resource open space in the Settlement Agreement Plan. This occurs where the Preferred Alternative traverses the northern portion of Planning Area 2 within the area from Planning Area 2 over San Juan Creek into Planning Area 5. It should be noted that a portion of this impact from the Preferred Alternative represents the alignment on bridge structure which allows for continued wildlife connectivity.

The SOCTIIP mitigation for impacts includes previously set-aside open space areas, and additional mitigation could include land purchase for additional set-aside areas, revegetation, restoration, and other measures that would maintain open space and provide habitat value.

2. Larger Reserves Are Better

The alternatives for the SOCTIIP included several alignments that traversed the southern subregion of the NCCP. During the Collaborative process, adjustments to several of the alignments were made to avoid some of the biologically sensitive resources within the southern subregion. In addition, the Collaborative adjusted the alignments to avoid, to the greatest extent possible, the current natural open space areas in the eastern and/or central portion of the SOCTIIP study area. These adjustments to the SOCTIIP alternatives resulted in the identification of the Preferred Alternative, which substantially reduced the potential impacts to the size of an NCCP reserve design as compared to an alignment such as the FEC-M. The adjustments from the FEC-M to the Preferred Alternative resulted in the increase of 11 percent more open space areas to the east of the two alignments considered.

Even though the Preferred Alternative would result in fragmentation of the natural open space area in the southern subregion, there is a substantial amount of natural resources (over 30,000 acres of habitat in large blocks) to the east and west of the Preferred Alternative. In addition, mitigation measures, including replacement planting of habitat resources and wildlife crossings, will reduce the impacts of fragmentation. Therefore, these impacts will not prevent the reserve from functioning as intended.

Relationship of the Preferred Alternative and the Approved Ranch Plan (Settlement Agreement Plan)

The Findings of Fact and Statement of Overriding Considerations state that "The B-10 Modified Alternative is comprised of four major habitat blocks: the Eastern block (21,867 acres), the Upper Chiquita block (3,209 acres), the Lower Chiquita block (4,245 acres), and the Arroyo Trabuco block (1,832 acres). These habitat blocks combined total about 31,153 acres and account for about 71 percent of the B-10 Modified Open Space. The open space blocks, especially the Eastern Block are now larger due to the additional 1,800 acres of open space preserved through the Settlement Agreement. The Eastern block connects to substantial uninterrupted open space to the east in the Cleveland National Forest (460,000 acres) and Camp Pendleton (125,000 acres)." The Preferred Alternative essentially avoids the Eastern Block, with relatively limited impacts to the southwestern most edge of this block. Given the size and location of the open space areas within the southern subregion associated with, or in proximity to the approved Ranch Plan and the Settlement Agreement Plan and the Preferred Alternative, the reserve design tenet of creating larger reserves will still be met.

3. Keep Reserve Areas Close

The Preferred Alternative of the SOCTIIP does not have any effect on keeping reserve areas close. The NCCP tenet has specific recommendations regarding the distance between habitat blocks. The tenet states that habitat blocks "which support target species should be no more than one or two miles apart wherever practical." At its widest point in the southern subregion, the Preferred Alternative is approximately 292 feet wide (0.06 mile), which does not exceed the identified threshold.

Relationship of the Preferred Alternative and the Approved Ranch Plan

The Draft NCCP Guidelines identified important habitat linkages and wildlife corridors. The four large habitat blocks described above (the Eastern block [21,867 acres], the Upper Chiquita block [3,209 acres], the Lower Chiquita block [4,245 acres], and the Arroyo Trabuco block [1,832 acres]) are functionally interconnected though project design features associated with the approved Ranch Plan and through bridge and wildlife crossings incorporated into the design of the Preferred Alternative. Therefore, these combined projects are expected to support the tenet of keeping reserve areas close within the southern subregion planning area.

4. Keep Habitat Contiguous

The NCCP Guidelines state the goal of reserving blocks of habitat on the order of 1,000 or more acres. All of the four large habitat blocks described above (the Eastern block [21,867 acres], the Upper Chiquita block [3,209 acres], the Lower Chiquita block [4,245 acres], and the Arroyo Trabuco block [1,832 acres]) exceed this 1,000-acre goal. The Preferred Alternative is separate from the Arroyo Trabuco block and traverses the outer perimeter of the Upper Chiquita, Lower Chiquita, and Eastern blocks. Thus, habitat will continue to be contiguous, and minimum 1,000-acre blocks of habitat will be maintained, even with the alignment in place. Although the Preferred Alternative is expected to fragment habitat within the subregion, these impacts have been reduced and minimized to the greatest extent possible through project design modifications and habitat preservation and replacement. In addition, the alternative incorporates bridges and wildlife crossings into the design to minimize the effect of habitat fragmentation. The NCCP/HCP identifies several important linkages connecting these open space habitat block areas. Out of the 20 habitat linkages and wildlife movement areas identified from field surveys in the NCCP/HCP planning area, 15 are applicable to the wildlife corridor existing conditions in the SOCTIIP biological study area. Bridge, arch culverts, and box culverts that provide for wildlife undercrossings of the Preferred Alternative have been incorporated into the project design at locations that are consistent with the linkages identified in the NCCP/HCP guidelines.

Relationship of the Preferred Alternative and the Approved Ranch Plan (Settlement Agreement Plan)

The Findings of Fact and Statement of Overriding Considerations state that "the vast majority of the four habitat blocks that would be protected in the B-10 Modified Open Space are comprised of the five major vegetation communities: coastal sage scrub, chaparral, grassland, woodland and forest, and riparian, although the relative proportions of the vegetation communities vary among the blocks." The approved Ranch Plan results in "relatively little internal habitat fragmentation" of these four habitat blocks according to the Findings of Fact and Statement of Overriding Considerations. Therefore, these combined projects support the tenet of keeping habitat contiguous within the southern subregion planning area.

5. Link Reserves with Corridors

In terms of linking reserves with corridors, the Preferred Alternative includes wildlife bridges and culverts. As detailed in mitigation measure WV-15 in the SOCTIIP EIS/SEIR, the location of the proposed wildlife bridges and culverts identified in the NES will provide adequate travel capabilities, contain adequate vegetation cover, have adequate daylight, and have appropriate fencing to encourage animals to use these underpasses. As discussed above, the bridges, arch culverts, and box culverts that provide for wildlife undercrossings along the Preferred Alternative have been incorporated into the project design at locations that are consistent with the linkages identified in the NCCP/HCP guidelines. The Preferred Alternative is consistent with this tenet.

Relationship of the Preferred Alternative and the Approved Ranch Plan (Settlement Agreement Plan)

As discussed previously, the four large habitat blocks are functionally interconnected though project design features associated with the approved Ranch Plan and through bridge and wildlife crossings incorporated into the design of the Preferred Alternative. Therefore, these combined projects are expected to support the tenet of linking reserves with corridors in the southern subregion planning area.

6. Reserves should be Biologically Diverse

The study area for the SOCTIIP includes a variety of native plant communities, including scrub, grassland, chaparral, woodland, and riparian areas. For the majority of the plant communities that are the most plentiful within the SOCTIIP study area, the impacts of the Preferred Alternative would represent a range of 4 to 16 percent of that community within the SOCTIIP study area. At the same time, the project includes mitigation commitments to a minimum 1:1 ratio of replacement habitat. One of the communities that occurs frequently within the study area and had the highest percentage (16 percent) of relative impacts within the study area was the woodland community. The woodland impacts are the result of the modifications to the alignment through the Collaborative process to avoid areas such as coastal sage scrub (that support the federally threatened coastal California gnatcatcher) and grassland areas (that supports the federally threatened/state endangered thread-leaved brodiaea). The combination of early mitigation through the Upper Chiquita Preserve and replacement of other habitat as required by the mitigation measures will maintain and return biological diversity to the area. Therefore, the loss of the native communities due to the Preferred Alternative would not preclude maintaining biologically diverse reserves and does not prevent this tenet from being achieved.

Relationship of the Preferred Alternative and the Approved Ranch Plan (Settlement Agreement Plan)

According to the Findings of Fact and Statement of Overriding Considerations for the approved Ranch Plan, the "B-10 Modified protects the large majority of the major vegetation communities. Protection ranges from a low of 67 percent for grassland to a high of 84 percent for coastal sage scrub and chaparral. Other than grassland, the next lowest overall conservation percentage of the major vegetation communities is 83 percent for woodland and forest and riparian." These percentages protected do not reflect the Ranch Plan Settlement Agreement, which increases the amount of habitat preserved. Therefore, the combined projects are expected to provide for an adequate number and type of plant communities/wildlife habitat and would not disproportionately impact any plant community so that the southern subregion reserves have the ability to be biologically diverse.

7. Protect Reserves from Encroachment

Four large habitat blocks were described above in the second tenet (larger reserves are better). The Preferred Alternative does not encroach on the Arroyo Trabuco block because the alignment does not occur within this habitat block area. The Preferred Alternative would slightly reduce the size of the Upper Chiquita block as the alignment connects to the existing FTC-North immediately south of Oso Parkway and travels south to where it leaves that habitat block and enters Planning Area 2 of the approved Ranch Plan. The Preferred Alternative crosses the Lower Chiquita block area where the alignments exits Planning Area 2 to the south and crosses San Juan Creek by a bridge. The Eastern block will be slightly reduced on the southwestern-most edge, within the western limits of The Donna O'Neil Conservancy. Some of the habitat values lost through direct impacts have already been mitigated through the Upper Chiquita Conservation Bank. The remaining habitat values lost will be replaced through preservation or restoration. Indirect effects of the corridor being located adjacent to the Upper Chiquita block, Lower Chiquita block, and Eastern block from the Preferred Alternative are expected to be minimal due to project design features and mitigation measures. These features and measures limit the potential for indirect affects such as invasive plant species (mitigation measure WV-7), wildlife/road collisions (mitigation measure WV-19), and stormwater runoff (erosion, siltation, and water quality are addressed by the RMP, which provides a design and facilities to maintain preproject runoff velocities).

In summary, although the final southern subregion NCCP/HCP reserve has not been established, the analysis above documents the following conditions with the Preferred Alternative: (1) large habitat blocks

are maintained, (2) there will be no net loss of habitat values , and (3) indirect impacts will be prevented through mitigation measures

Relationship of the A7C-FEC-M/Preferred Alternative and the Approved Ranch Plan

The approved Ranch Plan circulation system was addressed during the sub-basin consistency analysis for the EIR to document compliance with the Draft NCCP Guidelines General Policy 4 (roads and infrastructure to be located outside the Open Space to the maximum extent feasible). The Ranch Plan includes provisions for an extension of the SR-241 (the Preferred Alternative), or for an arterial roadway system in the event that the SR-241 is not extended. Thus, it was known and acknowledged in the Ranch Plan process that an SR-241 extension might traverse planned open space through the Ranch Plan site. In addition, the Settlement Agreement allows infrastructure uses within open space areas. The approved Ranch Plan and the compliance with Draft NCCP Guidelines, General Policy 5 requirements would provide protection against long-term, indirect effects/encroachment (i.e., fuel management zones, exotic species, harmful chemicals, lighting, human and pet access). The SOCTIIP Preferred Alternative includes several mitigation measures to address these issues. In addition to the measures listed above under item number 7, see specifically the following measures: WV 20 and AS 4 (lighting), WV 27 and 29 (exotic species), and PS 2 through PS-8 (fire protection). Cumulatively, these projects have addressed the potentially adverse affects of encroachment, preventing them through project design or mitigating so that these projects do not preclude protection of the reserve areas once they are established.

SAMP/MSAA Planning Principals

The participants in the SAMP/MSAA process have also developed tenets and principles for the identification and evaluation of alternatives. The ACOE and CDFG set forth eight SAMP/MSAA tenets characterized as overall program goals intended to facilitate the identification of alternatives that meet the project purpose and need. As part of the NCCP/SAMP Working Group, the participants also jointly collaborated on a set of Watershed and Sub-basin Planning Principles. The Watershed Planning Principles are intended to function in a similar manner as the NCCP Science Advisors reserve design principles. Reserve Design Tenet 7 was added by the Science Advisors in recognition of the role that hydrologic and sediment processes play in shaping the landscapes of the planning area. This tenet helps to integrate the NCCP/HCP and SAMP/MSAA processes and serves as a link between this set of guidelines and the tenets and principles of the SAMP/MSAA.

SAMP/MSAA Planning Principles are listed below, followed by a discussion of the manner in which the Preferred Alternative is consistent with that principle:

1. No net loss of acreage and functions of waters of the United States

Update for Preferred Alternative. The A7C-FEC-M Alignment permanently impacts 6.78 acres of WoUS, of which 0.93 acres consist of jurisdictional wetland. Temporary impacts total 11.08 acres of WoUS, of which 8.51 acres consist of jurisdictional wetland. To ensure that no net loss of acreage of WoUS occurs, at least 6.78 acres of WoUS will be created, including 0.93 acres of wetland and all areas of temporary impacts will be restored to their previous function. The habitat creation will be designed to provide a higher function than that lost. No net loss of wetland/riparian function will be demonstrated by use of the Corps HGM approach or similar methodology for both Corps and CDFG jurisdictional impacts.

2. Maintain/restore hydrologic, water quality and habitat integrity of waters of the U.S.

Various corridor design elements function to minimize impacts to hydrologic, water quality and habitat integrity as indicated by the very low impact scores in the June 2003 Analysis of Potential Impacts.[2] According to the SAMP,

a. Hydrologic integrity is characterized by stream discharge frequency, magnitude and temporal distribution and linked surface and subsurface interaction with the floodplain that has historically characterized riparian ecosystems in the region.

b. Water quality integrity is characterized by the range of nutrient, pesticide, hydrocarbon and sediment loadings that have historically characterized riparian ecosystems in the region.

c. Habitat integrity is characterized the quality and quantity of habitat essential to support and maintain a balanced, integrated, adaptive biological system having the full range of characteristics, processes and organisms at the site-specific, landscape and watershed scales that historically characterized riparian ecosystems in the region.

Impacts to the above characteristics have been avoided or minimized by utilizing a wide suite of strategies. For example:

a. Grading limits were refined to reduce cut and fill by following natural contours and to avoid sensitive resources, including the Tesoro Wetlands area, by shifting the alignment.

b. Bridge structures are proposed for all major high-order drainages exhibiting the most diverse and expansive riparian habitat.

c. Bridge design, such as support placement and shape, minimizes impacts to both the habitat and hydrologic character of each drainage.

d. Hydrologic connectivity will be maintained through the construction of cross-culverts and bridges in almost all waters being traversed.

e. Where they exist, historic floodplain connections and riparian corridors will be maintained in the unaltered upstream and downstream portions of drainages to be impacted. In some cases channels have already been cut down and do not exhibit an existing floodplain connection.

f. Stream discharge, including velocity and volume, will be maintained at pre-construction values to the maximum extent practicable to avoid changes in deposition and scour. Project Design Features (PDF) and Best Management Practices (BMP) being implemented for this purpose include, but are not limited to:

   1) Construction of Extended Detention Basins (EDB), which will serve to recharge groundwater through percolation and provide storm water treatment as well as to permit normal storm flows to be transmitted through the unimpacted downstream reaches of the local drainages.

   2) Minimizing impermeable surfaces to the maximum extend practicable.

[2] Smith, R. D. 2003. Potential Impacts of Alternative Transportation Corridors on Waters of the United States and Riparian Ecosystems for the Southern Orange County Transportation Infrastructure Improvement Project. U.S. Army Engineer Research and Development Center, Waterways Experiment Station, Vicksburg, MS.

3) Culverts will be sized in such a way to permit unobstructed flows in all but the very large-magnitude storm events. Some shading at bridges may affect habitat located immediately under the bridge, reducing vegetation density and possibly aquatic temperatures. These effects are very localized and would impact only those areas located immediately under the bridge.

g. Water quality will be maintained through treatment by a variety of mechanisms, including EDB and biofiltration swales, as well as implementation of appropriate construction BMP.

h. Riparian corridors are avoided to the maximum extent practicable and when necessary, connectivity within riparian corridors will be maintained by careful design of culverts and bridges.

Restoration efforts will target riparian reaches and watersheds where the greatest increase in integrity units can be achieved, such as Upper Canada Chiquita. In addition, wetland/riparian creation areas will also be located in such a manner as to provide the greatest available increase in watershed integrity.

3. Protect headwaters areas

Headwaters means non-tidal rivers, streams, and their lakes and impoundments, including adjacent wetlands, that are part of a surface tributary system to an interstate or navigable WoUS upstream of the point on the river or stream at which the average annual flow is less than five cubic feet per second. For streams that are dry for long periods of the year, the Corps may establish the point where headwaters begin as that point on the stream where a flow of five cubic feet per second is equaled or exceeded 50 percent of the time. As described above, this project has been designed to avoid impact to waters, including headwater areas, to the maximum extent practicable.

4. Maintain/protect/restore diverse and contiguous riparian corridors

As described above, the refinement process coupled with the construction of bridges and culverts that are designed to promote wildlife movement have provided for the maintenance and protection of contiguous riparian corridors to the maximum extent practicable. In addition, restoration will target enhancement of riparian corridors

5. Maintain and/or restore floodplain connection

Also as described above, where they exist, floodplain connections and riparian corridors are maintained in the unaltered upstream and downstream portions of drainages to be impacted.

6. Maintain and/or restore sediment sources and transport equilibrium

Also as described above, the majority of drainages being impacted will retain hydrologic connectivity between upstream and downstream reaches as a result of the construction of bridges or cross-culverts. In addition, the amount of impermeable surface is being minimized to the maximum extend practicable. Since the actual footprint in which the land use is being converted to non-erodable surfaces is minimal within each watershed sub-basin, no significant reduction in sediment sources is expected.

The Draft EIS/SEIR examined the issue of sediment, and two additional analyses were prepared and included in the Response to Comments. The sediment budget analysis concluded that the supply of bed material load from San Mateo Creek will be virtually unchanged in the after project condition with the anticipated storm water controls. See Attachments 8 (Sediment Transport Study) and 11 (Skelly

Engineering Review of Sediment Transport Study) of the Response to Comments for further details on this issue.

7. Maintain adequate buffer for the protected riparian corridors

The linear nature of the project generally results in crossings that are somewhat perpendicular to the riparian corridors within the vicinity rather than being parallel. This results in little need for riparian buffers. The A7C-FEC-M/Preferred Alternative avoids impacts to high-order high-functioning drainages such as Cristianitos and Gobernadora Creeks. In addition, impacts to other high-functioning drainages such as San Juan Creek, San Mateo Creek, and San Onofre Creek have been reduced to the maximum extent practicable through the proposed construction of bridges spanning the creeks.

8. Protect riparian areas and associated habitats supporting state/federally listed species and associated critical habitat

Although southwestern willow flycatcher (SWF) (FE/SE), San Diego fairy shrimp (FE), and Riverside fairy shrimp (FE) occur within the study area, the A7C-FEC-M/Preferred Alternative avoids direct impacts to these species. Habitat impacts are minimized as described below.

<u>San Diego Fairy Shrimp Critical Habitat</u>

Although the Preferred Alternative intersects 1.68 acres of Unit 2A of the 2000 Final Rule designating San Diego fairy shrimp critical habitat, the portion of the unit to be impacted is immediately adjacent to the existing I-5, which does not exhibit the topography or hydrology necessary to support fairy shrimp within the proposed impact boundaries. The Preferred Alternative will not impact any San Diego Fairy Shrimp critical habitat based on the 2003 Proposed Rule.

<u>Riverside Fairy Shrimp Critical Habitat</u>

Although the Preferred Alternative intersects 194.73 acres of 2004 Riverside fairy shrimp critical habitat located within units G and H, potential habitat loss is much less. Unit G falls within an area permitted for disturbance by existing sand mining operators. In addition, the majority of the habitat within the alignment and extending between the alignment and the eastern edge of the critical habitat unit is generally quite rugged, with the flatter areas near the bottom being characterized by well-drained alluvial soils. The non-impacted relatively flat terraces to the west and upslope of the alignment exhibit the best potential for supporting habitat for the fairy shrimp in the future. Impacts to unit H include the loss of two unoccupied seasonal pools that provide potential habitat for fairy shrimp; however, the alignment avoids one occupied and one unoccupied pool. In addition, as with Unit G, the corridor impacts the steeper terrain, while leaving the relatively flat terraces to the west and upslope of the alignment available for supporting fairy shrimp in the future.

For both Riverside and San Diego Fairy shrimp critical habitat, adverse modification of primary constituent elements includes:

- Any activity that results in discharge of dredged or fill material, excavation, or mechanized land clearing of ephemeral and/or vernal pool basins;
- Any activity that alters the watershed, water quality, or quantity to an extent that water quality becomes unsuitable to support San Diego fairy shrimp, or any activity that significantly affects the natural hydrologic function of the vernal pool system; and

- Activities that could lead to the introduction of exotic species into occupied or potentially occupied San Diego fairy shrimp habitat.

Seasonal pools shall be replaced at a minimum of a 1:1 ratio within dedicated open space areas to ensure no net loss of potential fairy shrimp habitat. In both critical habitat units, project impacts will occur down slope of the preserved pools and therefore, in combination with PDF and BMP, should have no impact on water quality or quantity within the existing pools. Mitigation measures during construction including exclusionary fencing (Mitigation Measure TE-8), and the presence of a biological monitor will minimize the potential for introducing exotic species during construction.

Thread-leaved Brodiaea

Portions of three populations of thread-leaved Brodiaea (FT/State Endangered [SE]) located within San Onofre State Beach (leased from Camp Pendleton) fall within the grading limits. Approximately 23 of the 1,076 individuals mapped in this subpopulation will be impacted and generally consist of the margins of the population rather than bisecting it. These impacts total only 2 percent of the subpopulation and 0.5 percent of the population mapped within the entire study area. These individuals will be translocated (see Mitigation Measure TE 7 for further details).

Tidewater Goby and Critical Habitat

The project has the potential to impact tidewater goby (FE) at crossings on San Mateo and San Onofre Creeks. The project intersects 7.73 acres of tidewater goby critical habitat within San Onofre Creek and 22.94 acres within San Mateo Creek; however, as a result of bridging, the total permanent loss of habitat will be limited to the location of bridge pilings; as described above, changes in hydrology and water quality should be minimal as a result of PDF and BMP.

Southern Steelhead Trout

The project also has the potential to impact southern steelhead trout (FE) at crossings on San Mateo and San Juan Creeks. As a result of bridging, the total permanent loss of habitat will be limited to the location of bridge pilings; as described above, changes in hydrology and water quality should be minimal as a result of PDF and BMP.

Arroyo Toad and Critical Habitat

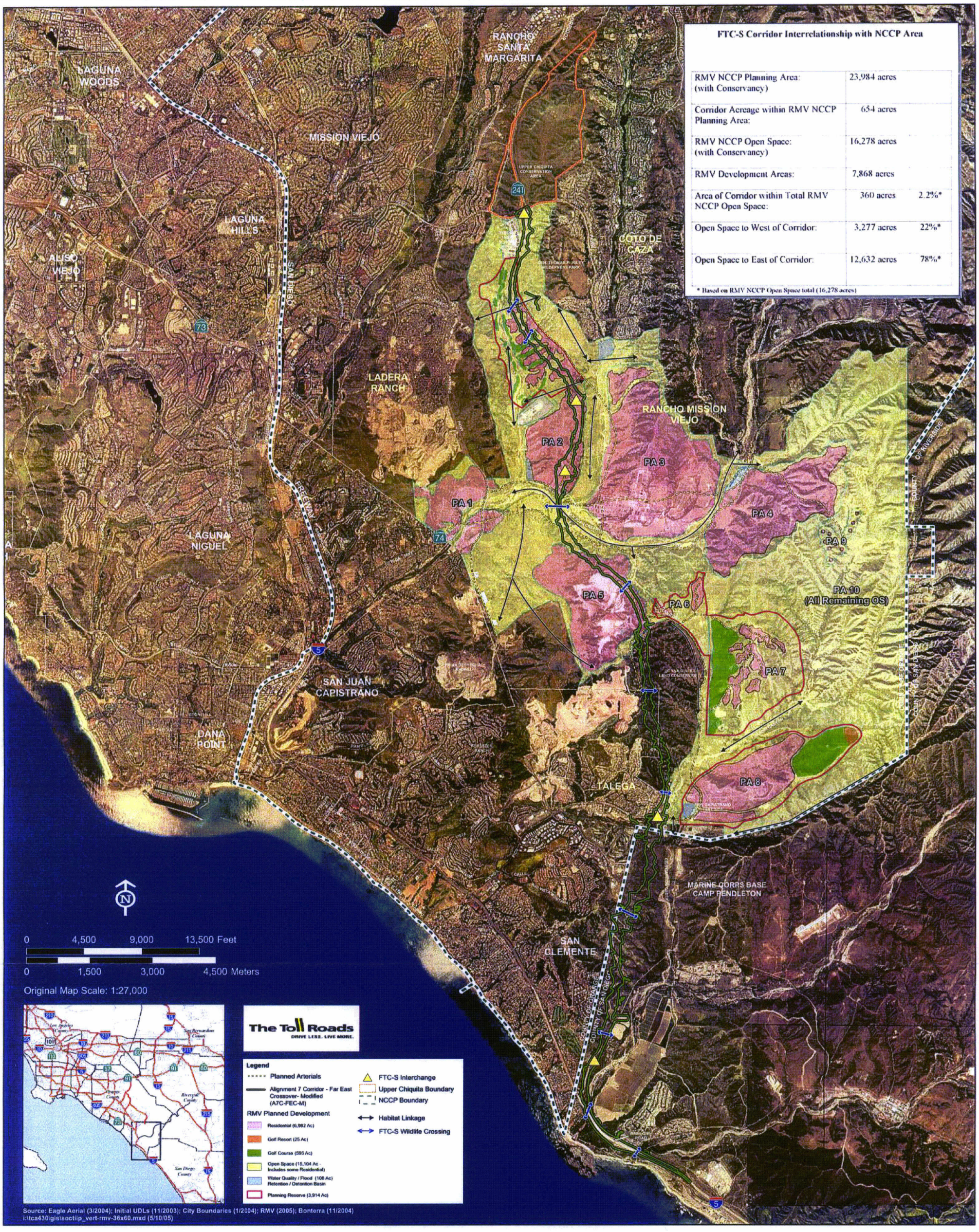
Although project construction is expected to result in minimal direct impacts to the arroyo toad (FE), approximately 227.24 acres of critical habitat is being impacted, including areas within San Mateo, San Juan, Cristianitos, and San Onofre Creeks. The permanent loss of breeding habitat has been minimized by bridging, which limits permanent losses to pier locations, and by refinement of the alignment, which now avoids impacts to Gabino and Cristianitos Creeks. The refined corridor alignment improves movement corridors by reducing the number of crossings within critical habitat. The remainder of the impacts occur in upland areas where toads forage and burrow. Ultimately, significant quantities of upland habitat will remain and the corridor design permits the movement of toads between available upland areas. Also see mitigation measures TE-10 to TE-17 which relate to the arroyo toad.

Least Bell's Vireo and Critical Habitat

This alignment avoids the densest populations of least Bell's vireo (LBV) (FE/SE) within Canada Gobernadora and San Juan Creek, although it does temporarily impact occupied habitat at San Mateo Creek and is likely to have indirect impacts in that location. The construction or expansion of span

bridges will minimize permanent loss of LBV habitat in both San Mateo and San Juan Creeks and, since LBV currently occupy similar habitat beneath the I-5 bridge at San Mateo Creek, it is not expected that project construction will cause a permanent reduction in populations at these locations. Also, as described above, all PDF and BMP that contribute to the maintenance of watershed integrity will contribute to the maintenance of quality LBV habitat. This project does not impact LBV critical habitat.

South Orange County Transportation Infrastructure Improvement Project (SOCTIIP)
NCCP Reserve Compatibility



FTC-S Corridor Interrelationship with NCCP Area

RMV NCCP Planning Area: (with Conservancy)	23,984 acres	
Corridor Acreage within RMV NCCP Planning Area:	654 acres	
RMV NCCP Open Space: (with Conservancy)	16,278 acres	
RMV Development Areas:	7,868 acres	
Area of Corridor within Total RMV NCCP Open Space:	360 acres	2.2%*
Open Space to West of Corridor:	3,277 acres	22%*
Open Space to East of Corridor:	12,632 acres	78%*

* Based on RMV NCCP Open Space total (16,278 acres)

Attachment 11

Skelly Engineering Review of Sediment Transport Study

GeoSoils Inc.

SKELLY ENGINEERING

October 5, 2004

Mr. Scott Taylor
RBF Consulting
14725 Alton Parkway
Irvine, California CA 92618

SUBJECT: South Orange County Transportation Infrastructure Improvement Project Impacts to Coastal Processes in Vicinity of San Mateo Creek.

Dear Mr. Taylor:

At your request we are pleased to provide this additional quantification and discussion of the potential impacts to coastal processes in the vicinity of San Mateo Creek as a result of the South Orange County Transportation Infrastructure Improvement Project (SOCTIIP).

SURFING RESOURCES

There are two world class surfing sites at the mouth of the San Mateo Creek, located at what is geologically described as the delta of the creek. There are other good surfing resources in the area. The delta is a large shoreline bulge which is primarily formed by large cobbles and small boulders. The delta is a very robust geologic feature formed over centuries from bed load sediment transported by flow from the San Mateo Creek. Our analysis of historical aerial photographs (Skelly Engineering, 2000) shows that the delta is a very dynamic system, including shoreline position changes of about 700 feet over a one year time period (1969 to1970). Figure 1 shows the positions of the shoreline as determined from the historical aerial photographs over a 67 year period. The dramatic changes in the shoreline position are a result of longshore transport rates on the order of several hundred thousand cubic yards of sand per year. The movement of the shoreline landward is due to the along shore transport of sand size material. The large cobble and bolder material is relatively immobile as compared to the sand. This is why the surf spots on the delta feature are robust and not particularly sensitive to changes in the amount of beach sands or shoreline position. The delta is a section of shoreline where wave energy is focused, hence the surf spots. Due to this concentration of wave energy on the delta the potential for sediment transport is greater than at the adjacent shorelines. When sediment is delivered to the delta via up coast longshore transport or from the infrequent discharge of the creek, the sand size material is quickly moved along by waves.

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Shoreline Movement - Trestles

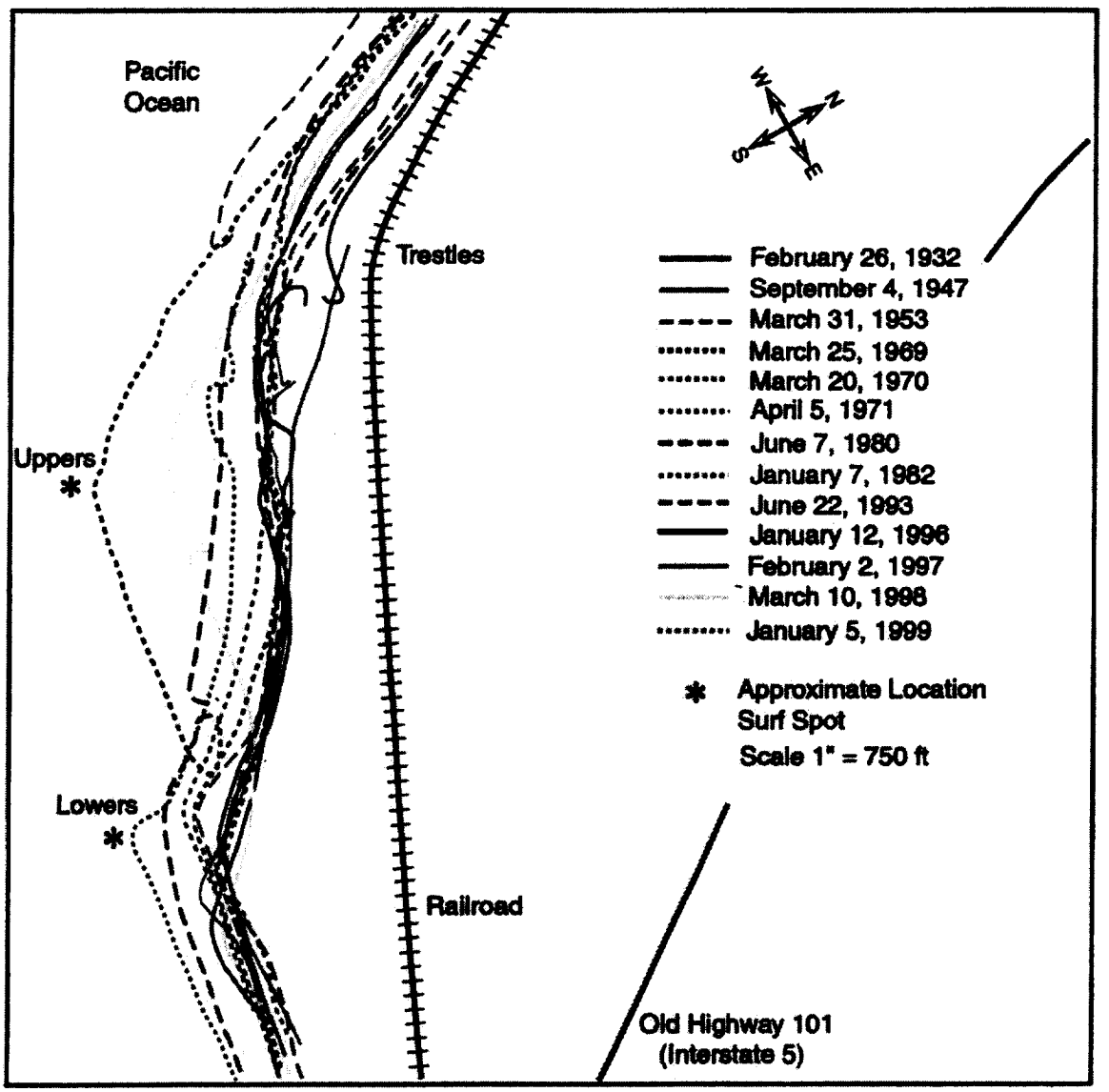

Figure 1. Shoreline positions in the vicinity of San Mateo Creek from 1932 to 1999.

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SEDIMENT BUDGET

A sediment budget is an application of the principal of conservation of mass to littoral sediments. The sediment budget makes quantitative assessment of the sources, transport rates, and sinks of sediment (Komar 1996). Figure 2, taken from Komar 1996, is a schematic of the principal components commonly involved in the formulation of a sediment budget. The credits and debits within the budget are used to determine if the shoreline will erode or accrete. A sediment budget is a tool often used to determine the impact of environmental changes on the shoreline. Sediment budgets for the San Mateo Creek area have been performed by the US Army Corps of Engineers in 1991 (USACOELAD 1991). A hindecasted (evaluation of the historical record) sediment budget is often "adjusted" to match the observed rate of erosion or accretion. Komar states; "It has been shown that it is often difficult, or even impossible, to make quantitative assessments of all the credits and debits within the budget, and to achieve a balance that is in agreement with the observed rate of erosion or accretion." Appendix I is a summary of the Corps budget of sediment for the Oceanside littoral Cell. The Oceanside littoral Cell extends from Dana Point to La Jolla and includes the San Mateo Creek area.

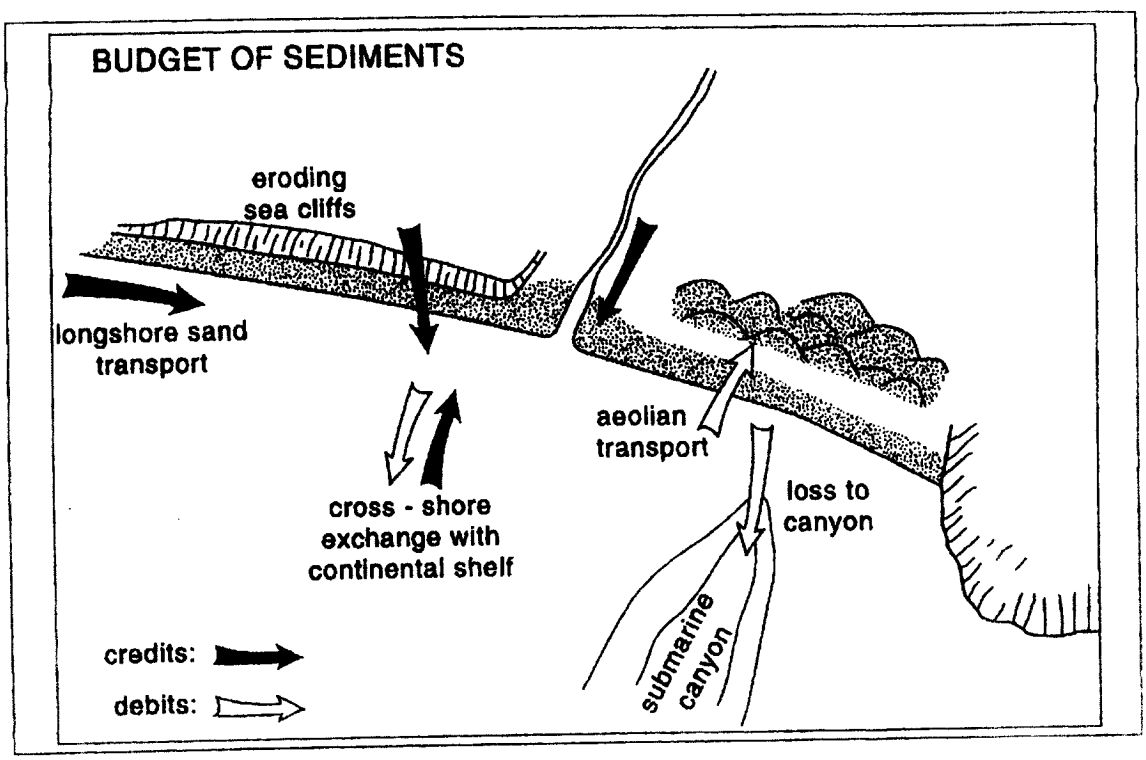

Figure 2. Schematic of the principal components for a sediment budget.

A review of the budgets in Appendix I reveals several interesting observations;

- There are budgets for three different time periods. These budgets vary greatly over the different periods. This illustrates that under differing watershed conditions and climatic conditions how greatly the elements of the budget vary.

- The amount of input from rivers near San Mateo Creek varies from 270,000 cubic yards per year to 0 cubic yards per year. The 0 cubic yards per year is most likely an ™adjustmentš to get the budget to ™balanceš, or more correctly to account for the observed erosion of accretion.

- The longshore transport rates vary from 70,000 cubic yards per year to 270,000 cubic yards per year.

- In general the budget in the San Mateo Creek area is balanced, meaning the shoreline is stable, or positive, meaning shoreline accretion.

The proposed SOCTIIP will only impact one component of the sediment budget. That is the input of sediment to the budget from river sources. The Corps report provides estimates of sediment discharge rate from San Mateo Creek. The rates vary from 2,240 cubic yards per year to 32,000 cubic yards per year (USACOELAD 1991 Table 6-1). RBF 2004 provides an estimate of the change in sediment transport capacity as a result of the SOCTIIP and the commutative effect of the project and the Rancho Mission Viejo project. In general, there was very little change in the sediment transport rates for the SOCTIIP and for the cumulative projects.

The principal of a sediment budget is useful in determining the significance of any impacts the SOCTIIP has on the shoreline and surfing resources. For a conservative analysis, assume that the average annual discharge of the San Mateo Creek be 32,000 cubic yards (USACOE 1991 Table 6-1) and that the project decreases the sediment transport by 2% (RBF, 2004). This implies that over a one year period ~640 cubic yards of material may not reach the shoreline. This volume of material is very small when compared to the longshore transport rates on the order of 100,000 cubic yards per year. The quantity of potential change in the sediment delivery is orders of magnitude smaller than the transport capacity at the shoreline. The change is clearly not significant.

CONCLUSIONS

The shoreline and delta fronting San Mateo Creek are the location of world class surfing breaks. The coastal processes, waves and sediment transport, at the delta and shoreline have varied greatly in the past and will vary greatly in the future. The surf spots are very robust features that have been subject to tremendous changes in the position of the shoreline, the amount of sediment delivered, and the wave climate. Wave energy is focused at the surf spots and the potential sediment transport rates at the surf spots is high as compared to the adjacent shorelines. The surfing resources in the vicinity of San Mateo Creek are not sensitive to very small changes in littoral sediments delivered either alongshore or from the creek. The SOCTIIP will have an insignificant impact on the transport of sediment to the shoreline. The SOCTIIP will have no measurable impact on surfing resources.

If you have any additional questions or require additional information please contact me at the number below.

Sincerely,

REGISTERED PROFESSIONAL ENGINEER
DAVID W. SKELLY
No. C 47857
Exp. 12/31/05
CIVIL
STATE OF CALIFORNIA

David W. Skelly MS,PE
RCE #47857

REFERENCES

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RBF Consulting, 2004, ™Sediment Continuity Analysis Lower San Mateo Creek, South Orange County Transportation Infrastructure Improvements Project,š prepared for Foothill/Eastern Transportation Corridor Agency Environmental and Planning, September 2004

Skelly Engineering, 2000, ™Final Report: Impact of Foothill Transportation Corridor-South on Surfing Resources,š letter report dated April 3, 2000

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SKELLY ENGINEERING

APPENDIX I

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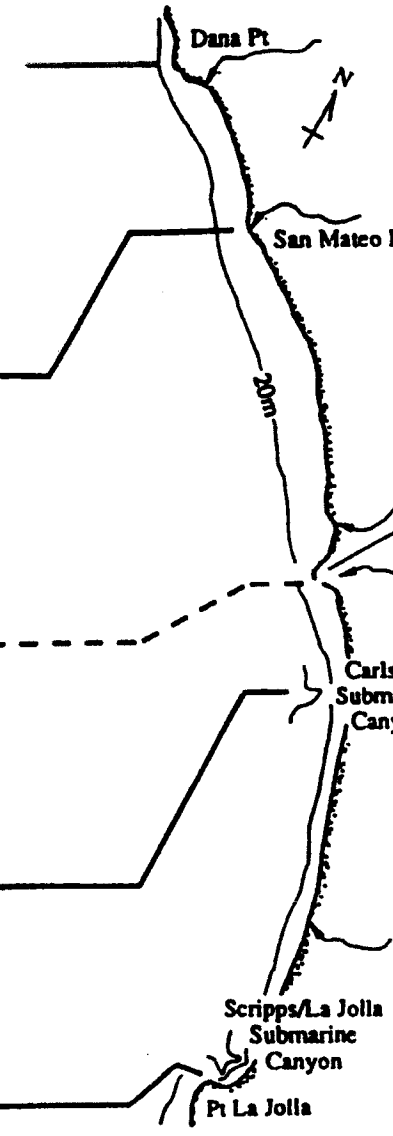
Figure 5
Budget of Sediment
Oceanside Littoral Cell

Input or Output		Natural Conditions ca.1900-1938 Input	Natural Conditions ca.1900-1938 Output	Uniform NW Wave Climate ca.1960-1978 Input	Uniform NW Wave Climate ca.1960-1978 Output	Variable W Wave Climate ca.1983-1990 Input	Variable W Wave Climate ca.1983-1990 Output
Q_l+Q_n	Longshore	0	190	0	190	0	50
Q_r	River	85	0	60	0	60	0
Q_b, Q_o	Bluff, Offshore	170	60	120	60	0	0
Q_a	Nourish	0	0	120	0	0	0
$\partial V'/\partial t$ (10^3 yd^3/yr)		+5		+50		+10	
$\partial X/\partial t$ (ft/yr)		≈ balance		0.7 accretion		≈ balance	
Q_l+Q_n		190	270	190	270	60	70
Q_r		270	0	25	0	0	0
Q_b, Q_o		520	640	370	460	180	0
Q_a		0	0	65	0	30	0
$\partial V'/\partial t$ (10^3 yd^3/yr)				-80		+200	
$\partial X/\partial t$ (ft/yr)				0.6 erosion		1.4 accretion	
				— — — HARBOR EFFECTS — — —			
$Q_{ld}+Q_{nd}$	Deflection			0	80	0	20
Q_l+Q_n				270	270	70	70
Q_r				40	0	0	0
Q_b, Q_o				160	180	80	0
Q_a				100	0	0	0
$\partial V'/\partial t$ (10^3 yd^3/yr)		+70		+40		+60	
$\partial X/\partial t$ (ft/yr)		0.3 accretion		0.7 accretion		1.0 accretion	
Q_l+Q_n		270	0	270	0	70	0
Q_r		65	0	5	0	0	0
Q_b, Q_o		200	240	200	240	100	0
Q_a, Q_s	Nour., Sub Canyon	0	290	100	290	0	70
$\partial V'/\partial t$ (10^3 yd^3/yr)		+5		+45		+100	
$\partial X/\partial t$ (ft/yr)		≈ balance		0.3 accretion		0.6 accretion	
Episodic Beach Denudation:			1939 Tropical Storm		1982/83 Cluster Storms		



SUBCELL	km	mi
NORTH	14	8.5
CENTRAL	27	16.5
	11	7
SOUTH	32	20
	84	52

Table 3
Symbols Used in Budget of Sediment Analyses

Variables

q = volume transport rate of sandy material, $m^3/m\text{-}yr$ ($yd^3/yd\text{-}yr$)

$Z = q'$ = height of the shoreline flux-surface (m) and volume-equivalent factor for shoreline change, m^3/m (yd^3/yd)

$Q = q' \cdot l$ = total sand transport rate into or out of cell, m^3/yr (yd^3/yr)

l = length of control cell

General Subscripts

1 = flux into cell (+)

2 = flux out of cell (-)

a = artificial nourishment, bypassing, dredging, etc. (+/-)

b = blufflands erosion (+); includes seacliff, gullies, coastal terrace, slumps, etc. as distinct from rivers

f = shoreline flux-volume into control cell (+) by shoreline erosion, or deposition of material out of cell (-) by shoreline accretion, in accordance with movement of shoreline flux-surface, $\partial X/\partial t \cdot Z \cdot l = Q_f$

i = inlet material, i.e., carried in or out by inlet flow (+/-)

l = longshore transport of sand in and near the surfzone, versus *n*

n = nearshore transport along the coast, outside the surfzone

o = on/offshore transport at the base of the shorerise (+/-)

ow = overwash (-)

r = river yield to the coast (+)

s = lost into submarine canyons (-)

w = windblown sand (-)

Harbor Effects Subscripts

ab = artificial bypassing (+)

at = bypass material retrapped (-)

ld = longshore deflected to deep water (-)

lt = longshore trapped in harbor (-)

nd = nearshore deflected to deep water (-)

Attachment 12

Wetlands Delineation Technical Report, GLA

SCANNED

JURISDICTIONAL DETERMINATION AND WETLANDS DELINEATION TECHNICAL ASSESSMENT

FOR

IMPACTS ASSOCIATED WITH THE SOUTH ORANGE COUNTY TRANSPORTATION INFRASTRUCTURE IMPROVEMENT PROJECT

CENTRAL CORRIDOR - COMPLETE
CENTRAL CORRIDOR – AVENIDA LA PATA VARIATION
ALIGNMENT 7 CORRIDOR – AVENIDA LA PATA VARIATION
ALIGNMENT 7 CORRIDOR - FAR EAST MODIFIED
FAR EAST CORRIDOR – WEST and
FAR EAST CORRIDOR - MODIFIED

August 9, 2004
[Revised April 6, 2005]

Prepared for:

Foothill/Eastern Transportation Corridor Agency
Contacts: Macie Cleary-Milan
125 Pacifica, Suite 100
Irvine California 92618-3304
Telephone: (949) 754-3481

Prepared by:

Glenn Lukos Associates, Inc.
29 Orchard
Lake Forest, CA 92630
Contact: Ingrid Chlup and Tom Mullen
Telephone: (949) 837-0404

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PREFACE

This Wetlands Delineation Technical Report describes the location and extent of aquatic features located within the disturbance limits of the alternatives considered in the Environmental Impact Statement/Subsequent Environmental Impact Report for the South Orange County Transportation Infrastructure Improvement Project (SOCTIIP). This evaluation describes details of wetlands and other waters with respect to the regulatory authority of the United States Army Corps of Engineers, the California Department of Fish and Game, and the California Coastal Commission. Isolated waters for which jurisdiction have not been determined are also described. This evaluation was conducted for the Central Corridor – Complete, the Central Corridor – Avenida La Pata Variation, the Alignment 7 Corridor – Avenida La Pata Variation, the Alignment 7 Corridor – Far East Crossover - Modified, the Far East Corridor – West and the Far East Corridor – Modified. Figure 1 on page 1-2 depicts the relative location of the alignments. Descriptions of identified aquatic features, total jurisdictional areas with respect to each above-listed agency, and a discussion of regulatory procedures are provided herein.

GLOSSARY

G.1 ACRONYMS FOR THE BUILD ALTERNATIVES

There are a number of build alternatives being evaluated for the South Orange County Transportation Infrastructure Improvement Project. A select number of these are evaluated in this report. The Acronyms for the build alternatives evaluated in this report are listed below.

Central Corridor – Complete – Initial Alternative	CC-Initial Alternative
Central Corridor – Complete – Ultimate Alternative	CC-Ultimate Alternative
Central Corridor – Avenida La Pata Variation – Initial Alternative	CC-ALPV-Initial Alternative
Central Corridor – Avenida La Pata Variation – Ultimate Alternative	CC-ALPV-Ultimate Alternative
Alignment 7 Corridor – Avenida La Pata Variation – Initial Alternative	A7C-ALPV-Initial Alternative
Alignment 7 Corridor – Avenida La Pata Variation – Ultimate Alternative	A7C-ALPV-Ultimate Alternative
Alignment 7 Corridor – Far East Crossover - Modified – Initial Alternative	A7C-FEC-M-Initial Alternative
Alignment 7 Corridor – Far East Crossover- Modified– Ultimate Alternative	A7C-FEC-M-Ultimate Alternative
Far East Corridor – West – Initial Alternative	FEC-W-Initial Alternative
Far East Corridor – West – Ultimate Alternative	FEC-W-Ultimate Alternative
Far East Corridor – Modified – Initial Alternative	FEC-M-Initial Alternative
Far East Corridor – Modified – Ultimate Alternative	FEC-M-Ultimate Alternative

G.2 OTHER ACRONYMS

CCC	California Coastal Commission
CDFG	California Department of Fish and Game
Corps	United States Army Corps of Engineers
EPA	United States Environmental Protection Agency
FAC	Facultative plant
FACU	Facultative upland plant
FACW	Facultative wetland plant
GLA	Glenn Lukos Associates
MBA	Michael Brandman Associates
NI	No Wetland Indicator Status

OBL	Obligate wetland plant
OHWM	Ordinary High Water Mark
RWQCB	Regional Water Quality Control Board
SAMP	Special Area Management Plan
SWANCC	Solid Waste Agency of Northern Cook County
UPL	Obligate upland plant
WDRs	Waste Discharge Requirements

G.3 GLOSSARY OF TERMS

Depressional Wetland	A wetland that lay within a depression in the landscape, generally draining a small surface area.
Ephemeral Stream	A stream or part of a stream that flows only in direct response to precipitation; it receives little or no water from springs, melting snow, or other sources; its channel is at all times above the water table.
Forested Wetland	A wetland class where the soil is saturated and often inundated, and woody plants taller than 20 feet form the dominant cover, e.g. red maple, American elm, and tamarack; water tolerant shrubs often form a second layer beneath the forest canopy, with a layer of herbaceous plants growing beneath the shrubs.
Hydric soil	Soil that is wet long enough to periodically produce anaerobic conditions, thereby influencing the growth of plants.
Hydrophytic vegetation	Vegetation that is tolerant of or adapted to prolonged periods of soil saturation.
Intermittent Stream	Streams that discharge ground water primarily during the wet seasons when the water table is high, and remain dry for a portion of the year; it's channel is above the water table during some portion of the year.
Open Water	An aquatic resource exhibiting persistent areas of open water with less than 30-percent vegetative cover.

Perennial Stream	A stream that normally has water in its channel at all times because it is sustained by groundwater discharge as well as by surface runoff; it's channel is below the ground water table.
Slope Wetland	A wetland characterized by the discharge of groundwater, often on a slope.
Wetland hydrology	Saturated soils within 12 inches of the surface for at least five percent of the growing season during a normal rainfall year.
Vernal Pool	Vernal pools are depressions that pond shallow water following winter and spring rains due to an impervious hardpan that prevents percolation of the ponded water. In the SOCTIP survey area, vernal pools are distinguished from other seasonal wetland habitats by basin topography and the presence of indicator plant species (Zedler 1987). For this survey, a basin was defined as a vernal pool if it contains at least one indicator species from Zedler (1987).
Vernal Marsh	Habitat is distinguished from vernal pool habitat by the lack of vernal pool indicator species, specifically from Table 6A of Zedler (1987), such as dwarf wool heads, marsh cudweed, or hyssop loosestrife. In the survey area, vernal marsh habitat is dominated by needle spikerush, rabbitsfoot grass, curly dock and mulefat. All vernal marshes were surveyed for listed fairy shrimp species according to USFWS protocols.

1.0 INTRODUCTION

This report summarizes the preliminary findings regarding United States Army Corps of Engineers (Corps) and California Department of Fish and Game (CDFG) jurisdiction, and for limited segments of the Far East and Central Alignments, the California Coastal Commission (CCC) jurisdiction for the Foothill Transportation Corridor-South.[1] From July through September, 2001 and April through June, 2004, Biologists and Regulatory Specialists of Glenn Lukos Associates (GLA) and P&D Consultants examined portions of the Central, 7 and Far East Alignments to determine the limits of (1) Corps jurisdiction pursuant to Section 404 of the Clean Water Act, (2) CDFG jurisdiction pursuant to Division 2, Chapter 6, Section 1600 of the Fish and Game Code, (3) isolated waters not subject to Corps, CDFG or CCC jurisdiction and (4) for limited portions of the Far East and Central Alignments, CCC jurisdiction pursuant to the California Coastal Act. On October 26 and November 9, 2004, Susan Meyer from the Corps conducted a field verification. This delineation incorporates comments provided during the verification. Enclosed are 700-scale maps [Exhibits 1 and 2] that depict the jurisdictional areas. Figure 1 on Page 1-2 depicts the relative location of each alignment. Drainage descriptions and jurisdictional totals for the entire study area are included as Appendix A. Impact totals and study area totals for isolated features are included as Appendix B. Wetland data sheets are attached as Appendix C. Overlay maps depicting data from the *Planning Level Delineation and Geospatial Characterization of Riparian Ecosystems of San Juan Creek and Portions of San Mateo Creek Watersheds, Orange County, California*[2], are attached as Appendices D and E. Appendix F is an aerial photograph overlay.

[1] This report presents a final determination of jurisdictional boundaries. The Corps has made a final determination through the verification process If a final jurisdictional determination is required from other agencies, GLA can assist in getting written confirmation of jurisdictional boundaries from the agencies.

[2] Lichvar, R. et al. 2000. *Planning Level Delineation and Geospatial Characterization of Riparian Ecosystems of San Juan Creek and Portions of San Mateo Creek Watersheds, Orange County, California.* Army Corps of Engineers, Engineer and Research Development Center and Cold Regions Research and Engineering Laboratory: Hanover N.H.

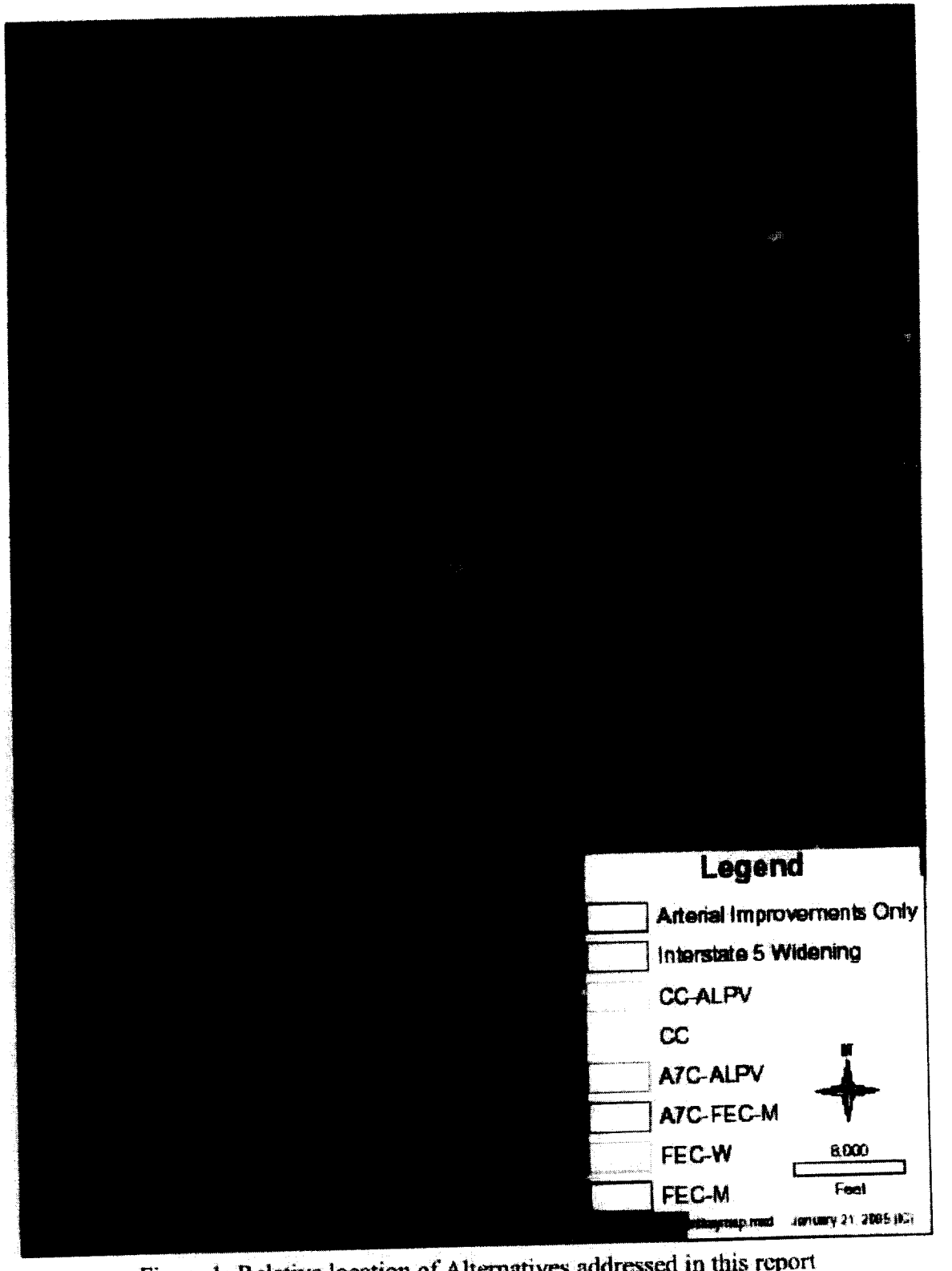

Figure 1: Relative location of Alternatives addressed in this report

1.1 PROJECT HISTORY

This delineation is derived from several sources. The following discussion provides a summary of prior delineations and the current effort to delineate the SOCTIIP alternatives.

From October 1995 to May 1996 a jurisdictional delineation was conducted by Michael Brandman Associates (MBA) for the CC Alternative (previously called the BX Alternative), and the FEC Alternative (previously called the CP Alternative) (1995/1996 MBA Delineation). This delineation was never verified by the Corps, CDFG, RWQCB or CCC. From July 2001 to September 2001, the jurisdictional delineation was updated by GLA (2001 GLA Delineation). At that time, GLA regulatory specialists revised the delineation for the Far East Alignment based on field indicators observed during field visits as well as delineating the A7C – FEC Alternative. This delineation was never verified. From October 2002 to November 2003, GLA conducted a jurisdictional delineation for the portion of Rancho Mission Viejo (RMV) that overlaps with segments of the SOCTIIP study area and corridor alternatives addressed in this report (2003 RMV Delineation). The RMV delineation verification occurred from March 2003 to October 2003. For the purposes of this report, the verified RMV delineation data has replaced all previous data where overlaps occurred. In October 2003, a gap analysis was conducted to determine if and where data was lacking for the A7C-FEC-M Alternative, FEC-M Alternative and FEC-W Alternative. From April 2004 through June 2004, GLA regulatory specialists proceeded to delineate the remaining areas which had not yet been previously delineated as well as updating the delineation for any areas of the A7C-FEC-M Alternative, FEC-M Alternative, and FEC-W Alternative where 2001 delineation data has not been superseded by 2003 RMV data (2004 GLA Delineation). From November 2004 through December 2004, the delineation was refined to incorporate input from the Corps during the field verification. Figure 2 depicts the delineation history graphically.

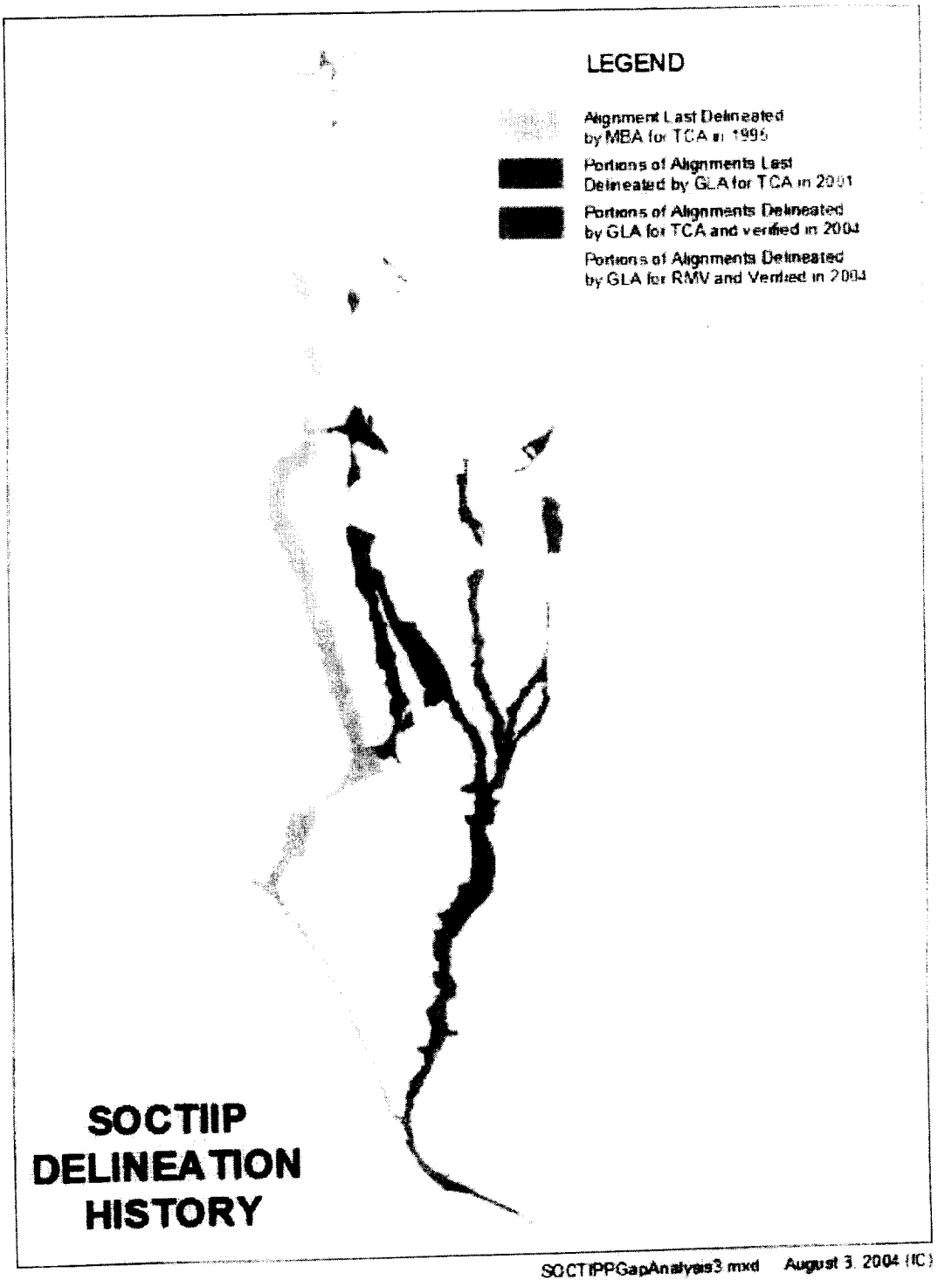

Figure 2: Graphical representation of SOCTIIP Delineation History

1.2 STUDY AREA TOTALS

Jurisdictional totals for the study areas, which extend from 200 to 1000 feet beyond the disturbance limits of each alignment, are included in Appendix A along with detailed drainage descriptions. Jurisdictional totals strictly represent the surface area of each feature and do not include an assessment of the relative quality of each feature. There is substantial overlap between the alignments. Therefore, the jurisdictional totals for each alternative are not mutually exclusive. In addition, the Corps, CDFG and CCC, regulate many of the same features, therefore jurisdictional totals for the various agencies are also not mutually exclusive.

1.3 JURISDICTIONAL IMPACT TOTALS

This impact analysis addresses both the initial and ultimate disturbance limits of the SOCTIIP alternatives although at this time permits are being sought only for the initial disturbance limits. Impact totals represent only the surface area subject to regulation by the various agencies and do not represent a relative assessment of function. This analysis assumes that all drainages within the disturbance limits are permanently filled as a result of the SOCTIIP, except for those that will be bridged. Although the other reaches will be filled the linear nature of a transportation project results in the installation of cross-culverts in a majority of drainages allowing for the retention of significant hydrologic function[3] [See Table 1.3-1]. Installation of the cross-culverts is still considered a permanent fill. For bridges, the small area of impact where the support columns are founded into the ground have been included as permanent impacts, while the remaining bridge right of way is assumed to be temporarily impacted for piling installation although the bridge structure will span over the open terrain. Although alignment refinements designed to avoid Tesoro Wetland (FE/C/7-Wetland 1) were not completed for A7C-ALPV, CC, and CC-ALPV, for the purposes of providing relative comparison of the SOCTIIP corridor alternatives impacts to Tesoro Wetland (FE/C/7-Wetland 1) were assumed to be avoided in this analysis.

[3] For locations where cross-culverts are not proposed.

TABLE 1.3-1 Summary of Drainages To Be Filled Without the Construction of Cross-Culverts or Other Hydrologic Connection

Alternative	Drainages to Be completely Filled with No Cross-Culvert or Other Hydrologic Connection
CC	Southern Tributary of C-10
CC-ALPV	Southern Tributary of C-10
A7C-ALPV	7-4, 7-9, Upper reaches of 7-10, 7-14
A7C-FEC-M	Southern Tributary of FE/7-3, Northern Tributary of FE/7-6, Northeastern Tributary FE/7-9, Southern and North Central Tributaries of FE/7-12, Northern Tributary of FE/7-2, 7-2, 7-11, Upper Reaches of FE/7-17, FE/7-19, FE/7-20, FE/7-23 and FE/7-25
FEC-W	Southern Tributary of FE/7-2, FE-2A, FE-7-4, Northeastern Tributary FE/7-9, Southern and North Central Tributaries of FE/7-12, Upper Reaches of FE/7-17, FE/7-19, FE/7-20, FE/7-23 and FE/7-25
FEC-M	FE/7-8A, Southern and North Central Tributaries of FE/7-12, Upper Reaches of FE/7-17, FE/7-19, FE/7-20, FE/7-23, FE/7-25, Two Ephemeral Tributaries of FEM-11, FEM-3, FEM-5, FEM-6, FEM-8, Southern Tributary of FE/7-2, FE-2A, Ephemeral Tributaries to FE-7

It should also be noted that many of the alternatives share common segments and, thus, have identical impacts along these shared segments. It is important, therefore, to recognize that areas of jurisdictional impact identified along one alternative may be common to multiple alternatives. In addition, the Corps, CDFG, and CCC regulate many of the same features, therefore, jurisdictional impact totals for the various agencies do overlap and should not be considered mutually exclusive.

1.3.1 Army Corps of Engineers Impact Totals

Army Corps of Engineers (Corps) jurisdiction, as described more fully in Section 3, generally extends to the Ordinary High Water Mark (OHWM) of features that discharge to navigable waters, in this case the Pacific Ocean, are tributary to features that discharge to navigable waters or are themselves considered a navigable water. In addition, the Corps also regulates features that are adjacent to jurisdictional waters and meet the Corps' definition of a wetland. All features that meet the above definitions are considered "waters of the US." The surface area that these features cover is subject to regulation by the Corps pursuant to Section 404 of the Clean Water Act. Surface area is determined using the OHWM, which refers to the lateral extent of stream flow occurring during a normal storm event or the area that meets the Corps' definition of a wetland. These limits are determined in the field based upon the field indicators described in Section 3. All waters are examined for wetland characteristics including the presence of vegetation adapted to sustained soil saturation and evidence of saturation occurring for at least 18 consecutive days including the presence of hydric soils, which are soils that exhibit indicators of

saturation, and are either classified as wetland or non-wetland waters. All of the wetlands subject to Corps jurisdiction are also considered special aquatic sites. Special aquatic sites are defined as "geographic areas, large or small, possessing special ecological characteristics of productivity, habitat, wildlife protection, or other important and easily disrupted ecological values" (40 CFR 230.s.3). No other special aquatic sites, including riffle-pool complexes, mud flats, vegetated shallows, coral reefs and sanctuaries, were identified within the impact boundaries. In order to further clarify the types of resources to be impacted, they have been divided into the following categories: perennial, intermittent and ephemeral streams, open water, slope wetlands, depressional wetlands and forested wetlands.

Pursuant to *Solid Waste Agency of Northern Cook County (SWANNC)*, Corps jurisdiction does not extend to features that exhibit no surface connection to other jurisdictional features. Both permanent and temporary impacts are provided in this report. Permanent impact totals are summarized by resource agency in Table 1.3-2. Temporary impact totals are summarized by resource agency in Table 1.3-3. Permanent impact totals are summarized by resource type in Table 1.3-4. Temporary impact totals are summarized by resource type in Table 1.3-5.

Central Corridor Complete

The CC-Initial Alternative will permanently impact approximately 14.87 acres subject to Corps jurisdiction. This total consists of 13.40 acres of wetland and 1.47 acres of non-wetland waters.

The CC-Initial Alternative will temporarily impact approximately 12.10 acres subject to Corps jurisdiction. This total consists of 1.58 acres of wetland and 10.52 acres of non-wetland waters.

The CC-Ultimate Alternative will permanently impact approximately 15.08 acres subject to Corps jurisdiction. This total consists of 13.57 acres of wetland and 1.51 acres of non-wetland waters.

The CC-Ultimate Alternative will temporarily impact approximately 12.65 acres subject to Corps jurisdiction. This total consists of 1.65 acres of wetland and 11.00 acres of non-wetland waters.

Central Corridor – Avenida La Pata Variation

The CC – ALPV-Initial Alternative will permanently impact approximately 12.38 acres subject to Corps jurisdiction. This total consists of 11.41 acres of wetland and 0.97 acres of non-wetland waters.

The CC – ALPV-Initial Alternative will temporarily impact approximately 12.10 acres subject to Corps jurisdiction. This total consists of 1.58 acres of wetland and 10.52 acres of non-wetland waters.

The CC – ALPV-Ultimate Alternative will permanently impact approximately 13.39 acres subject to Corps jurisdiction. This total consists of 12.38 acres of wetland and 1.01 acres of non-wetland waters.

The CC – ALPV-Ultimate Alternative will temporarily impact approximately 12.65 acres subject to Corps jurisdiction. This total consists of 1.65 acres of wetland and 11.00 acres of non-wetland waters.

Alignment 7 Corridor – Avenida La Pata Variation

The A7C – ALPV Initial Alternative will permanently impact approximately 2.52 acres subject to Corps jurisdiction. This total consists of 0.56 acres of wetland and 1.96 acres of non-wetland waters.

The A7C – ALPV Initial Alternative will temporarily impact approximately 5.51 acres subject to Corps jurisdiction. This total consists of 1.91 acres of wetland and 3.60 acres of non-wetland waters.

The A7C – ALPV-Ultimate Alternative will permanently impact approximately 3.34 acres subject to Corps jurisdiction. This total consists of 1.36 acres of wetland and 1.98 acres of non-wetland waters.

The A7C – ALPV-Ultimate Alternative will temporarily impact approximately 6.07 acres subject to Corps jurisdiction. This total consists of 2.47 acres of wetland and 3.60 acres of non-wetland waters.

Alignment 7 Corridor – Far East Crossover – Modified

The A7C – FEC – M-Initial Alternative permanently will impact approximately 6.78 acres subject to Corps jurisdiction. This total consists of 0.93 acres of jurisdictional wetland and 5.85 acres of non-wetland waters.

The A7C – FEC – M-Initial Alternative will temporarily impact approximately 11.08 acres subject to Corps jurisdiction. This total consists of 8.51 acres of jurisdictional wetland and 2.57 acres of non-wetland waters.

TheA7C – FEC – M-Ultimate Alternative will permanently impact approximately 6.90 acres subject to Corps jurisdiction. This total consists of 0.93 acres of wetland and 5.97 acres of non-wetland waters.

TheA7C – FEC – M-Ultimate Alternative will temporarily impact approximately 12.24 acres subject to Corps jurisdiction. This total consists of 8.77 acres of wetland and 3.47 acres of non-wetland waters.

Far East Corridor - West

The FEC – W-Initial Alternative will permanently impact approximately 6.69 acres subject to Corps jurisdiction. This total consists of 2.62 acres of wetland and 4.07 acres of non-wetland waters.

The FEC – W-Initial Alternative will temporarily impact approximately 9.15 acres subject to Corps jurisdiction. This total consists of 8.62 acres of wetland and 0.53 acres of non-wetland waters.

The FEC – W-Ultimate Alternative will permanently impact approximately 6.96 acres subject to Corps jurisdiction. This total consists of 2.64 acres of wetland and 4.32 acres of non-wetland waters.

The FEC – W-Ultimate Alternative will temporarily impact approximately 9.35 acres subject to Corps jurisdiction. This total consists of 8.71 acres of wetland and 0.64 acres of non-wetland waters.

Far East Corridor – Modified

The FEC-M-Initial Alternative will permanently impact approximately 5.44 acres subject to Corps jurisdiction. This total consists of 1.71 acres of wetland and 3.73 acres of non-wetland waters.

The FEC-M-Initial Alternative will temporarily impact approximately 11.31 acres subject to Corps jurisdiction. This total consists of 8.98 acres of wetland and 2.33 acres of non-wetland waters.

The FEC-M- Ultimate Alternative will permanently impact approximately 6.02 acres subject to Corps jurisdiction. This total consists of 1.99 acres of wetland and 4.04 acres of non-wetland waters.

The FEC-M- Ultimate Alternative will temporarily impact approximately 12.06 acres subject to Corps jurisdiction. This total consists of 9.11 acres of wetland and 2.95 acres of non-wetland waters.

1.3.2 California Department of Fish and Game Impact Totals

California Department of Fish and Game (CDFG) jurisdiction, as described more fully in Section 3.0, extends to all lakes, streambeds and impoundments of streambeds regardless of contiguity with other jurisdictional features. The lateral extent of CDFG jurisdiction is based upon the presence of a bed and bank or riparian vegetation associated with the streambed. A detailed description of the methodology used to determine the extent of jurisdictional riparian habitat is

included in Section 3.0. Permanent impact totals are summarized by resource agency in Table 1.3-2. Temporary impact totals are summarized by resource agency in Table 1.3-3. Permanent impact totals are summarized by resource type in Table 1.3-4. Temporary impact totals are summarized by resource type in Table 1.3-5.

Central Corridor – Complete

The CC- Initial Alternative will permanently impact approximately 18.23 acres subject to CDFG jurisdiction. This total consists of 17.20 acres of vegetated riparian habitat and 1.03 acres of unvegetated streambed.

The CC- Initial Alternative will temporarily impact approximately 12.74 acres subject to CDFG jurisdiction all of which consists of vegetated riparian habitat.

The CC- Ultimate Alternative will permanently impact approximately 19.20 acres subject to CDFG jurisdiction. This total consists of 18.14 acres of vegetated riparian habitat and 1.06 acres of unvegetated streambed.

The CC- Ultimate Alternative will temporarily impact approximately 13.65 acres subject to CDFG jurisdiction. This total consists of 13.65 acres of vegetated riparian habitat and 0.00 acres of unvegetated streambed.

Central Corridor – Avenida La Pata Variation

The CC- ALPV-Initial Alternative will permanently impact approximately 15.75 acres subject to CDFG jurisdiction. This total consists of 14.94 acres of vegetated riparian habitat and 0.81 acres of unvegetated streambed.

The CC- ALPV-Initial Alternative will temporarily impact approximately 12.74 acres subject to CDFG jurisdiction, all of which consists of vegetated riparian habitat.

The CC- ALPV-Ultimate Alternative will permanently impact approximately 17.51 acres subject to CDFG jurisdiction. This total consists of 16.67 acres of vegetated riparian habitat and 0.85 acres of unvegetated streambed.

The CC- ALPV-Ultimate Alternative will temporarily impact approximately 13.65 acres subject to CDFG jurisdiction, all of which consists of vegetated riparian habitat.

Alignment 7 Corridor – Avenida La Pata Variation

The A7C-ALPV- Initial Alternative will permanently impact approximately 9.89 acres subject to CDFG jurisdiction. This total consists of 8.99 acres of vegetated riparian habitat and 0.90 acre of unvegetated streambed.

The A7C-ALPV- Initial Alternative will temporarily impact approximately 6.63 acres subject to CDFG jurisdiction, all of which consists of vegetated riparian habitat.

The A7C-ALPV- Ultimate Alternative will permanently impact approximately 11.12 acres subject to CDFG jurisdiction. This total consists of 10.17 acres of vegetated riparian habitat and 0.95 acres of unvegetated streambed.

The A7C-ALPV- Ultimate Alternative will temporarily impact approximately 7.19 acres subject to CDFG jurisdiction, all of which consists of vegetated riparian habitat.

Alignment 7 Corridor – Far East Crossover – Modified

The A7C-FEC-M- Initial Alternative will permanently impact approximately 23.83 acres subject to CDFG jurisdiction. This total consists of 21.52 acres of vegetated riparian habitat and 2.31 acres of unvegetated streambed.

The A7C-FEC-M- Initial Alternative will temporarily impact approximately 14.86 acres subject to CDFG jurisdiction, all of which consists of vegetated riparian.

The A7C-FEC-M- Ultimate Alternative will permanently impact approximately 24.21 acres subject to CDFG jurisdiction. This total consists of 21.93 acres of vegetated riparian habitat and 2.28 acres of unvegetated streambed.

The A7C-FEC-M- Ultimate Alternative will temporarily impact approximately 16.99 acres subject to CDFG jurisdiction, all of which consists of vegetated riparian.

Far East Corridor – West

The FEC-W- Initial Alternative will permanently impact approximately 25.45 acres subject to CDFG jurisdiction. This total consists of 23.13 acres of vegetated riparian habitat and 2.32 acres of unvegetated streambed.

The FEC-W- Initial Alternative will temporarily impact approximately 11.23 acres subject to CDFG jurisdiction. This total consists of 11.22 acres of vegetated riparian habitat and 0.01 acres of unvegetated streambed.

The FEC-W- Ultimate Alternative will permanently impact approximately 26.31 acres subject to CDFG jurisdiction. This total consists of 23.92 acres of vegetated riparian habitat and 2.39 acres of unvegetated streambed.

The FEC-W- Ultimate Alternative will temporarily impact approximately 11.80 acres subject to CDFG jurisdiction. This total consists of 11.79 acres of vegetated riparian habitat and 0.01 acres of unvegetated streambed.

Far East Corridor – Modified

The FEC-M- Initial Alternative will permanently impact approximately 18.67 acres subject to CDFG jurisdiction. This total consists of 16.88 acres of vegetated riparian habitat and 1.79 acres of unvegetated streambed.

The FEC-M- Initial Alternative will temporarily impact approximately 13.28 acres subject to CDFG jurisdiction. This total consists of 13.27 acres of vegetated riparian habitat and 0.01 acres of unvegetated streambed.

The FEC-M- Ultimate Alternative will permanently impact approximately 19.90 acres subject to CDFG jurisdiction. This total consists of 17.95 acres of vegetated riparian habitat and 1.95 acres of unvegetated streambed.

The FEC-M- Ultimate Alternative will temporarily impact approximately 14.35 acres subject to CDFG jurisdiction. This total consists of 14.34 acres of vegetated riparian habitat and 0.01 acres of unvegetated streambed.

TABLE 1.3-2
SUMMARY OF PERMANENT IMPACTS TO JURISDICTION
(in acres)

	CORPS			CDFG		
Alternative	Total	Non-Wetland Water	Wetlands	Total	Unvegetated Streambed	Vegetated
CC – Initial	14.87	1.47	13.40	18.23	1.03	17.20
CC – Ultimate	15.08	1.51	13.57	19.20	1.06	18.14
CC-ALPV – Initial	12.38	0.97	11.41	15.75	0.81	14.94
CC-ALPV – Ultimate	13.39	1.01	12.38	17.51	0.85	16.67
A7C-ALPV – Initial	2.52	1.96	0.56	9.89	0.90	8.99
A7C-ALPV – Ultimate	3.34	1.98	1.36	11.12	0.95	10.17
A7C-FEC-M – Initial	6.78	5.85	0.93	23.83	2.31	21.52
A7C-FEC-M – Ultimate	6.90	5.97	0.93	24.21	2.28	21.93
FEC-W – Initial	6.69	4.07	2.62	25.45	2.32	23.13
FEC-W – Ultimate	6.96	4.32	2.64	26.31	2.39	23.92
FEC-M – Initial	5.44	3.73	1.71	18.67	1.79	16.88
FEC-M – Ultimate	6.02	4.04	1.99	19.90	1.95	17.95

TABLE 1.3-3
SUMMARY OF TEMPORARY IMPACTS TO JURISDICTION
(in acres)

	CORPS			CDFG		
Alignment	Total	Non-Wetland Water	Wetlands	Total	Unvegetated Streambed	Vegetated
CC – Initial	12.10	10.52	1.58	12.74	0.00	12.74
CC – Ultimate	12.65	11.00	1.65	13.65	0.00	13.65
CC-ALPV – Initial	12.10	10.52	1.58	12.74	0.00	12.74
CC-ALPV – Ultimate	12.65	11.00	1.65	13.65	0.00	13.65
A7C-ALPV – Initial	5.51	3.60	1.91	6.63	0.00	6.63
A7C-ALPV – Ultimate	6.07	3.60	2.47	7.19	0.00	7.19
A7C-FEC-M – Initial	11.08	2.57	8.51	14.86	0.00	14.86
A7C-FEC-M – Ultimate	12.24	3.47	8.77	16.99	0.00	16.99
FEC-W – Initial	9.15	0.53	8.62	11.23	0.01	11.22
FEC-W – Ultimate	9.35	0.64	8.71	11.80	0.01	11.79
FEC-M – Initial	11.31	2.33	8.98	13.28	0.01	13.27
FEC-M – Ultimate	12.06	2.95	9.11	14.35	0.01	14.34

TABLE 1.3-4
SUMMARY OF PERMANENT IMPACTS (IN ACRES)
TO CORPS JURISDICTION
BY TYPE OF AQUATIC RESOURCE

Alternative	Perennial	Intermittent	Open Water	Slope Wetland[1]	Depressional Wetland[2]	Forested Wetland	Ephemeral	Total
CC-Initial	12.77	0.53	0.00	0.12	0.00	0.00	1.44	14.87
CC-Ultimate	12.94	0.51	0.00	0.12	0.00	0.00	1.51	15.08
CC-ALPV-Initial	10.5	0.53	0.00	0.12	0.00	0.00	1.23	12.38
CC-ALPV-Ultimate	11.52	0.45	0.00	0.12	0.00	0.00	1.3	13.39
A7C-ALPV-Initial	0.69	0.08	0.00	0.00	0.00	0.00	1.75	2.52
A7C-ALPV-Ultimate	1.5	0.75	0.00	0.00	0.00	0.00	1.09	3.34
A7C-FEC-M-Initial	0.62	0.36	0.00	0.00	0.33	0.00	5.47	6.78
A7C-FEC-M-Ultimate	0.62	0.36	0.00	0.00	0.33	0.00	5.59	6.90
FEC-W-Initial	0.62	1.533	1.52	0.00	0.33	0.00	2.68	6.69
FEC-W-Ultimate	0.62	1.58	1.52	0.00	0.33	0.00	2.91	6.96
FEC-M-Initial	0.62	0.7	0.22	0.00	0.51	0.00	3.39	5.44
FEC-M-Ultimate	0.62	0.86	0.31	0.00	0.62	0.00	3.61	6.02

[1] In HGM Wetland classification, slope wetlands normally are found where there is a discharge of groundwater to the land surface.
[2] In HGM Wetland classification, depressional wetlands occur in topographic depressions and include those features identified within this document as vernal marshes, seasonal ponds and vernal pools.

TABLE 1.3-5
SUMMARY OF TEMPORARY IMPACTS (IN ACRES)
TO CORPS JURISDICTION
BY TYPE OF AQUATIC RESOURCE

Alternative	Perennial	Intermittent	Open Water	Slope Wetland[1]	Depressional Wetland[2]	Forested Wetland	Ephemeral	Total
CC-Initial	0.00	12.10	0.00	0.00	0.00	0.00	0.00	12.10
CC-Ultimate	0.00	12.65	0.00	0.00	0.00	0.00	0.00	12.65
CC-ALPV-Initial	0.00	12.10	0.00	0.00	0.00	0.00	0.00	12.10
CC-ALPV-Ultimate	0.00	12.65	0.00	0.00	0.00	0.00	0.00	12.65
A7C-ALPV-Initial	0.78	4.48	0.00	0.22	0.00	0.00	0.03	5.51
A7C-ALPV-Ultimate	1.21	4.48	0.00	0.35	0.00	0.00	0.03	6.07
A7C-FEC-M-Initial	8.22	2.86	0.00	0.00	0.00	0.00	0.00	11.08
A7C-FEC-M-Ultimate	8.38	3.86	0.00	0.00	0.00	0.00	0.00	12.24
FEC-W-Initial	8.22	0.92	0.00	0.00	0.00	0.00	0.01	9.15
FEC-W-Ultimate	8.22	1.12	0.00	0.00	0.00	0.00	0.01	9.35
FEC-M-Initial	8.22	3.0	0.00	0.00	0.07	0.00	0.02	11.31
FEC-M-Ultimate	8.22	3.75	0.00	0.00	0.07	0.00	0.02	12.06

[1] In HGM Wetland classification, slope wetlands normally are found where there is a discharge of groundwater to the land surface.
[2] In HGM Wetland classification, depressional wetlands occur in topographic depressions and include those features identified within this document as vernal marshes, seasonal ponds and vernal pools.

1.3.2 CCC Impact Totals

As detailed in Section 3.0, pursuant to the Coastal Act, California Coastal Commission (CCC) regulates the diking, filling or dredging of wetlands within the coastal zone. The Coastal Act defines wetlands as land "*...which may be covered periodically or permanently with shallow water.*" Subsequent interpretive guidelines state that the "*...presence or absence of hydric soils and/or hydrophytes alone are not necessarily determinative when the Commission identifies wetland under the Coastal Act.*" Therefore, CCC regulates impacts to all wetlands regulated by the Corps, which require that three-parameters including vegetation, soils and hydrology are present in order for a feature to be classified as a wetland, as well as any features in which at least one or two of the previous parameters is met. The totals listed below reflect permanent impacts to features that are subject to CCC regulation. Permanent impact totals to CCC jurisdiction are summarized in Table 1.3-6. Temporary impact totals to CCC jurisdiction are summarized in Table 1.3-7.

Central Corridor - Complete

Permanent impacts to CCC jurisdiction associated with those segments of the CC – Initial Alternative within the coastal zone total approximately 0.02 acre all of which consist of areas that qualify as CCC wetlands based on the presence of one parameter out of three possible parameters (soils, hydrology, plants).

There are no temporary impacts to CCC jurisdiction associated with the CC – Initial Alternative.

There are no permanent or temporary impacts to CCC jurisdiction associated with the CC – Ultimate Alternative.

Central Corridor – Avenida La Pata Variation

There are no permanent or temporary impacts to CCC jurisdiction associated with the CC – ALPV - Initial Alternative.

There are no permanent or temporary impacts to CCC jurisdiction associated with the CC – ALPV - Ultimate Alternative.

Alignment 7 Corridor – Avenida La Pata Variation

There are no permanent or temporary impacts to CCC jurisdiction associated with the A7C – ALPV - Initial Alternative.

There are no permanent or temporary impacts to CCC jurisdiction associated with the A7C – ALPV - Ultimate Alternative.

Alignment 7 Corridor – Far East Crossover - Modified

Permanent impacts to CCC jurisdiction associated with those segments of the A7C – FEC - M – Initial Alternative within the coastal zone total approximately 0.34 acre all of which consist of areas that qualify as CCC wetlands based on the presence of one parameter out of three possible parameters (soils, hydrology, plants).

Temporary impacts to CCC jurisdiction associated with those segments of the A7C – FEC - M – Initial Alternative within the coastal zone total approximately 8.22 acres all of which consist of areas that qualify as CCC wetlands based on the presence of one parameter out of three possible parameters (soils, hydrology, plants).

Permanent impacts to CCC jurisdiction associated with those segments of the A7C – FEC - M – Ultimate Alternative within the coastal zone total approximately 0.35 acre all of which consist of areas that qualify as CCC wetlands based on the presence of one parameter out of three possible parameters (soils, hydrology, plants).

Temporary impacts to CCC jurisdiction associated with those segments of the A7C – FEC - M – Ultimate Alternative within the coastal zone total approximately 8.38 acres all of which consist of areas that qualify as CCC wetlands based on the presence of one parameter out of three possible parameters (soils, hydrology, plants).

Far East Corridor – West

Permanent impacts to CCC jurisdiction associated with those segments of the FEC - W – Initial Alternative within the coastal zone total approximately 0.34 acre all of which consist of areas that qualify as CCC wetlands based on the presence of one parameter out of three possible parameters (soils, hydrology, plants).

Temporary impacts to CCC jurisdiction associated with those segments of the FEC - W – Initial Alternative within the coastal zone total approximately 8.22 acres all of which consist of areas that qualify as CCC wetlands based on the presence of one parameter out of three possible parameters (soils, hydrology, plants).

Permanent impacts to CCC jurisdiction associated with those segments of the FEC - W – Ultimate Alternative within the coastal zone total approximately 0.35 acre all of which consist of areas that qualify as CCC wetlands based on the presence of one parameter out of three possible parameters (soils, hydrology, plants).

Temporary impacts to CCC jurisdiction associated with those segments of the FEC - W – Ultimate Alternative within the coastal zone total approximately 8.38 acres all of which consist of areas that qualify as CCC wetlands based on the presence of one parameter out of three possible parameters (soils, hydrology, plants).

Far East Corridor – Modified

Permanent impacts to CCC jurisdiction associated with those segments of the FEC - M – Initial Alternative within the coastal zone total approximately 0.34 acre all of which consist of areas that qualify as CCC wetlands based on the presence of one parameter out of three possible parameters (soils, hydrology, plants).

Temporary impacts to CCC jurisdiction associated with those segments of the FEC - M – Initial Alternative within the coastal zone total approximately 8.22 acres all of which consist of areas that qualify as CCC wetlands based on the presence of one parameter out of three possible parameters (soils, hydrology, plants).

Permanent impacts to CCC jurisdiction associated with those segments of the FEC - M – Ultimate Alternative within the coastal zone total approximately 0.35 acre all of which consist of areas that qualify as CCC wetlands based on the presence of one parameter out of three possible parameters (soils, hydrology, plants).

Temporary impacts to CCC jurisdiction associated with those segments of the FEC - M – Ultimate Alternative within the coastal zone total approximately 8.38 acres all of which consist of areas that qualify as CCC wetlands based on the presence of one parameter out of three possible parameters (soils, hydrology, plants).

TABLE 1.3-6
SUMMARY OF PERMANENT IMPACTS TO CCC JURISDICTION

Alignment	Acreage
CC – Initial Alternative	0.02
CC – Ultimate Alternative	0.00
CC-ALPV – Initial Alternative	0.00
CC-ALPV – Ultimate Alternative	0.00
A7C-ALPV – Initial Alternative	0.00
A7C-ALPV – Ultimate Alternative	0.00
A7C-FEC-M – Initial Alternative	0.34
A7C-FEC-M – Ultimate Alternative	0.35
FEC-W – Initial Alternative	0.34
FEC-W – Ultimate Alternative	0.35
FEC-M – Initial Alternative	0.34
FEC-M – Ultimate Alternative	0.35

TABLE 1.3-7

SUMMARY OF TEMPORARY IMPACTS TO CCC JURISDICTION

Alignment	Acreage
CC – Initial Alternative	0.00
CC – Ultimate Alternative	0.00
CC-ALPV – Initial Alternative	0.00
CC-ALPV – Ultimate Alternative	0.00
A7C-ALPV – Initial Alternative	0.00
A7C-ALPV – Ultimate Alternative	0.00
A7C-FEC-M – Initial Alternative	8.22
A7C-FEC-M – Ultimate Alternative	8.38
FEC-W – Initial Alternative	8.22
FEC-W – Ultimate Alternative	8.38
FEC-M – Initial Alternative	8.22
FEC-M – Ultimate Alternative	8.38

2.0 METHODOLOGY

Prior to beginning the field delineation, a series of 400-scale color aerial photographs, 400-scale topographic base maps of the alignments to be evaluated, the delineation maps associated with the 1995/1996 MBA Delineation, and USGS topographic maps (San Clemente, Canada Gobenadora, San Juan Capistrano and Dana Point Quads) were examined to determine the locations of potential areas of Corps/CDFG/CCC jurisdiction. Isolated waters not subject to these three agency's jurisdiction were also evaluated. The criteria used to define the presence and/or limits of jurisdiction vary among the regulatory agencies addressed in this report. As such, where jurisdictional limits were not coincident (e.g., between Corps and CDFG jurisdiction), separate and distinct limits were recorded that depicted the limits of the respective jurisdictional areas. Criteria set forth by each of the agencies and utilized for the jurisdictional determinations and delineation are provided in Section 3.0.

In general, evaluation of each drainage feature relative to each agency jurisdiction, extended beyond the disturbance limits for a minimum of 200 feet for first, second, and third order streams[1,2] and between 500 and 1,000 feet for larger streams. The distance delineated beyond the disturbance limits was generally based on professional judgment. Features greater than 1,000 feet from the disturbance limits were excluded from this analysis. These conventions were also applied where wetlands and/or riparian habitat was identified adjacent to steams. For drainage features that appeared to be isolated due to a lack of surface tributary connection with other jurisdictional waters, the drainage course was followed to its terminus even when it extended beyond the study area. Isolated vernal marsh, vernal pond, slope wetland and pond features were examined for field indicators that suggested the presence of a hydrologic connection with nearby features. If none were present then the feature was designated as isolated. The maps provided in Exhibits 1 and 2 depict the disturbance limits for the Ultimate Alternatives.

[1] Streams were assigned an order according to Strahler, where the smallest unbranched tributaries are given a number of 1. Where two unbranched tributaries meet, the stream order is designated 2. Where two tributaries with an order of 2 meet, the stream order is designated 3, and so on.
[2] Strahler, A.N. (1952). *Hyposemetric (area-altitude) analysis of erosional topography.* Bulletin of The Geographical Society of America.

2.1 SOIL TYPES

The United States Soil Conservation Service (SCS)[3] has mapped the following soil types as occurring in the general vicinity of the project site:

Soil Unit	Soil Taxonomy	Description
Alo Clay	Typic Chromoxererts	9-50% slopes; consists of well drained soils formed in material weathered from calcareous sandstone and shale; it is moderately steep and generally occurs on broad ridgetops.
Altamont Clay	Typic Chromoxererts	9-15% and 30-50% slopes; consists of well drained clays formed in material weathered from calcareous shale; rapid runoff with high erosion.
Balcom clay loam	Calcixerollic Xerochrepts	15-30% slopes; consists of well drained soils on uplands formed from soft fine grained sandstone, calcareous soft shale and marl; moderately steep soil generally occurs on hill ridgetops.
Bosanko clay	Chromic Pelloxererts	9-50% slopes; consists of well drained soils formed in material weathered from calcareous shale, sandstone, or weakly consolidated sediments; strongly sloping soils which generally occurs on broad hilltop ridges and on toe slopes.
Botella clay loam	Pachic Argixerolls	2-15% slopes; consists of well drained soils on alluvial fans which formed in sedimentary alluvium; gently sloping to moderately sloping soil generally occurring on alluvial fans.
Botella loam	Pachic Argixerolls	2-9% slopes; consists of well drained soils on alluvial fans which formed in sedimentary alluvium; gently sloping to moderately sloping soil generally occurring on alluvial fans.

[3] SCS is now known as the National Resource Conservation Service or NRCS.

Soil Unit	Soil Taxonomy	Description
Calleguas clay loam	Typic Xerorthents	50-75% slopes, eroded; consists of well drained soils formed in material weathered from lime coated shale or lime coated sandstone, or both; very steep soil generally has south-facing slopes.
Capistrano sandy loam	Entic Haploxerolls	2-15% slopes; consists of well-drained soils formed in granitic alluvium; gently to strongly sloping soil occurs in long narrow foothill valleys.
Carlsbad gravelly loamy sand	Haplic Durochrepts	2 to 15% slopes; consists of moderately well drained and well drained gravelly loamy sands that are moderately deep over hardpan; formed in material weathered in place from soft ferruginous sandstone, occurs in ridges and in swales
Chino silty clay loam	Aquic Haploxerolls	This nearly level soil consists of poorly drained soils formed in sedimentary alluvium and generally occurs in large alluvial fans.
Cieneba sandy loam	Typic Xerothents	15-75% slopes; consists of somewhat excessively drained soils formed in material weathered from granitic rocks of the Santa Ana Mountains and from the sandstone of the coastal foothills; steep to very steep soil which is eroded.
Corralitos loamy sand	Typic Xeropsamments	This soil is nearly level to gentle sloping; consists of somewhat excessively drained soils formed in mixed coarse textured alluvium.
Cropley clay	Chromic Pelloxererts	2-9% slopes; consists of well drained soils formed in fine textured alluvium derived from sedimentary rocks
Diablo Clay	Chromic Pelloxererts	15-50% slopes; consists of well-drained clays derived from soft, calcareous limestone and shale; occurs on rounded hills.

Soil Unit	Soil Taxonomy	Description
Gaviota fine sandy loam	Lithic Xerorthents	30-50% slopes; consists of well drained, shallow fine sandy loams that formed in material weathered from marine sandstone; found on uplands.
Hanford sandy loam	Typic Xerorthents	2-9% slopes; consists of well-drained soils on alluvial fans and alluvial plains; soils formed in granitic alluvium.
Heurhuero loam	Haplic Natrixeralfs	15-30% slopes, eroded; consists of moderately well drained soils developed in sandy marine sediments; moderately steep and eroded.
Las Flores loamy fine sand	Haplic Natrieralfs	2-9% and 9 to 30%, eroded; consists of moderately well drained loamy fine sands that have a sandy clay sub-soil; soils formed in material weathered from siliceous marine sandstone; found on uplands.
Las Posas fine sandy loam	Typic Rhodoxeralfs	5 to 9% slopes; consist of well drained, moderately deep stony fine sandy loams that have a clay subsoil; soils formed in material weathered from basic igneous rocks; found on uplands.
Marina loamy coarse sand	Alfic Xeropsamments	2 to 30% slopes; consists of somewhat excessively drained, very deep loamy coarse sands derived from weakly consolidated to noncoherent ferruginous eolian sand; found on old beach ridges.
Mocho loam	Fluventic Haploxerolls	2 to 9% slopes; consist of well-drained soils on alluvial fans and flood plains; formed in alluvium derived from sedimentary rock.
Myford sandy loam	Typic Palexeralfs	2-30% slopes; consists of moderately well drained soils on marine terraces formed in sandy sediments.
Pits	No Soil Taxonomy	Open excavations from which soil and underlying material, mostly sand and

Soil Unit	Soil Taxonomy	Description
		gravel, have been removed.
Riverwash	No Soil Taxonomy	Consists of unconsolidated alluvium, generally stratified and varying widely in texture, recently deposited in intermittent stream, and subject to frequent changes through stream flow.
Rock outcrop - Cieneba complex	No Soil Taxonomy	30 to 75% slopes; consists of 50% or more rock outcrop and 50% or less Cieneba soils and is somewhat excessively drained; form in material weathered from granitic or sandstone rock.
Rough broken land	No Soil Taxonomy	Composed of well drained to excessively drained steep and very steep land dissected by many narrow V-shaped valleys and sharp tortuous divides.
Salinas clay loam	Calcic Pachic Haploxerolls	0 to 2 % slopes; consist of well drained and moderately well drained clay loams that formed in sediments washed from Diablo, Linne, Las Flores, Huerhuero and Olivenhain soils; found on flood plains and alluvial fans.
Soper gravelly loam	Typic Argixerolls	15 to 50% slopes; consists of well-drained soils on foothills; formed in weakly consolidated sandstone and conglomerate.
Soper-Rock outcrop complex	Typic Argixerolls	30 to 75% slopes; consists of 10-15% rock outcrop and shallow Soper soils; formed in weakly consolidated sandstone and conglomerate; found on hillsides and ridges.
Sorrento clay loam	Calcic Haploxerolls	2 to 9% slopes; consists of well-drained soils on upper valley alluvial fans and along stream channels; formed in alluvium derived from sedimentary rock.
Sorrento loam	Calcic Haploxerolls	2 to 9 % slopes; consists of well-drained soils on alluvial fans and flood

Soil Unit	Soil Taxonomy	Description
		plains; formed in alluvium derived from sedimentary rock.
Steep gullied land	No Soil Taxonomy	Consists of strongly sloping to steep areas that are actively eroding into old alluvium or decomposed rock.
Tidal Flats	No Soil Taxonomy	Occurs as nearly level areas adjacent to bays and lagoons along the coast, periodically covered by tidal overflow. Consists of stratified clayey to sandy deposits; poorly drained and high in salts.
Terrace Escarpments	No Soil Taxonomy	Consists of steep to very steep escarpments, occurring on the nearly even fronts of terraces or alluvial fans; loamy or gravelly soil over soft marine sandstone, shale or gravelly sediments.
Tujunga sand	Typic Xeropsamments	0-5% slopes; consists of very deep, excessively drained sands derived from granitic alluvium; found on alluvial fans and flood plains.
Visalia sandy loam	Pachic Haploxerolls	0 to 2% slopes; Consists of moderately well drained, very deep sandy loams derived from granitic alluvium; found on alluvial fans and flood plains.
Yorba cobbly sandy loam	Typic Haploxeralfs	9-30% slopes, eroded and 30-50% slopes, eroded; consists of well drained soils on terraces formed in gravelly sandy sediment; severely eroded.

Of the soil types identified in the table above, only the Pit Soil Unit may be hydric as listed in the SCS's publication, Hydric Soils of the United States[4]. Hydric soils are those that are "...wet long enough to periodically produce anaerobic conditions, thereby influencing plant growth[5]." Thus the presence of a hydric soil may be a significant indicator of the presence of wetlands.

[4] United States Department of Agriculture, Soil Conservation Service. 1991. Hydric Soils of the United States, 3rd Edition, Miscellaneous Publication Number 1491. (In cooperation with the National Technical Committee for Hydric Soils.)

[5] Tiner. R.W. 1999. Wetland Indicators: *A Guide to Wetland Identification, Delineation, Classification and Mapping.* Lewis Publishers: Boca Raton, Florida.

Additionally, riverwash, pits, tidal flats, Carlsbad gravelly loamy sand within depressions and sloughs, Corralitos loamy sand within floodplain channels, Las Flores loamy fine sands within depressions, steep gullied land within depressions, Tujunga sands within intermittent streams and floodplains, Visalia series within flood plains and Myford sandy loam within depressions may be hydric as listed in the County of Orange and the County of San Diego local lists of hydric soils.

3.0 JURISDICTION

3.1 ARMY CORPS OF ENGINEERS

Pursuant to Section 404 of the Clean Water Act, the Corps regulates the discharge of dredged and/or fill material into waters of the United States. The term "waters of the United States" is defined in Corps regulations at 33 CFR Part 328.3(a) as:

> *(1) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;*
> *(2) All interstate waters including interstate wetlands;*
> *(3) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters:*
> *(i) Which are or could be used by interstate or foreign travelers for recreational or other purposes; or*
> *(ii) From which fish or shell fish are or could be taken and sold in interstate or foreign commerce; or*
> *(iii) Which are used or could be used for industrial purpose by industries in interstate commerce.;*
> *(4) All impoundments of waters otherwise defined as waters of the United States under the definition;*
> *(5) Tributaries of waters identified in paragraphs (a) (1)-(4) of this section;*
> *(6) The territorial seas;*
> *(7) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) (1)-(6) of this section.*

In the absence of wetlands, the limits of Corps jurisdiction in non-tidal waters, such as intermittent streams, extend to the ordinary high water mark (OHWM) which is defined at 33 CFR 328.3(e) as:

> *...that line on the shore established by the fluctuation of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.*

The term "wetlands" (a subset of "waters of the United States") is defined at 33 CFR 328.3(b) as "...those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support...a prevalence of vegetation typically adapted for life in saturated

soil conditions." In 1987, the Corps published a manual to guide its field personnel in determining jurisdictional wetland boundaries. The methodology set forth in the Army Corps of Engineers 1987 Wetland Delineation Manual generally requires that, in order to be considered a wetland, the vegetation, soils, and hydrology of an area exhibit at least minimal hydric characteristics[1]. While the Wetland Manual provides great detail in methodology and allows for varying special conditions, a wetland should normally meet each of the following three criteria:

- more than 50 percent of the dominant plant species at the site must be typical of wetlands (i.e., rated as facultative or wetter in the National List of Plant Species that Occur in Wetlands[2]);
- soils must exhibit physical and/or chemical characteristics indicative of permanent or periodic saturation (e.g., a gleyed color, or mottles with a matrix of low chroma indicating a relatively consistent fluctuation between aerobic and anaerobic conditions); and
- hydrologic characteristics must indicate that the ground is saturated to within 12 inches of the surface for at least five percent of the growing season during a normal rainfall year[3].

3.1.1 DETERMINATION OF CORPS JURISDICTIONAL WETLAND LIMITS

During the field studies, suspected jurisdictional areas were field checked for the presence of definable channels and/or wetland vegetation, soils and hydrology. Suspected wetland habitats within the areas evaluated for each alignment were evaluated using the methodology set forth in the Wetland Manual. While in the field the limits for each jurisdictional wetland area were recorded onto a 400-scale color aerial photograph using visible landmarks. Other data were recorded onto wetland data sheets that correspond to the location of soil pits/observation points where presence/absence of indicators for hydrophytic vegetation, wetland hydrology and hydric soils were evaluated. The location of soil pits/observation points was determined in the field at the time of the delineation and was dictated by site-specific conditions. For essentially all of the wetlands evaluated, the boundary between wetland and upland was marked by distinct boundaries, usually related to abrupt changes in topography or vegetation. In most instances,

[1] Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1, U.S. Army Engineer Waterways Experimental Station, Vicksburg, Mississippi.

[2] Reed, P.B., Jr. 1988. National List of Plant Species that Occur in Wetlands. United States Fish and Wildlife Service Biological Report 88(26.10).

[3] Average rainfall in southern Orange County is approximately 13 inches per year. Rainfall during 2000-2001 averaged 14.17 inches or 109% percent of normal. This number represents an average. No attempt was made to characterize the local variation within rainfall that exists over a project of this size and geographic complexity. While the majority of the project lies in south Orange County, in areas where the project extends into north San Diego County the geographic setting is similar enough to consider this estimate of rainfall as adequate for providing a general context in which the delineation was conducted. For most of low-lying southern California, five percent of the growing season is equivalent to 18 days.

these abrupt changes made it possible to locate a clear and distinct wetland boundary without digging numerous soil pits. Where the anticipated disturbance limits affected only portions of a wetland, the soil pits/observation points were concentrated in areas of potential impacts as indicted by the disturbance limits. For example, soil pits/observation points associated with the wetland adjacent to Tesoro High School (FE/C/7 Wetland[4]) were concentrated along the eastern boundary of the wetland as the western boundary is well removed from the proposed disturbance limits.

A number of sources were used to determine the locations for potential wetland areas, including the 1995/1996 MBA Delineation, aerial photography, topographic maps, soil surveys, and ponding data collected during wet-season fairy shrimp surveys conducted in 1996, 1997, and 2001[5]. Depressional wetlands, such as vernal pools, are defined by the 1987 Manual as "Problem Areas" because various indicators for wetland vegetation and/or hydrology may be absent during summer or fall or completely absent during years of below-average rainfall. Although such areas were not formally delineated during the period of ponding when the wet-season fairy shrimp surveys were performed, the data collected during these surveys was used to augment the delineation data thereby providing for hydrological data not available during the July – September window during which the 2001 delineation was performed.

3.1.2 DETERMINATION OF LIMITS FOR OHWM

For non-wetland waters, including perennial, intermittent, or ephemeral streams, the extent of Corps jurisdiction was determined by the outermost location of attributes used by the Corps to define the presence of an OHWM. As noted above, the following physical characteristics were evaluated in the field: 1) clear, natural line impressed on the bank, 2) shelving, 3) changes in the character of soil, 4) destruction of terrestrial vegetation, 5) the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

For each drainage feature evaluated, the outermost location of any of the above-noted attributes was identified in the field and a width measurement was recorded that captured the outermost attributes (for example, where the presence of litter and debris was noted beyond the line where shelving or terracing was evident within the drainage course, the limits of the litter and debris was used to establish the width of the OHWM). As each drainage feature was traversed, width measurements were recorded where changes in the width of the OHWM were noted (for example, where the limits of the OHWM expanded from eight feet to 12 feet, a measurement was recorded, where the limits receded from 12 feet back to eight feet, another measurement was recorded). In this manner, the full range of widths associated with each jurisdictional drainage was captured and recorded.

[4] Please see Exhibits 1 and 2 for the location of this feature.
[5] Data was collected in part by Tony Bomkamp with GLA

3.1.3 DETERMINATION OF ISOLATED WATERS PURSUANT TO *SWANCC* DECISION

Pursuant to Article I, Section 8 of the United States Constitution, federal regulatory authority extends only to activities that affect interstate commerce. In the early 1980s, the Corps interpreted the interstate commerce requirement in a manner that restricted Corps jurisdiction on isolated (intrastate) waters. On September 12, 1985, the United States Environmental Protection Agency (EPA) asserted that Corps' jurisdiction extended to isolated waters that are used or could be used by migratory birds or endangered species, and the definition of "waters of the United States" in Corps regulations was modified as quoted above from 33 CFR 328.3(a).

On January 9, 2001, the Supreme Court of the United States issued a ruling on *Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers, et al.*, 531 U.S. 159 (2001) (SWANCC). In this case, the Court held that use of an isolated, intrastate pond by migratory birds is not a sufficient interstate commerce connection to bring the pond into federal jurisdiction under Section 404 of the Clean Water Act.

The Court notes that its previous support of the Corps' jurisdiction beyond navigable waters (*United States v. Riverside Bayview Homes, Inc.*, 474 U.S. 121 (1985)) was for a wetland that abutted a navigable water and that the Court had declined to express any opinion on the question of the authority of the Corps to regulate wetlands that are not adjacent to bodies of open water.

The opinion goes on to state:

> *In order to rule for the respondents here, we would have to hold that the jurisdiction of the Corps extends to ponds that are not adjacent to open water. We conclude that the text of the statute will not allow this.*

Therefore, GLA believes that the Court's opinion goes beyond the migratory bird issue and means that no isolated, intrastate water is subject to the provisions of Section 404(a) of the Clean Water Act (regardless of any interstate commerce connection). However, case law on the precise scope of federal/CWA jurisdiction in light of *SWANCC* is still developing.
On January 15, 2003, the general counsels for EPA and the Corps issued a joint memorandum, Appendix A to the Advance Notice of Proposed Rulemaking, 68 Fed. Reg. 1991[6], providing clarifying guidance regarding the SWANNC decision and the agencies' position on CWA jurisdiction in light of the subsequent case law interpreting SWANNC.

The memorandum states that, in view of the SWANNC decision, the agencies will not assert CWA jurisdiction over isolated waters that are both intrastate and non-navigable if the sole basis for asserting such jurisdiction is any of the factors listed in the Migratory Bird Rule, i.e. use of

[6] The EPA and the Corps have since withdrawn the proposed rulemaking (Dec. 16, 2003), but the joint memorandum continues in effect.

the water as habitat by migratory birds, use of the water by federally listed endangered or threatened species, or use of the water to irrigate crops sold in interstate commerce.

The memorandum also advises field staff to seek formal, project-specific approval from Corps Headquarters prior to asserting jurisdiction over isolated, intrastate, non-navigable waters based solely on the other interstate Commerce Clause grounds set forth in 33 C.F.R § 328.3(a)(3)(i)-(iii), i.e. use of water by interstate or foreign travelers for recreation of other purposes, the presence of fish or shellfish that could be taken and sold in interstate commerce, and the use of the water for industrial purposes by industries in interstate commerce.

For purposes of making a jurisdictional determination, relative to Corps jurisdiction, for isolated waters, the following guidelines were used (detailed discussions are provided in descriptions of drainage features that were determined to be isolated in the text below):

- Vernal Pools and Seeps exhibiting wetland vegetation, soils, and hydrology not adjacent to jurisdictional drainages or other jurisdiction waters were determined to be isolated and not subject to Corps jurisdiction.

- Drainage features that lack a clear surface tributary connection to other waters of the U.S. were considered to be isolated. This is consistent with the Corps' discussion regarding the jurisdictional status of ephemeral streams provided in the Preamble to the nationwide permits issued on March 9, 2000:

  We agree that ephemeral streams that are tributary to other waters of the United States are also waters of the United States, as long as they possess an OHWM. The upstream limit of waters of the United States is the point where the OHWM is no longer perceptible (see 51 FR 41217). Ephemeral streams that are part of an interstate surface tributary system are waters of the United States because they are an integral part of that surface tributary system, which supports interstate commerce.[7]

Therefore, where a surface tributary connection, as indicated by the presence of an OHWM between an ephemeral drainage feature and other waters of the United States is lacking, the ephemeral drainage feature is not part of the surface tributary system and is not subject to Corps jurisdiction.

3.2 REGULATION OF ISOLATED FEATURES

Jurisdiction over isolated features has not been determined.

[7] Federal Register / Vol. 65, No. 47 / Thursday, March 9, 2000, Page 12823.

3.3 CALIFORNIA DEPARTMENT OF FISH AND GAME

Pursuant to Division 2, Chapter 6, Sections 1600-1603 of the California Fish and Game Code, the CDFG regulates all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake which supports fish or wildlife.

CDFG defines a "stream" (including creeks and rivers) as "...a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having surface or subsurface flow that supports or has supported riparian vegetation." CDFG's definition of "lake" includes "natural lakes or man-made reservoirs."[8]

CDFG jurisdiction within altered or artificial waterways is based upon the value of those waterways to fish and wildlife. CDFG Legal Advisor has prepared the following opinion:

- Natural waterways that have been subsequently modified and which have the potential to contain fish, aquatic insects and riparian vegetation will be treated like natural waterways...
- Artificial waterways that have acquired the physical attributes of natural stream courses and which have been viewed by the community as natural stream courses, should be treated by [CDFG] as natural waterways...
- Artificial waterways without the attributes of natural waterways should generally not be subject to Fish and Game Code provisions...[9]

Based on written regulatory guidance published by CDFG (Administrative Report No. 92-1) and verifications conducted with CDFG personnel in the field on a variety of projects, a number of factors were considered/evaluated in determining the limits of vegetation associations that would be regulated by CDFG as "riparian habitat" that would be considered as part of the "streambed." Specific resources used to aid in the identification and delineation of vegetation defined as "riparian" include the following: *National List of Plant Species that Occur in Wetlands* (Reed, 1988)[10], *A Manual of California Vegetation* (Sawyer and Keeler-Wolfe, 1996)[11], *California*

[8] Department of Fish and Game. 1992. A Field Guide to Lake and Streambed Alteration Agreements. Department of Fish and Game Environmental Services Division: Administrative Report No. 92-1.
[9] October 17, 1998. Letter from Eugene V. Toffoli of CDFG re: Departmental Jurisdiction Over Waterways.
[10] Reed, P.B., Jr. 1988. National List of Plant Species that Occur in Wetlands. United States Fish and Wildlife Service Biological Report 88(26.10).

[11] Sawyer, John, O. and Todd Keeler-Wolfe. 1995. *A Manual of California Vegetation*. California Native Plant Society, Sacramento.

Riparian Systems (Warner and Hendrix, 1984)[12] and *Preliminary Descriptions of Terrestrial Communities* (Holland 1986).[13]

Reed (1988) provides an indicator status for plants that occur in wetlands. Obligate Wetland species (OBL) are defined as species that occur in wetlands 99-percent of the time. Obligate Upland species (UPL) occur in uplands 99-percent of the time. Species between OBL and UPL include Facultative Wet (FACW), that are associated with wetlands 67- to 99-percent of the time with Facultative (FAC) species associated with wetlands 33- to 67-percent of the time. While the Reed list is useful, it must be used in concert with the other references noted, particularly for species rated as facultative. The list is subject to ongoing revisions a more data become available on hydrophytic and non-hydrophytic species. During the field-level delineation, species considered to be "riparian" in all cases but one, coast live oak, exhibited an indicator status of FAC, FACW or OBL. Dominant species identified as components of accepted riparian associations included black willow (*Salix 1602*, OBL), arroyo willow (*Salix lasiolepis*, FACW), yellow willow (*Salix lucida*, OBL), Fremont cottonwood (*Populus fremontii*, FACW), black cottonwood (*Populus trichocarpa balsamifera*, FACW), western sycamore (*Platanus racemosa*, FACW), and mulefat (*Baccharis salicifolia*, FACW). Coast live oak (*Quercus agrifolia*, UPL), as noted above is the only upland species that is typically included as a dominant riparian species.

Use of the wetland indicator status provided in Reed (1988), as a useful tool for separating "riparian" from "upland" species is supported by an understanding of the origins of riparian systems in areas governed by a Mediterranean climatic regime. The dominant tree and shrub species that occur along perennial and intermittent streams are recognized remnants of the Arcto-Tertiary Geoflora of the Late Tertiary and Quaternary Periods that included wet climates, explaining their high demands for water.[14] In areas now dominated by the drier Mediterranean climate, these species persist in areas where there is a permanent or seasonal surface or subsurface water supply. The dominant genera in southern California include: willow (*Salix*, spp.), cottonwood (*Populus* spp.), alder (*Alnus rhombifolia*), sycamore (*Platanus racemosa*), maple (*Acer* spp.), ash (*Fraxinus* spp.), and in some settings, oak (*Quercus* spp.).[15] The hydrologic requirements for many of these genera differ and are generally well known. For example, well-aerated water that is close to the surface will favor alder whereas when the water table is relatively deep, sycamores will predominate as long as the intervening soil aeration is high. Direct measurements of water use by red willow documented water-use rates at 52.7 acre-

[12] Warner, Richard E. and Kathleen M. Hendrix. 1984. *California Riparian Systems*. University of California Press, Berkeley.
[13] Holland, Robert F. 1986. *Preliminary Descriptions of the Terrestrial Natural Communities of California*. California Department of Fish and Game, Sacramento.
[14] Holstein, Glen. 1984. California Riparian Forests: Deciduous Islands in an Evergreen Sea. In: Warner and Hendrix (Eds). *California Riparian Systems: Ecology Conservation, and Productive Management*. University of California Press, Berkeley.
[15] Holstein, Glen. 1984. California Riparian Forests: Deciduous Islands in an Evergreen Sea. In: Warner and Hendrix (Eds). *California Riparian Systems: Ecology Conservation, and Productive Management*. University of California Press, Berkeley.

inches per year with alder-dominated habitat using 47.0 acre inches of water during the peak growing season (July to October).[16]

The methodology described here incorporates the wetland indicator status for each species as provided by Reed (1988), with the hydrologic requirements and historical classification as noted above. The methodology for defining the dimensions of riparian habitat in the field is summarized as follows:

- Designation of an area as "riparian habitat" was generally limited to stands of vegetation that included a predominance of species that exhibited an indicator status of FAC, FACW or OBL. (Coast live oaks were included as riparian habitat in specific instances as further described/discussed below)

- Where all riparian habitat was included within the bank-full stream channel (e.g., riparian herb), the outermost limits of either the bank or riparian habitat was mapped as the limits of CDFG riparian jurisdiction/habitat.

- Where riparian habitat extended beyond the bank-full channel to the active floodplain, and did not extend outside the active floodplain, the outermost limits of either the active floodplain or riparian habitat was mapped as the limits of CDFG riparian jurisdiction/habitat. By inclusion of the active flood plain and associated riparian habitat, the hydrologic, biogeochemical, and habitat functions not specifically associated with riparian vegetation, such as areas with localized ponding that support aquatic organisms (e.g., invertebrates, amphibians, etc.), but providing such hydrologic, biogeochemical and habitat functions, were captured and included within the jurisdictional area(s).

- Where riparian habitat extended beyond the active flood plain to active terraces, the outermost limits of the riparian habitat on the terrace (i.e., canopy edge or "drip line") was mapped as the limits of CDFG riparian jurisdiction/habitat. Similar to inclusion of the flood plain described above, inclusion of the active terraces ensured that functions such as hydrologic exchange with the adjacent uplands, nutrient cycling, shading by overhanging vegetation, bank and channel stabilization by roots, as well as habitat functions were included in the jurisdictional area(s).

  This latter case (i.e., channel stabilization by roots) was most typically applied to southern coast live oak riparian forest. In some cases, particularly in "U"-shaped canyons, the limits of the active terrace were not always discernible. In such cases, coast live oaks were included as riparian where they either (1) exhibited roots that reached the banks of the drainage, thereby, benefiting from the drainage or by providing stabilization for the banks (i.e., a benefit for the stream) or (2) where meaningful portions of the canopy overhung the stream, thereby providing for shading or litter (nutrient cycling) which

[16] State of California Department of Public Works. 1942. *Bulletin No. 50: Use of Water by Native Vegetation.*

would benefit the stream. Coast live oaks located above active terraces or (where terraces were not distinct) beyond where either roots or shading provided direct benefits to the stream, or that supported a predominance of UPL vegetation were not included as CDFG-regulated riparian vegetation.

Thus, CDFG jurisdictional limits closely mirror those of the Corps. Exceptions are CDFG's exclusion of isolated wetlands (those not associated with a river, stream, or lake), the addition of artificial stock ponds and irrigation ditches constructed on uplands, and the addition of riparian habitat supported by a river, stream, or lake regardless of the riparian area's federal wetland status.

3.4 CALIFORNIA COASTAL COMMISSION

The California Coastal Act of 1976 (California Public Resources Code Section 30000 et. Seq.) restricts land uses within or adjacent to environmentally sensitive habitat areas (ESHAs). The Coastal Act Section 30107.5 defines an ESHA as:

> *...any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments.*

Included within this definition are wetlands, estuaries, streams, riparian habitats, lakes, and portions of open coastal waters which meet the rare or valuable habitat criteria.

The CCC regulates the diking, filling, or dredging of wetlands within the coastal zone. The Coastal Act Section 30121 defines "wetland" as lands "*...within the coastal zone which may be covered periodically or permanently with shallow water...*" The 1981 CCC Statewide Interpretive Guidelines state that hydric soils and hydrophytic vegetation "*...are useful indicators of wetland conditions, but the presence or absence of hydric soils and/or hydrophytes alone are not necessarily determinative when the Commission identifies wetlands under the Coastal Act. In the past, the Commission has considered all relevant information in making such determinations and relied upon the advice and judgment of experts before reaching its own independent conclusion as to whether a particular area will be considered wetland under the Coastal Act. The Commission intends to continue to follow this policy.*"

The 1981 CCC Statewide Interpretive Guidelines define riparian habitats as areas of riparian vegetation. Riparian vegetation is defined as "*...an association of plant species which grows adjacent to freshwater watercourses, including perennial and intermittent streams, lakes, and other bodies of fresh water.*" Riparian habitats may encompass wetland areas, but may also extend beyond those areas.

4.0 RESULTS

As mentioned in the introduction, jurisdictional totals for the study areas, which extend from 200 to 1000 feet beyond the disturbance limits of each alignment, are included in Appendix A along with detailed drainage descriptions. Also as mentioned in the introduction, the impact analysis below addresses both initial and ultimate disturbance limits, although at this time permits are being sought only for the initial disturbance limits. The ultimate disturbance limits have been provided to address potential cumulative impacts. Impact totals represent only the surface area subject to regulation by the various agencies and do not represent a relative assessment of function. This analysis assumes that all drainages within the disturbance limits are permanently filled, except for those that will be bridged. For bridges, the small area of impact where the support columns are founded into the ground have been included as permanent impacts, while the remaining bridge right of way is assumed to be temporarily impacted for piling installation although the bridge structure will span over the open terrain. Although the other reaches will be filled, cross-culverts will be installed at the majority of drainages allowing for the retention of significant hydrologic function.

It should also be noted that many of the alternatives share common segments and, thus, have identical impacts along these shared segments. It is important, therefore, to recognize that areas of jurisdictional impact identified along one alternative may be common to multiple alternatives. In addition, the Corps, CDFG, and CCC regulate many of the same features, therefore, jurisdictional impact totals for the various agencies do overlap and should not be considered mutually exclusive.

4.1 ARTERIAL IMPROVEMENTS ONLY

The Arterial Improvements Only (AIO) Alternative was evaluated using the planning-level WES data[1]. TCA acknowledges that this alternative impacts fewer aquatic resources than the alternatives for which the project-level delineation was completed. With concurrence from Corps, the planning level WES delineation was determined to be adequate for evaluation. See Table 4.2-1 below for a summary of the relative planning-level impacts. Unlike the project-level analysis for the other alternatives addressed below, these planning-level impacts for the AIO did not take bridging into account.

[1] Smith, R. D. 2003. Potential Impacts of Alternative Transportation Corridors on Waters of the United States and Riparian Ecosystems for the Southern Orange County Transportation Infrastructure Improvement Project. U.S. Army Engineer Research and Development Center, Waterways Experiment Station, Vicksburg, MS.

4.2 INTERSTATE 5 WIDENING

The Interstate 5 Widening (I5) Alternative was also evaluated using the planning-level WES data. TCA acknowledges that this alternative also impacts fewer aquatic resources than the alternatives for which the project-level delineation was completed. With concurrence from Corps, the planning level WES delineation was determined to be adequate for evaluation. See Table 4.2-1 below for a summary of the relative planning-level impacts. Unlike the project-level analysis for the other alternatives addressed below, these planning-level impacts for the I-5 widening did not take bridging into account.

Table 4.2-1 Summary Of Impacts Resulting From The Planning-Level Impact Analysis

Alternative	Acres Of Riparian Impact	Total Miles Of "Waters Of The U.S." Impacted
AIO	9.2	3.7
I5	13.7	3.0

4.3 CENTRAL CORRIDOR – COMPLETE IMPACT TOTALS

Impact analysis results for both the initial and ultimate disturbance limits are described below and are summarized in Tables 4.3.1-1, 4.3.1-2, 4.3.2-1 and 4.3.2-2.

4.3.1 CENTRAL CORRIDOR – COMPLETE –INITIAL ALTERNATIVE IMPACT TOTALS

The following impacts are based upon the CC-Initial Alternative disturbance limits. Permanent impacts are summarized in Table 4.3.1-1. Temporary impacts are summarized in Table 4.3.1-2.

The CC – Initial Alternative will permanently impact approximately 14.87 acres subject to Corps jurisdiction. This total consists of 13.40 acres of wetland and 1.47 acres of non-wetland waters.

The CC – Initial Alternative will temporarily impact approximately 12.10 acres subject to Corps jurisdiction. This total consists of 1.58 acres of wetland and 10.52 acres of non-wetland waters.

The CC – Initial Alternative will permanently impact approximately 18.23 acres subject to CDFG jurisdiction. This total consists of 17.20 acres of vegetated riparian habitat and 1.03 acres of unvegetated streambed.

The CC – Initial Alternative will temporarily impact approximately 12.74 acres subject to CDFG jurisdiction all of which consists of vegetated riparian habitat.

The CC – Initial Alternative will permanently impact approximately 0.02 acres subject to CCC jurisdiction. This total all consists of areas that qualify as CCC wetlands based on the presence of one parameter out of three possible parameters (soils, hydrology, plants).
There are no temporary impacts to CCC jurisdiction associated with the CC – Initial Alternative.

TABLE 4.3.1-1
PERMANENT JURISDICTIONAL IMPACTS
CENTRAL CORRIDOR COMPLETE – INITIAL ALTERNATIVE
(in acres)

		Corps[2]			CDFG		
Jurisdictional Feature[1]	**Resource Type**	**Wetlands**	**Non-wetland Waters**	**Total**	**Vegetated**	**Unvegetated Streambed**	**Total**
FE/C/7-WETLAND 1[3]	Perennial	0.00	0.00	0.00	0.00	0.00	0.00
FE/C/7-1	Ephemeral	0.00	0.05	0.05	0.19	0.05	0.24
CANADA CHIQUITA	Perennial	6.77	0.04	6.81	9.22	0.00	9.22
C-WETLAND 1	Slope Wetland	NA	NA	NA	NA	NA	NA
C-WETLAND 2	Slope Wetland	0.09	0.00	0.09	NA	NA	NA
C-2	Ephemeral	NA	NA	NA	0.34	0.01	0.35
C-3	Ephemeral	NA	NA	NA	0.35	0.10	0.45
C-4	Ephemeral	NA	NA	NA	0.00	0.04	0.04
C-5	Ephemeral/ Slope Wetland	0.03	0.00	0.03	0.03	0.00	0.03
C-SAN JUAN CREEK	Intermittent	0.28	0.25	0.53	0.53	0.00	0.53
C-7	Ephemeral	0.02	0.04	0.06	0.05	0.03	0.08
C-8	Ephemeral	0.00	0.12	0.12	0.00	0.12	0.12
C-9	Ephemeral	0.00	0.27	0.27	0.00	0.27	0.27
C-10	Ephemeral	0.00	0.05	0.05	0.00	0.05	0.05
C-11	Ephemeral	0.39	0.01	0.40	0.39	0.01	0.40
C-12	Ephemeral	0.13	0.14	0.27	0.13	0.14	0.27
C-13	Ephemeral	0.01	0.00	0.01	0.01	0.00	0.01
C-14	Ephemeral	0.00	0.21	0.21	0.00	0.21	0.21
SEGUNDA DESHECHA	Perennial	5.66	0.28	5.94	5.93	0.00	5.93
FE/7 SAN MATEO CREEK[4]	Perennial	0.02	0.00	0.02	0.02	0.00	0.02
TOTAL	**NA**	**13.40**	**1.47**	**14.87**	**17.20**	**1.03**	**18.23**

[1] These features are depicted on Exhibits 1 and 2.
[2] Refer to Appendix B for isolated features totals

[3] Actual grading limits impact 6.08 acres of FE/C/7-Wetland 1. However, based upon refinements to A7C-FEC-M, FEC-W and FEC-M, it is assumed that these impacts could ultimately be avoided.

[4] Feature subject to CCC jurisdiction.

TABLE 4.3.1-2
TEMPORARY JURISDICTIONAL IMPACTS
CENTRAL CORRIDOR COMPLETE – INITIAL ALTERNATIVE
(in acres)

		Corps			CDFG		
Jurisdictional Feature[1]	**Resource Type**	**Wetlands**	**Non-wetland Waters**	**Total**	**Vegetated**	**Unvegetated Streambed**	**Total**
C-SAN JUAN CREEK	Intermittent	1.58	10.52	12.10	12.74	0.00	12.74
TOTAL	**NA**	**1.58**	**10.52**	**12.10**	**12.74**	**0.00**	**12.74**

[1] These features are depicted on Exhibits 1 and 2.

4.3.2 CENTRAL CORRIDOR – COMPLETE – ULTIMATE ALTERNATIVE IMPACT TOTALS

The following impacts are based upon the CC-Ultimate Alternative disturbance limits. Permanent impacts are summarized in Table 4.3.2-1. Temporary impacts are summarized in Table 4.3.2-2.

The CC – Ultimate Alternative will permanently impact approximately 15.08 acres subject to Corps jurisdiction. This total consists of 13.57 acres of wetland and 1.51 acres of non-wetland waters.

The CC – Ultimate Alternative will temporarily impact approximately 12.65 acres subject to Corps jurisdiction. This total consists of 1.65 acres of wetland and 11.00 acres of non-wetland waters.

The CC – Ultimate Alternative will permanently impact approximately 19.20 acres subject to CDFG jurisdiction. This total consists of 18.14 acres of vegetated riparian habitat and 1.06 acres of unvegetated streambed.

The CC – Ultimate Alternative will temporarily impact approximately 13.65 acres subject to CDFG jurisdiction all of which consists of vegetated riparian habitat.

There are no permanent or temporary impacts to CCC jurisdiction associated with the CC – Ultimate Alternative.

TABLE 4.3.2-1
PERMANENT JURISDICTIONAL IMPACTS
CENTRAL CORRIDOR – COMPLETE – ULTIMATE ALTERNATIVE
(in acres)

		Corps[2]			CDFG		
Jurisdictional Feature[1]	**Resource Type**	**Wetlands**	**Non-wetland Waters**	**Total**	**Vegetated**	**Unvegetated Streambed**	**Total**
FE/C/7-WETLAND 1[3]	Perennial	0.00	0.00	0.00	0.00	0.00	0.00
FE/C/7-1	Ephemeral	0.00	0.06	0.06	0.45	0.04	0.49
FE/C/7-2	Ephemeral	NA	NA	NA	0.00	0.002	0.002
CANADA CHIQUITA	Perennial	6.88	0.06	6.94	9.87	0.00	9.87
C-WETLAND 1	Slope Wetland	NA	NA	NA	NA	NA	NA
C-WETLAND 2	Slope Wetland	0.09	0.00	0.09	NA	NA	NA
C-2	Ephemeral	NA	NA	NA	0.34	0.01	0.35
C-3	Ephemeral	NA	NA	NA	0.34	0.10	0.44
C-4	Ephemeral	NA	NA	NA	0.00	0.04	0.04
C-5	Ephemeral/ Slope Wetland	0.03	0.00	0.03	0.03	0.00	0.03
C-SAN JUAN CREEK	Intermittent	0.28	0.23	0.51	0.51	0.00	0.51
C-7	Ephemeral	0.02	0.04	0.06	0.05	0.03	0.08
C-8	Ephemeral	0.00	0.13	0.13	0.00	0.13	0.13
C-9	Ephemeral	0.00	0.27	0.27	0.00	0.27	0.27
C-10	Ephemeral	0.00	0.04	0.04	0.00	0.04	0.04
C-11	Ephemeral	0.39	0.01	0.40	0.39	0.01	0.40
C-12	Ephemeral	0.14	0.18	0.32	0.14	0.18	0.32
C-13	Ephemeral	0.02	0.00	0.02	0.02	0.00	0.02
C-14	Ephemeral	0.00	0.21	0.21	0.00	0.21	0.21
SEGUNDA DESHECHA	Perennial	5.70	0.28	5.98	5.98	0.00	5.98
FE/7 San Mateo Creek[4]	Perennial	0.02	0.00	0.02	0.02	0.00	0.02
TOTAL	**NA**	**13.57**	**1.51**	**15.08**	**18.14**	**1.06**	**19.20**

[1] These features are depicted on Exhibits 1 and 2.

[2] Refer to Appendix B for isolated features totals

[3] Actual grading limits impact 6.51 acres of FE/C/7-Wetland 1 – However, based upon refinements to A7C-FEC-M, FEC-W and FEC-M, it is assumed that these impacts could ultimately be avoided.

[4] Feature subject to CCC jurisdiction.

TABLE 4.3.2-2
TEMPORARY JURISDICTIONAL IMPACTS
CENTRAL CORRIDOR COMPLETE – ULTIMATE ALTERNATIVE
(in acres)

		Corps			CDFG		
Jurisdictional Feature[1]	**Resource Type**	**Wetlands**	**Non-wetland Waters**	**Total**	**Vegetated**	**Unvegetated Streambed**	**Total**
C-SAN JUAN CREEK	Intermittent	1.65	11.00	12.65	13.65	0.00	13.65
TOTAL	**NA**	**1.65**	**11.00**	**12.65**	**13.65**	**0.00**	**13.65**

[1] These features are depicted on Exhibits 1 and 2.

4.4 CENTRAL CORRIDOR – AVENIDA LA PATA VARIATION IMPACT TOTALS

Impact analysis results for both the initial and ultimate disturbance limits are described below and are summarized in Tables 4.4.1-1, 4.4.1-2, 4.4.2-1 and 4.4.2-2.

4.4.1 CENTRAL CORRIDOR – AVENIDA LA PATA VARIATION – INITIAL ALTERNATIVE IMPACT TOTALS

The following impacts are based upon the CC-ALPV-Initial Alternative disturbance limits. Permanent impacts are summarized in Table 4.4.1-1. Temporary impacts are summarized in Table 4.4.1-2.

The CC-ALPV-Initial Alternative will permanently impact approximately 12.38 acres subject to Corps jurisdiction. This total consists of 11.41 acres of wetland and 0.97 acre of non-wetland waters.

The CC-ALPV-Initial Alternative will temporarily impact approximately 12.10 acres subject to Corps jurisdiction. This total consists of 1.58 acres of wetland and 10.52 acre of non-wetland waters.

The CC-ALPV – Initial Alternative will permanently impact approximately 15.75 acres subject to CDFG jurisdiction. This total consists of 14.94 acres of vegetated riparian habitat and 0.81 acre of the unvegetated streambed.

The CC-ALPV – Initial Alternative will temporarily impact approximately 12.74 acres subject to CDFG jurisdiction all of which consists of vegetated riparian habitat.

There are no permanent or temporary impacts to CCC jurisdiction associated with the CC-ALPV – Initial Alternative.

TABLE 4.4.1-1
PERMANENT JURISDICTIONAL IMPACTS
CENTRAL CORRIDOR – AVENIDA LA PATA VARIATION – INITIAL ALTERNATIVE
(in acres)

		Corps[2]			CDFG		
Jurisdictional Feature[1]	**Resource Type**	**Wetlands**	**Non-wetland Waters**	**Total**	**Vegetated**	**Unvegetated Streambed**	**Total**
FE/C/7-WETLAND 1[3]	Perennial	0.00	0.00	0.00	0.00	0.00	0.00
FE/C/7-1	Ephemeral	0.00	0.05	0.05	0.19	0.05	0.24
CANADA CHIQUITA	Perennial	6.77	0.04	6.81	9.23	0.00	9.23
C-WETLAND 1	Slope Wetland	NA	NA	NA	NA	NA	NA
C-WETLAND 2	Slope Wetland	0.09	0.00	0.09	NA	NA	NA
C-2	Ephemeral	NA	NA	NA	0.34	0.01	0.35
C-3	Ephemeral	NA	NA	NA	0.35	0.10	0.45
C-4	Ephemeral	NA	NA	NA	0.00	0.04	0.04
C-5	Ephemeral/ Slope Wetland	0.03	0.00	0.03	0.03	0.00	0.03
C-SAN JUAN CREEK	Intermittent	0.28	0.25	0.53	0.53	0.00	0.53
C-7	Ephemeral	0.02	0.04	0.06	0.05	0.03	0.08
C-8	Ephemeral	0.00	0.12	0.12	0.00	0.12	0.12
C-9	Ephemeral	0.00	0.27	0.27	0.00	0.27	0.27
C-10	Ephemeral	0.00	0.05	0.05	0.00	0.04	0.04
C-11	Ephemeral	0.39	0.01	0.40	0.39	0.01	0.40
C-12	Ephemeral	0.13	0.14	0.27	0.13	0.14	0.27
C-13	Ephemeral	0.01	0.00	0.01	0.01	0.00	0.01
SEGUNDA DESHECHA	Perennial	3.69	0.00	3.69	3.69	0.00	3.69
TOTAL	**NA**	**11.41**	**0.97**	**12.38**	**14.94**	**0.81**	**15.75**

[1] These features are depicted on Exhibits 1 and 2.

[2] Refer to Appendix B for isolated features totals

[3] Actual grading limits impact 6.08 acres of FE/C/7-Wetland 1 – However, based upon refinements to A7C-FEC-M, FEC-W and FEC-M, it is assumed that these impacts could ultimately be avoided.

TABLE 4.4.1-2
TEMPORARY JURISDICTIONAL IMPACTS
CENTRAL CORRIDOR – AVENIDA LA PATA VARIATION – INITIAL ALTERNATIVE
(in acres)

		Corps			CDFG		
Jurisdictional Feature[1]	**Resource Type**	**Wetlands**	**Non-wetland Waters**	**Total**	**Vegetated**	**Unvegetated Streambed**	**Total**
C-SAN JUAN CREEK	Intermittent	1.58	10.52	12.10	12.74	0.00	12.74
TOTAL	**NA**	**1.58**	**10.52**	**12.10**	**12.74**	**0.00**	**12.74**

[1] These features are depicted on Exhibits 1 and 2.

4.4.2 CENTRAL CORRIDOR – AVENIDA LA PATA VARIATION – ULTIMATE ALTERNATIVE IMPACT TOTALS

The following impacts are based upon the CC-ALPV-Ultimate Alternative disturbance limits. Permanent impacts are summarized in Table 4.4.2-1. Temporary impacts are summarized in Table 4.4.2-2.

The CC-ALPV – Ultimate Alternative will permanently impact approximately 13.39 acres subject to Corps jurisdiction. This total consists of 12.38 acres of wetland and 1.01 acres of non-wetland waters.

The CC-ALPV – Ultimate Alternative will temporarily impact approximately 12.65 acres subject to Corps jurisdiction. This total consists of 1.65 acres of wetland and 11.00 acres of non-wetland waters.

The CC-ALPV – Ultimate Alternative will permanently impact approximately 17.51 acres subject to CDFG jurisdiction. This total consists of 16.66 acres of vegetated riparian habitat and 0.85 acre of unvegetated streambed.

The CC-ALPV – Ultimate Alternative will temporarily impact approximately 13.65 acres subject to CDFG jurisdiction all of which consists of vegetated riparian habitat.

There are no permanent or temporary impacts to CCC jurisdiction associated with the CC-ALPV – Ultimate Alternative.

TABLE 4.4.2-1
PERMANENT JURISDICTIONAL IMPACTS
CENTRAL CORRIDOR - AVENIDA LA PATA VARIATION – ULTIMATE ALTERNATIVE
(in acres)

		Corps[2]			CDFG		
Jurisdictional Feature[1]	**Resource Type**	**Wetlands**	**Non-wetland Waters**	**Total**	**Vegetated**	**Unvegetated Streambed**	**Total**
FE/C/7-WETLAND 1[3]	Perennial	0.00	0.00	0.00	0.00	0.00	0.00
FE/C/7-1	Ephemeral	0.00	0.06	0.06	0.45	0.04	0.49
FE/C/7-2	Ephemeral	NA	NA	NA	0.00	0.002	0.002
CANADA CHIQUITA	Perennial	6.88	0.06	6.94	9.87	0.00	9.87
C-WETLAND 1	Slope Wetland	NA	NA	NA	NA	NA	NA
C-WETLAND 2	Slope Wetland	0.09	0.00	0.09	NA	NA	NA
C-2	Ephemeral	NA	NA	NA	0.34	0.01	0.35
C-3	Ephemeral	NA	NA	NA	0.34	0.10	0.44
C-4	Ephemeral	NA	NA	NA	0.00	0.04	0.04
C-5	Ephemeral/ Slope Wetland	0.03	0.00	0.03	0.03	0.00	0.03
C-SAN JUAN CREEK	Intermittent	0.23	0.22	0.45	0.45	0.00	0.45
C-7	Ephemeral	0.02	0.04	0.06	0.05	0.03	0.08
C-8	Ephemeral	0.00	0.13	0.13	0.00	0.13	0.13
C-9	Ephemeral	0.00	0.27	0.27	0.00	0.27	0.27
C-10	Ephemeral	0.00	0.04	0.04	0.00	0.04	0.04
C-11	Ephemeral	0.39	0.01	0.40	0.39	0.01	0.40
C-12	Ephemeral	0.14	0.18	0.32	0.14	0.18	0.32
C-13	Ephemeral	0.02	0.00	0.02	0.02	0.00	0.02
SEGUNDA DESHECHA	Perennial	4.58	0.00	4.58	4.58	0.00	4.58
TOTAL	**NA**	**12.38**	**1.01**	**13.39**	**16.66**	**0.85**	**17.51**

[1] These features are depicted on Exhibits 1 and 2.
[2] Refer to Appendix B for isolated features totals
[3] Actual grading limits impact 6.51 acres of FE/C/7-Wetland 1 – However, based upon refinements to A7C-FEC-M, FEC-W and FEC-M, it is assumed that these impacts could ultimately be avoided.

TABLE 4.4.2-2
TEMPORARY JURISDICTIONAL IMPACTS
CENTRAL CORRIDOR – AVENIDA LA PATA VARIATION – ULTIMATE ALTERNATIVE
(in acres)

		Corps			CDFG		
Jurisdictional Feature[1]	**Resource Type**	**Wetlands**	**Non-wetland Waters**	**Total**	**Vegetated**	**Unvegetated Streambed**	**Total**
C-SAN JUAN CREEK	Intermittent	1.65	11.00	12.65	13.65	0.00	13.65
TOTAL	**NA**	**1.65**	**11.00**	**12.65**	**13.65**	**0.00**	**13.65**

[1] These features are depicted on Exhibits 1 and 2.

4.5 ALIGNMENT 7 CORRIDOR – AVENIDA LA PATA VARIATION IMPACT TOTALS

Impact analysis results for both the initial and ultimate disturbance limits are described below and are summarized in Tables 4.5.1-1, 4.5.1-2, 4.5.2-1 and 4.5.2-2.

4.5.1 ALIGNMENT 7 CORRIDOR – AVENIDA LA PATA VARIATION – INITITAL ALTERNATIVE IMPACT TOTALS

The following impacts are based upon the A7C-ALPV-Initial Alternative disturbance limits. Permanent impacts are summarized in Table 4.5.1-1. Temporary impacts are summarized in Table 4.5.1-2.

The A7C – ALPV - Initial Alternative will permanently impact approximately 2.52 acres subject to Corps jurisdiction. This total consists of 0.56 acre of wetland and 1.96 acres of non-wetland waters.

The A7C – ALPV - Initial Alternative will temporarily impact approximately 5.51 acres subject to Corps jurisdiction. This total consists of 1.91 acre of wetland and 3.60 acres of non-wetland waters.

The A7C – ALPV - Initial Alternative will permanently impact approximately 9.89 acres subject to CDFG jurisdiction. This total consists of 8.99 acres of vegetated riparian habitat and 0.90 acre of unvegetated streambed.

The A7C – ALPV - Initial Alternative will temporarily impact approximately 6.63 acres subject to CDFG jurisdiction all of which consists of vegetated riparian habitat.

There are no permanent or temporary impacts to CCC jurisdiction associated with the A7C - ALPV – Initial Alternative.

TABLE 4.5.1-1
PERMANENT JURISDICTIONAL IMPACTS
ALIGNMENT 7 CORRIDOR – AVENIDA LA PATA VARIATION – INITIAL ALTERNATIVE
(in acres)

		Corps[2]			CDFG		
Jurisdictional Feature[1]	**Resource Type**	**Wetlands**	**Non-wetland Waters**	**Total**	**Vegetated**	**Unvegetated Streambed**	**Total**
FE/C/7-WETLAND 1[3]	Perennial	0.00	0.00	0.00	0.00	0.00	0.00
FE/C/7-1	Ephemeral	0.00	0.05	0.05	0.13	0.05	0.18
FE/C/7-2	Ephemeral	NA	NA	NA	0.00	0.01	0.01
FE/C/7-4	Ephemeral	NA	NA	NA	0.00	0.001	0.001
FE/7-1	Ephemeral	NA	NA	NA	2.41	0.04	2.45
FE/7-2	Intermittent	NA	NA	NA	0.38	0.02	0.40
7-1	Ephemeral	0.00	0.21	0.21	0.64	0.10	0.74
7-3	Ephemeral	0.00	0.002	0.002	0.00	0.01	0.01
7-4	Ephemeral	0.00	0.13	0.13	0.45	0.07	0.52
7-5	Ephemeral	0.00	0.02	0.02	0.26	0.00	0.26
C-5	Ephemeral/ Slope Wetland	0.00	0.09	0.09	0.78	0.00	0.78
CANADA CHIQUITA	Perennial	0.24	0.00	0.24	0.50	0.00	0.50
C-6	Ephemeral	0.00	0.06	0.06	0.25	0.00	0.25
C-SAN JUAN CREEK	Intermittent	0.08	0.00	0.08	0.08	0.00	0.08
7-SAN JUAN CREEK	Ephemeral	0.01	0.74	0.75	0.80	0.00	0.80
7-8	Ephemeral	0.00	0.04	0.04	0.36	0.01	0.37
7-9	Ephemeral	NA	NA	NA	1.27	0.02	1.29
7-10	Ephemeral	NA	NA	NA	0.04	0.03	0.07
7-13	Ephemeral	0.00	0.01	0.01	0.04	0.00	0.04
7-14	Ephemeral	0.004	0.126	0.13	0.11	0.11	0.22
7-15	Ephemeral	0.01	0.12	0.13	0.04	0.10	0.14
7-16	Ephemeral	0.00	0.13	0.13	0.23	0.11	0.34
Segunda Deshecha	Perennial	0.22	0.23	0.45	0.22	0.22	0.44
TOTAL	**NA**	**.56**	**1.96**	**2.52**	**8.99**	**.90**	**9.89**

[1] These features are depicted on Exhibits 1 and 2.

[2] Refer to Appendix B for isolated features totals

[3] Actual grading limits impact 2.71 acres of FE/C/7-Wetland 1 – However, based upon refinements to A7C-FEC-M, FEC-W and FEC-M, it is assumed that these impacts could ultimately be avoided.

TABLE 4.5.1-2
TEMPORARY JURISDICTIONAL IMPACTS
ALIGNMENT 7 CORRIDOR – AVENIDA LA PATA VARIATION– INITIAL ALTERNATIVE
(in acres)

		Corps			CDFG		
Jurisdictional Feature[1]	**Resource Type**	**Wetlands**	**Non-wetland Waters**	**Total**	**Vegetated**	**Unvegetated[3] Streambed**	**Total**
7-SAN JUAN CREEK	Intermittent	0.91	3.57	4.48	5.32	0.00	5.32
Canada Chiquita	Perennial	0.78	0.00	0.78	0.78	0.00	0.78
C-5	Ephemeral/ Slope Wetland	0.22	0.00	0.22	0.22	0.00	0.22
7-5	Ephemeral	0.00	0.003	0.003	0.01	0.00	0.01
7-8	Ephemeral	0.00	0.03	0.03	0.30	0.00	0.30
TOTAL	**NA**	**1.91**	**3.60**	**5.51**	**6.63**	**0.00**	**6.63**

[1] These features are depicted on Exhibits 1 and 2.

4.5.2 ALIGNMENT 7 CORRIDOR – AVENIDA LA PATA VARIATION – ULTIMATE ALTERNATIVE IMPACT TOTALS

The following impacts are based upon the A7C-ALPV-Ultimate Alternative disturbance limits. Permanent impacts are summarized in Table 4.5.2-1. Temporary impacts are summarized in Table 4.5.2-2.

The A7C – ALPV - Ultimate Alternative will permanently impact approximately 3.34 acres subject to Corps jurisdiction. This total consists of 1.36 acres of wetland and 1.98 acres of non-wetland waters.

The A7C – ALPV - Ultimate Alternative will temporarily impact approximately 6.07 acres subject to Corps jurisdiction. This total consists of 2.47 acres of wetland and 3.60 acres of non-wetland waters.

The A7C – ALPV – Ultimate Alternative will permanently impact approximately 11.12 acres subject to CDFG jurisdiction. This total consists of 10.17 acres of vegetated riparian habitat and 0.95 acre of unvegetated streambed.

The A7C – ALPV – Ultimate Alternative will temporarily impact approximately 7.19 acres subject to CDFG jurisdiction all of which consists of vegetated riparian habitat.

There are no permanent or temporary impacts to CCC jurisdiction associated with the A7C - ALPV – Ultimate Alternative.

TABLE 4.5.2-1
PERMANENT JURISDICTIONAL IMPACTS
ALIGNMENT 7 CORRIDOR – AVENIDA LA PATA VARIATION – ULTIMATE ALTERNATIVE
(in acres)

		Corps[2]			CDFG		
Jurisdictional Feature[1]	**Resource Type**	**Wetlands**	**Non-wetland Waters**	**Total**	**Vegetated**	**Unvegetated Streambed**	**Total**
FE/C/7-WETLAND 1[3]	Perennial	0.00	0.00	0.00	0.00	0.00	0.00
FE/C/7-1	Ephemeral	0.00	0.06	0.06	0.32	0.05	0.37
FE/C/7-2	Ephemeral	NA	NA	NA	0.00	0.02	0.02
FE/C/7-4	Ephemeral	NA	NA	NA	0.00	0.002	0.002
FE/7-1	Ephemeral	NA	NA	NA	2.49	0.04	2.53
FE/7-2	Intermittent	NA	NA	NA	0.42	0.01	0.43
FE-1	Ephemeral	NA	NA	NA	0.04	0.00	0.04
7-1	Ephemeral	0.00	0.23	0.23	0.65	0.11	0.76
7-3	Ephemeral	0.00	0.00	0.00	0.00	0.01	0.01
7-4	Ephemeral	0.00	0.13	0.13	0.45	0.07	0.52
7-5	Ephemeral	0.00	0.02	0.02	0.26	0.00	0.26
C-5	Ephemeral/ Slope Wetland	0.00	0.09	0.09	0.80	0.00	0.80
CANADA CHIQUITA	Perennial	0.30	0.00	0.30	0.60	0.00	0.60
C-6	Ephemeral	0.00	0.06	0.06	0.25	0.00	0.25
C-SAN JUAN CREEK	Intermittent	0.08	0.01	0.09	0.09	0.00	0.09
7-SAN JUAN CREEK	Intermittent	0.01	0.65	0.66	0.71	0.00	0.71
7-8	Ephemeral	0.00	0.06	0.06	0.37	0.00	0.37
7-9	Ephemeral	NA	NA	NA	1.27	0.02	1.29
7-10	Ephemeral	NA	NA	NA	0.04	0.03	0.07
7-13	Ephemeral	0.00	0.01	0.01	0.04	0.00	0.04
7-14	Ephemeral	0.004	0.136	0.14	0.11	0.12	0.23
7-15	Ephemeral	0.01	0.14	0.15	0.04	0.12	0.16
7-16	Ephemeral	0.00	0.14	0.14	0.26	0.11	0.37
Segunda Deshecha	Perennial	0.96	0.24	1.20	0.96	0.24	1.20
TOTAL	**NA**	**1.36**	**1.98**	**3.34**	**10.17**	**0.95**	**11.12**

[1] These features are depicted on Exhibits 1 and 2.

[2] Refer to Appendix B for isolated features totals

[3] Actual grading limits impact 7.33 acres of FE/C/7-Wetland 1 – However, based upon refinements to A7C-FEC-M, FEC-W and FEC-M, it is assumed that these impacts could ultimately be avoided.

TABLE 4.5.2-2
TEMPORARY JURISDICTIONAL IMPACTS
ALIGNMENT 7 CORRIDOR – AVENIDA LA PATA VARIATION – ULTIMATE ALTERNATIVE
(in acres)

		Corps			CDFG		
Jurisdictional Feature[1]	**Resource Type**	**Wetlands**	**Non-wetland Waters**	**Total**	**Vegetated**	**Unvegetated Streambed**	**Total**
7-SAN JUAN CREEK	Intermittent	0.91	3.57	4.48	5.32	0.00	5.32
Canada Chiquita	Perennial	1.21	0.00	1.21	1.21	0.00	1.21
C-5	Ephemeral/ Slope Wetland	0.35	0.00	0.35	0.35	0.00	0.35
7-5	Ephemeral	0.00	0.003	0.003	0.01	0.00	0.01
7-8	Ephemeral	0.00	0.03	0.03	0.30	0.00	0.30
TOTAL	**NA**	**2.47**	**3.60**	**6.07**	**7.19**	**0.00**	**7.19**

[1] These features are depicted on Exhibits 1 and 2.

4.6 ALIGMENT 7 CORRIDOR–FAR EAST CROSSOVER – MODIFIED IMPACT TOTALS

Impact analysis results for both the initial and ultimate disturbance limits are described below and are summarized in Tables 4.6.1-1, 4.6.1-2, 4.6.2-1 and 4.6.2-2.

4.6.1 ALIGMENT 7 CORRIDOR–FAR EAST CROSSOVER - MODIFIED – INITIAL ALTERNATIVE IMPACT TOTALS

The following impacts are based upon the A7C-FEC-M-Initial Alternative disturbance limits. Permanent impacts are summarized in Table 4.6.1-1. Temporary impacts are summarized in Table 4.6.1-2.

The A7C-FEC-M – Initial Alternative will permanently impact approximately 6.78 acres subject to Corps jurisdiction. This total consists of 0.93 acre of wetland and 5.85 acres of non-wetland waters.

The A7C-FEC-M – Initial Alternative will temporarily impact approximately 11.08 acres subject to Corps jurisdiction. This total consists of 8.51 acre of wetland and 2.57 acres of non-wetland waters.

The A7C-FEC-M – Initial Alternative will permanently impact approximately 23.83 acres subject to CDFG jurisdiction. This total consists of 21.52 acres of vegetated riparian habitat and 2.31 acres of unvegetated streambed.

The A7C-FEC-M – Initial Alternative will temporarily impact approximately 14.86 acres subject to CDFG jurisdiction all of which consists of vegetated riparian habitat.

The A7C-FEC-M – Initial Alternative will permanently impact approximately 0.34 acre subject to CCC jurisdiction. This total all consists of areas that qualify as CCC wetlands based on the presence of one parameter out of three possible parameters (soils, hydrology, plants).

The A7C-FEC-M – Initial Alternative will temporarily impact approximately 8.22 acres subject to CCC jurisdiction. This total all consists of areas that qualify as CCC wetlands based on the presence of one parameter out of three possible parameters (soils, hydrology, plants).

TABLE 4.6.1-1
PERMANENT JURISDICTIONAL IMPACTS
ALIGNMENT 7 CORRIDOR – FAR EAST CROSSOVER – MODIFIED – INITIAL ALTERNATIVE
(in acres)

		Corps[2]			CDFG		
Jurisdictional Feature[1]	**Resource Type**	**Wetlands**	**Non-wetland Waters**	**Total**	**Vegetated**	**Unvegetated Streambed**	**Total**
FE/C/7-1	Ephemeral	0.00	0.03	0.03	0.47	0.02	0.49
FE/C/7-WETLAND 2	Slope Wetland	0.00	0.00	0.00	0.00	0.00	0.00
FE/7-1	Ephemeral	NA	NA	NA	0.00	0.04	0.04
FE/7-2	Intermittent	NA	NA	NA	0.10	0.00	0.10
7-2	Ephemeral	0.00	0.02	0.02	0.00	0.06	0.06
7-3	Ephemeral	0.00	0.59	0.59	4.34	0.13	4.47
7-6	Ephemeral	0.00	0.003	0.003	0.00	0.003	0.003
7-San Juan Creek	Intermittent	0.00	0.01	0.01	0.80	0.00	0.80
7-10	Ephemeral	0.00	0.00	0.00	0.03	0.05	0.08
7-11	Ephemeral	0.00	0.00	0.00	0.00	0.03	0.03
7-12	Ephemeral	0.00	0.04	0.04	0.55	0.00	0.55
7-13	Ephemeral	0.00	2.41	2.41	2.57	0.82	3.39
FE/7-3	Ephemeral	0.00	0.25	0.25	2.23	0.00	2.23
FE/7-4	Intermittent	0.00	0.00	0.00	0.98	0.01	0.99
FE/7-6	Ephemeral	0.00	0.12	0.12	1.02	0.05	1.07
FE/7-7	Ephemeral	0.00	0.11	0.11	1.92	0.01	1.93
FE/7-8	Ephemeral	0.00	0.19	0.19	2.34	0.08	2.42
FE/7-9	Ephemeral	0.00	0.10	0.10	0.00	0.10	0.10
FE/7-10	Ephemeral	0.00	0.05	0.05	0.17	0.04	0.21
FE/7-11	Perennial	0.12	0.37	0.49	0.76	0.00	0.76
FE/7-12	Intermittent	0.35	0.00	0.35	0.35	0.00	0.35
FE/7-12	Ephemeral	0.00	0.15	0.15	0.55	0.07	0.62
FE/7-14	Ephemeral	0.00	0.18	0.18	0.14	0.05	0.19
FE/7-VM18	Depressional Wetland	0.04	0.00	0.04	NA	NA	NA
FE/7-VM19	Depressional Wetland	0.06	0.00	0.06	NA	NA	NA
FE/7-15	Ephemeral	0.00	0.13	0.13	0.26	0.10	0.36

		Corps[2]			CDFG		
Jurisdictional Feature[1]	Resource Type	Wetlands	Non-wetland Waters	Total	Vegetated	Unvegetated Streambed	Total
FE/7-16	Ephemeral	0.00	0.07	0.07	0.00	0.07	0.07
FE/7-17	Ephemeral	0.00	0.11	0.11	0.00	0.11	0.11
FE/7-18	Ephemeral	0.00	0.50	0.50	0.75	0.25	1.00
FE/7-19	Ephemeral	0.00	0.01	0.01	0.00	0.01	0.01
FE/7-20	Ephemeral	0.00	0.01	0.01	0.00	0.01	0.01
FE/7-21	Ephemeral	0.00	0.07	0.07	0.52	0.00	0.52
FE/7-22	Ephemeral	0.00	0.27	0.27	0.33	0.14	0.47
FE/7-23	Ephemeral	0.00	0.002	0.002	0.00	0.002	0.002
FE/7-24	Ephemeral	0.00	0.03	0.03	0.00	0.03	0.03
FE/7-25	Ephemeral	0.00	0.02	0.02	0.00	0.02	0.02
FE/7-SAN MATEO CREEK[3]	Perennial	0.12	0.00	0.12	0.12	0.00	0.12
FE/7-SAN MATEO MARSH-EAST of I5[3]	Freshwater Forested Wetland	0.00	0.00	0.00	0.21	0.00	0.21
FE/7-VM20[3]	Depressional Wetland	0.05	0.00	0.05	NA	NA	NA
FE/7-VP3[3]	Depressional Wetland	0.18	0.00	0.18	NA	NA	NA
San Onofre Creek[3]	Perennial	0.01	0.00	0.01	0.01	0.00	0.01
TOTAL	**NA**	**0.93**	**5.85**	**6.78**	**21.52**	**2.31**	**23.83**

[1] These features are depicted on Exhibits 1 and 2.

[2] Refer to Appendix B for isolated features totals

[3] Feature subject to CCC jurisdiction.

TABLE 4.6.1-2
TEMPORARY JURISDICTIONAL IMPACTS
ALIGNMENT 7 CORRIDOR – FAR EAST CROSSOVER – MODIFIED – INITIAL ALTERNATIVE
(in acres)

		Corps			CDFG		
Jurisdictional Feature[1]	**Resource Type**	**Wetlands**	**Non-wetland Waters**	**Total**	**Vegetated**	**Unvegetated Streambed**	**Total**
7-SAN JUAN CREEK	Intermittent	0.29	2.57	2.86	6.64	0.00	6.64
SAN MATEO CREEK[2]	Perennial	7.32	0.00	7.32	7.32	0.00	7.32
San Onofre Creek[2]	Perennial	0.90	0.00	0.90	0.90	0.00	0.90
TOTAL	**NA**	**8.51**	**2.57**	**11.08**	**14.86**	**0.00**	**14.86**

[1] These features are depicted on Exhibits 1 and 2.
[2] Feature subject to CCC jurisdiction.

4.6.2 ALIGMENT 7 CORRIDOR–FAR EAST CROSSOVER - MODIFIED – ULTIMATE ALTERNATIVE IMPACT TOTALS

The following impacts are based upon the A7C-FEC-M-Ultimate Alternative disturbance limits. Permanent impacts are summarized in Table 4.6.2-1. Temporary impacts are summarized in Table 4.6.2-2.

The A7C-FEC-M – Ultimate Alternative will permanently impact approximately 6.90 acres subject to Corps jurisdiction. This total consists of 0.93 acre of wetland and 5.97 acres of non-wetland waters.

The A7C-FEC-M – Ultimate Alternative will temporarily impact approximately 12.24 acres subject to Corps jurisdiction. This total consists of 8.77 acres of wetland and 3.47 acres of non-wetland waters.

The A7C-FEC-M – Ultimate Alternative will permanently impact approximately 24.21 acres subject to CDFG jurisdiction. This total consists of 21.93 acres of vegetated riparian habitat and 2.28 acres of unvegetated streambed.

The A7C-FEC-M – Ultimate Alternative will temporarily impact approximately 16.99 acres subject to CDFG jurisdiction all of which consists of vegetated riparian habitat.

The A7C-FEC-M – Ultimate Alternative will permanently impact approximately 0.35 acre subject to CCC jurisdiction. This total all consists of areas that qualify as CCC wetlands based on the presence of one parameter out of three possible parameters (soils, hydrology, plants).

The A7C-FEC-M – Ultimate Alternative will temporarily impact approximately 8.38 acres subject to CCC jurisdiction. This total all consists of areas that qualify as CCC wetlands based on the presence of one parameter out of three possible parameters (soils, hydrology, plants).

TABLE 4.6.2-1
JURISDICTIONAL IMPACTS
ALIGNMENT 7 CORRIDOR – FAR EAST CROSSOVER – MODIFIED – ULTIMATE ALTERNATIVE
(in acres)

		Corps[2]			CDFG		
Jurisdictional Feature[1]	Resource Type	Wetlands	Non-wetland Waters	Total	Vegetated	Unvegetated Streambed	Total
FE/C/7-1	Ephemeral	0.00	0.03	0.03	0.47	0.02	0.49
FE/C/7-WETLAND 2	Slope Wetland	0.00	0.00	0.00	0.00	0.00	0.00
FE/7-1	Ephemeral	NA	NA	NA	0.01	0.04	0.05
FE/7-2	Intermittent	NA	NA	NA	0.11	0.00	0.11
7-2	Ephemeral	0.00	0.02	0.02	0.00	0.06	0.06
7-3	Ephemeral	0.00	0.60	0.60	4.42	0.14	4.56
7-6	Ephemeral	0.00	0.003	0.003	0.00	0.003	0.003
7-San Juan Creek	Intermittent	0.00	0.01	0.01	0.86	0.00	0.86
7-10	Ephemeral	NA	NA	NA	0.01	0.04	0.05
7-11	Ephemeral	NA	NA	NA	0.00	0.03	0.03
7-12	Ephemeral	0.00	0.04	0.04	0.52	0.00	0.52
7-13	Ephemeral	0.00	2.34	2.34	2.58	0.75	3.33
FE/7-3	Ephemeral	0.00	0.26	0.26	2.27	0.00	2.27
FE/7-4	Intermittent	NA	NA	NA	0.97	0.01	0.98
FE/7-6	Ephemeral	0.00	0.12	0.12	0.95	0.05	1.00
FE/7-7	Ephemeral	0.00	0.12	0.12	2.06	0.01	2.07
FE/7-8	Ephemeral	0.00	0.19	0.19	2.34	0.09	2.43
FE/7-9	Ephemeral	0.00	0.10	0.10	0.00	0.10	0.10
FE/7-10	Ephemeral	0.00	0.05	0.05	0.24	0.04	0.28
FE/7-11	Perennial	0.12	0.37	0.49	0.76	0.00	0.76
FE/7-12	Intermittent	0.35	0.00	0.35	0.35	0.00	0.35
FE/7-12	Ephemeral	0.00	0.27	0.27	0.59	0.08	0.67
FE/7-14	Ephemeral	0.00	0.19	0.19	0.15	0.05	0.20
FE/7-VM18	Depressional Wetland	0.04	0.00	0.04	NA	NA	NA
FE/7-VM19	Depressional Wetland	0.06	0.00	0.06	NA	NA	NA
FE/7-15	Ephemeral	0.00	0.14	0.14	0.25	0.12	0.37

		Corps[2]			CDFG		
Jurisdictional Feature[1]	**Resource Type**	**Wetlands**	**Non-wetland Waters**	**Total**	**Vegetated**	**Unvegetated Streambed**	**Total**
FE/7-16	Ephemeral	0.00	0.07	0.07	0.00	0.07	0.07
FE/7-17	Ephemeral	0.00	0.10	0.10	0.00	0.10	0.10
FE/7-18	Ephemeral	0.00	0.53	0.53	0.81	0.26	1.07
FE/7-19	Ephemeral	0.00	0.01	0.01	0.00	0.01	0.01
FE/7-20	Ephemeral	0.00	0.01	0.01	0.00	0.01	0.01
FE/7-21	Ephemeral	0.00	0.07	0.07	0.53	0.00	0.53
FE/7-22	Ephemeral	0.00	0.27	0.27	0.33	0.14	0.47
FE/7-23	Ephemeral	0.00	0.002	0.002	0.00	0.002	0.002
FE/7-24	Ephemeral	0.00	0.03	0.03	0.00	0.03	0.03
FE/7-25	Ephemeral	0.00	0.02	0.02	0.00	0.02	0.02
FE/7-SAN MATEO CREEK[3]	Perennial	0.12	0.00	0.12	0.12	0.00	0.12
FE/7-SAN MATEO MARSH-EAST of I5[3]	Palustrine Forested Wetland	0.00	0.00	0.00	0.22	0.00	0.22
FE/7-VM20[3]	Depressional Wetland	0.05	0.00	0.05	NA	NA	NA
FE/7-VP3[3]	Depressional Wetland	0.18	0.00	0.18	NA	NA	NA
San Onofre Creek[3]	Perennial	0.01	0.00	0.01	0.01	0.00	0.01
TOTAL	**NA**	**0.93**	**5.97**	**6.90**	**21.93**	**2.28**	**24.21**

[1] These features are depicted on Exhibits 1 and 2.
[2] Refer to Appendix B for isolated features totals
[3] Feature subject to CCC jurisdiction.

TABLE 4.6.2-2
TEMPORARY JURISDICTIONAL IMPACTS
ALIGNMENT 7 CORRIDOR – FAR EAST CROSSOVER – MODIFIED – ULTIMATE ALTERNATIVE
(in acres)

		Corps			CDFG		
Jurisdictional Feature[1]	**Resource Type**	**Wetlands**	**Non-wetland Waters**	**Total**	**Vegetated**	**Unvegetated Streambed**	**Total**
7-SAN JUAN CREEK	Intermittent	0.39	3.47	3.86	8.61	0.00	8.61
FE/7 SAN MATEO CREEK[2]	Perennial	7.48	0.00	7.48	7.48	0.00	7.48
San Onofre Creek[2]	Perennial	0.90	0.00	0.90	0.90	0.00	0.90
TOTAL	**NA**	**8.77**	**3.47**	**12.24**	**16.99**	**0.00**	**16.99**

[1] These features are depicted on Exhibits 1 and 2.
[2] Feature subject to CCC jurisdiction.

4.7 FAR EAST CORRIDOR – WEST IMPACT TOTALS

Impact analysis results for both the initial and ultimate disturbance limits are described below and are summarized in Tables 4.7.1-1, 4.7.1-2, 4.7.2-1, and 4.7.2-2

4.7.1 FAR EAST CORRIDOR – WEST– INITIAL ALTERNATIVE IMPACT TOTALS

The following impacts are based upon the FEC-W-Initial Alternative disturbance limits. Permanent impacts are summarized in Table 4.7.1-1. Temporary impacts are summarized in Table 4.7.1-2.

The FEC-W – Initial Alternative will permanently impact approximately 6.69 acres subject to Corps jurisdiction. This total consists of 2.62 acres consist of wetland and 4.07 acres of non-wetland waters.

The FEC-W – Initial Alternative will temporarily impact approximately 9.15 acres subject to Corps jurisdiction. This total consists of 8.62 acres consist of wetland and 0.53 acre of non-wetland waters.

The FEC-W – Initial Alternative will permanently impact approximately 25.45 acres subject to CDFG jurisdiction. This total consists of 21.13 acres consist of vegetated riparian habitat and 2.32 acres of unvegetated streambed.

The FEC-W – Initial Alternative will temporarily impact approximately 11.23 acres subject to CDFG jurisdiction. This total consists of 11.22 acres consist of vegetated riparian habitat and 0.01 acre of unvegetated streambed.

The FEC-W – Initial Alternative will permanently impact approximately 0.34 acre subject to CCC jurisdiction. This total all consists of areas that qualify as CCC wetlands based on the presence of one parameter out of three possible parameters (soils, hydrology, plants).

The FEC-W – Initial Alternative will temporarily impact approximately 8.22 acres subject to CCC jurisdiction. This total all consists of areas that qualify as CCC wetlands based on the presence of one parameter out of three possible parameters (soils, hydrology, plants).

TABLE 4.7.1-1
PERMANENT JURISDICTIONAL IMPACTS
FAR EAST CORRIDOR – WEST – INITIAL ALTERNATIVE
(in acres)

		Corps[2]			CDFG		
Jurisdictional Feature[1]	**Resource Type**	**Wetlands**	**Non-wetland Waters**	**Total**	**Vegetated**	**Unvegetated Streambed**	**Total**
FE/C/7-1	Ephemeral	0.00	0.03	0.03	0.47	0.02	0.49
FE/C/7-WETLAND 2	Slope Wetland	0.00	0.00	0.00	0.00	0.00	0.00
FE/7-1	Ephemeral	NA	NA	NA	1.47	0.04	1.51
FE/7-2	Intermittent	NA	NA	NA	0.29	0.02	0.31
FE-1	Ephemeral	NA	NA	NA	0.48	0.00	0.48
FE-2A	Ephemeral	NA	NA	NA	0.00	0.02	0.02
FE-2B	Ephemeral	0.00	0.06	0.06	0.00	0.06	0.06
FE-3	Intermittent	0.00	0.00	0.00	0.33	0.00	0.33
FE-5	Intermittent	0.04	0.07	0.11	1.14	0.00	1.14
FE-6	Ephemeral	NA	NA	NA	0.40	0.01	0.41
FE-7	Ephemeral	0.00	0.26	0.26	0.24	0.02	0.26
FE-7	Intermittent	1.07	0.00	1.07	4.79	0.00	4.79
FE-7	Open Water	0.58	0.94	1.52	0.58	0.94	1.52
FEW-San Juan Creek	Intermittent	0.00	0.003	0.003	0.02	0.00	0.02
FEW-2	Ephemeral	0.00	0.07	0.07	0.48	0.03	0.51
FE/7-3	Ephemeral	0.00	0.16	0.16	2.70	0.00	2.70
FE/7-4	Ephemeral	0.00	0.00	0.00	0.33	0.04	0.37
FE/7-6	Ephemeral	0.00	0.10	0.10	0.98	0.03	1.01
FE/7-7	Ephemeral	0.00	0.11	0.11	1.92	0.01	1.93
FE/7-8	Ephemeral	0.00	0.19	0.19	2.34	0.08	2.42
FE/7-9	Ephemeral	0.00	0.10	0.10	0.00	0.10	0.10
FE/7-10	Ephemeral	0.00	0.05	0.05	0.17	0.04	0.21
FE/7-11	Perennial	0.12	0.37	0.49	0.76	0.00	0.76
FE/7-12	Intermittent	0.35	0.00	0.35	0.35	0.00	0.35
FE/7-12	Ephemeral	0.00	0.15	0.15	0.55	0.07	0.62
FE/7-14	Ephemeral	0.00	0.18	0.18	0.14	0.05	0.19
FE/7-VM18	Depressional Wetland	0.04	0.00	0.04	NA	NA	NA

		Corps[2]			CDFG		
Jurisdictional Feature[1]	**Resource Type**	**Wetlands**	**Non-wetland Waters**	**Total**	**Vegetated**	**Unvegetated Streambed**	**Total**
FE/7-VM19	Depressional Wetland	0.06	0.00	0.06	NA	NA	NA
FE/7-15	Ephemeral	0.00	0.13	0.13	0.26	0.10	0.36
FE/7-16	Ephemeral	0.00	0.07	0.07	0.00	0.07	0.07
FE/7-17	Ephemeral	0.00	0.11	0.11	0.00	0.11	0.11
FE/7-18	Ephemeral	0.00	0.50	0.50	0.75	0.25	1.00
FE/7-19	Ephemeral	0.00	0.01	0.01	0.00	0.01	0.01
FE/7-20	Ephemeral	0.00	0.01	0.01	0.00	0.01	0.01
FE/7-21	Ephemeral	0.00	0.07	0.07	0.52	0.00	0.52
FE/7-22	Ephemeral	0.00	0.27	0.27	0.33	0.14	0.47
FE/7-23	Ephemeral	0.00	0.002	0.002	0.00	0.002	0.002
FE/7-24	Ephemeral	0.00	0.03	0.03	0.00	0.03	0.03
FE/7-25	Ephemeral	0.00	0.02	0.02	0.00	0.02	0.02
FE/7-SAN MATEO CREEK[3]	Perennial	0.12	0.00	0.12	0.12	0.00	0.12
FE/7-SAN MATEO MARSH-EAST of I5[3]	Palustrine Forested Wetland	0.00	0.00	0.00	0.21	0.00	0.21
FE/7-VM20[3]	Depressional Wetland	0.05	0.00	0.05	NA	NA	NA
FE/7-VP3[3]	Depressional Wetland	0.18	0.00	0.18	NA	NA	NA
San Onofre Creek[3]	Perennial	0.01	0.00	0.01	0.01	0.00	0.01
TOTAL	**NA**	**2.62**	**4.07**	**6.69**	**23.13**	**2.32**	**25.45**

[1] These features are depicted on Exhibits 1 and 2.
[2] Refer to Appendix B for isolated features totals.
[3] Feature subject to CCC jurisdiction.

TABLE 4.7.1-2
TEMPORARY JURISDICTIONAL IMPACTS
FAR EAST COORIDOR - WEST – INITIAL ALTERNATIVE
(in acres)

		Corps			CDFG		
Jurisdictional Feature[1]	**Resource Type**	**Wetlands**	**Non-wetland Waters**	**Total**	**Vegetated**	**Unvegetated Streambed**	**Total**
FE-3 (Canada Gobernadora)	Intermittent	0.12	0.00	0.12	0.64	0.00	0.64
FEW-SAN JUAN CREEK	Intermittent	0.28	0.52	0.80	2.36	0.00	2.36
FEW-2	Ephemeral	0.00	0.01	0.01	0.00	0.01	0.01
SAN MATEO CREEK[2]	Perennial	7.32	0.00	7.32	7.32	0.00	7.32
San Onofre Creek[2]	Perennial	0.90	0.00	0.90	0.90	0.00	0.90
TOTAL	**NA**	**8.62**	**0.53**	**9.15**	**11.22**	**0.01**	**11.23**

[1] These features are depicted on Exhibits 1 and 2.
[2] Feature subject to CCC jurisdiction.

4.7.2 FAR EAST CORRIDOR – WEST– ULTIMATE ALTERNATIVE IMPACT TOTALS

The following impacts are based upon the FEC-W-Ultimate Alternative disturbance limits. Permanent impacts are summarized in Table 4.7.2-1. Temporary impacts are summarized in Table 4.7.2-2.

The FEC-W – Ultimate Alternative will permanently impact approximately 6.96 acres subject to Corps jurisdiction. This total consists of 2.64 acres consist of wetland and 4.32 acres of non-wetland waters.

The FEC-W – Ultimate Alternative will temporarily impact approximately 9.35 acres subject to Corps jurisdiction. This total consists of 8.71 acres consist of wetland and 0.64 acre of non-wetland waters.

The FEC-W – Ultimate Alternative will permanently impact approximately 26.31 acres subject to CDFG jurisdiction. This total consists of 23.92 acres consist of vegetated riparian habitat and 2.39 acres of unvegetated streambed.

The FEC-W – Ultimate Alternative will temporarily impact approximately 11.80 acres subject to CDFG jurisdiction. This total consists of 11.79 acres consist of vegetated riparian habitat and 0.01 acre of unvegetated streambed.

The FEC-W – Ultimate Alternative will permanently impact approximately 0.35 acre subject to CCC jurisdiction. This total all consists of areas that qualify as CCC wetlands based on the presence of one parameter out of three possible parameters (soils, hydrology, plants).

The FEC-W – Ultimate Alternative will temporarily impact approximately 8.38 acres subject to CCC jurisdiction. This total all consists of areas that qualify as CCC wetlands based on the presence of one parameter out of three possible parameters (soils, hydrology, plants).

TABLE 4.7.2-1
PERMANENT JURISDICTIONAL IMPACTS
FAR EAST CORRIDOR – WEST – ULTIMATE ALTERNATIVE
(in acres)

		Corps[2]			CDFG		
Jurisdictional Feature[1]	**Resource Type**	**Wetlands**	**Non-wetland Waters**	**Total**	**Vegetated**	**Unvegetated Streambed**	**Total**
FE/C/7-1	Ephemeral	0.00	0.03	0.03	0.47	0.02	0.49
FE/C/7-WETLAND 2	Slope Wetland	NA	NA	NA	NA	NA	NA
FE/7-1	Ephemeral	NA	NA	NA	1.56	0.04	1.60
FE/7-2	Intermittent	NA	NA	NA	0.29	0.02	0.31
FE-1	Ephemeral	NA	NA	NA	0.48	0.00	0.48
FE-2A	Ephemeral	NA	NA	NA	0.00	0.02	0.02
FE-2B	Ephemeral	0.00	0.07	0.07	0.00	0.07	0.07
FE-3	Intermittent	0.03	0.00	0.03	0.58	0.00	0.58
FE-5	Intermittent	0.03	0.07	0.10	1.13	0.00	1.13
FE-6	Ephemeral	NA	NA	NA	0.40	0.01	0.41
FE-7	Ephemeral	0.00	0.26	0.26	0.24	0.02	0.26
FE-7	Intermittent	1.07	0.00	1.07	4.79	0.00	4.79
FE-7	Open Water	0.58	0.94	1.52	0.58	0.94	1.52
FEW-2	Ephemeral	0.00	0.07	0.07	0.52	0.03	0.55
FEW- SAN JUAN CREEK	Intermittent	0.00	0.03	0.03	0.05	0.00	0.05
FE/7-3	Ephemeral	0.00	0.18	0.18	2.72	0.01	2.73
FE/7-4	Ephemeral	0.00	0.00	0.00	0.33	0.04	0.37
FE/7-6	Ephemeral	0.00	0.11	0.11	0.98	0.03	1.01
FE/7-7	Ephemeral	0.00	0.13	0.13	2.10	0.01	2.11
FE/7-8	Ephemeral	0.00	0.19	0.19	2.34	0.09	2.43
FE/7-9	Ephemeral	0.00	0.10	0.10	0.00	0.10	0.10
FE/7-10	Ephemeral	0.00	0.05	0.05	0.24	0.04	0.28
FE/7-11	Perennial	0.12	0.37	0.49	0.76	0.00	0.76
FE/7-12	Intermittent	0.35	0.00	0.35	0.35	0.00	0.35
FE/7-12	Ephemeral	0.00	0.27	0.27	0.59	0.08	0.67
FE/7-14	Ephemeral	0.00	0.19	0.19	0.15	0.05	0.20
FE/7-VM18	Depressional Wetland	0.04	0.00	0.04	NA	NA	NA

		Corps[2]			CDFG		
Jurisdictional Feature[1]	**Resource Type**	**Wetlands**	**Non-wetland Waters**	**Total**	**Vegetated**	**Unvegetated Streambed**	**Total**
FE/7-VM19	Depressional Wetland	0.06	0.00	0.06	NA	NA	NA
FE/7-15	Ephemeral	0.00	0.14	0.14	0.25	0.12	0.37
FE/7-16	Ephemeral	0.00	0.07	0.07	0.00	0.07	0.07
FE/7-17	Ephemeral	0.00	0.10	0.10	0.00	0.10	0.10
FE/7-18	Ephemeral	0.00	0.53	0.53	0.81	0.26	1.07
FE/7-19	Ephemeral	0.00	0.01	0.01	0.00	0.01	0.01
FE/7-20	Ephemeral	0.00	0.01	0.01	0.00	0.01	0.01
FE/7-21	Ephemeral	0.00	0.07	0.07	0.52	0.00	0.52
FE/7-22	Ephemeral	0.00	0.28	0.28	0.34	0.15	0.49
FE/7-23	Ephemeral	0.00	0.002	0.002	0.00	0.002	0.002
FE/7-24	Ephemeral	0.00	0.03	0.03	0.00	0.03	0.03
FE/7-25	Ephemeral	0.00	0.02	0.02	0.00	0.02	0.02
FE/7-SAN MATEO CREEK[3]	Perennial	0.12	0.00	0.12	0.12	0.00	0.12
FE/7-SAN MATEO MARSH-EAST of I5[3]	Freshwater Forested Wetland	0.00	0.00	0.00	0.22	0.00	0.22
FE/7-VM20[3]	Depressional Wetland	0.05	0.00	0.05	NA	NA	NA
FE/7-VP3[3]	Depressional Wetland	0.18	0.00	0.18	NA	NA	NA
San Onofre Creek[3]	Perennial	0.01	0.00	0.01	0.01	0.00	0.01
TOTAL	**NA**	**2.64**	**4.32**	**6.96**	**23.92**	**2.39**	**26.31**

[1] These features are depicted on Exhibits 1 and 2.
[2] Refer to Appendix B for isolated features totals
[3] Feature subject to CCC jurisdiction.

TABLE 4.7.2-2
TEMPORARY JURISDICTIONAL IMPACTS
FAR EAST CORRIDOR – WEST – ULTIMATE ALTERNATIVE
(in acres)

		Corps			CDFG		
Jurisdictional Feature[1]	**Resource Type**	**Wetlands**	**Non-wetland Waters**	**Total**	**Vegetated**	**Unvegetated Streambed**	**Total**
FE-3 (Canada Gobernadora)	Intermittent	0.14	0.00	0.14	0.68	0.00	0.68
FEW-SAN JUAN CREEK	Intermittent	0.35	0.63	0.98	2.89	0.00	2.89
FEW-2	Ephemeral	0.00	0.01	0.01	0.00	0.01	0.01
SAN MATEO CREEK[2]	Perennial	7.32	0.00	7.32	7.32	0.00	7.32
San Onofre Creek[2]	Perennial	0.90	0.00	0.90	0.90	0.00	0.90
TOTAL	**NA**	**8.71**	**0.64**	**9.35**	**11.79**	**0.01**	**11.80**

[1] These features are depicted on Exhibits 1 and 2.
[2] Feature subject to CCC jurisdiction.

4.8 FAR EAST CORRIDOR – MODIFIED IMPACT TOTALS

Impact analysis results for both the initial and ultimate disturbance limits are described below and are summarized in Tables 4.8.1-1, 4.8.1-2, 4.8.2-1, and 4.8.2-2

4.8.1 FAR EAST CORRIDOR – MODIFIED – INITIAL ALTERNATIVE IMPACT TOTALS

The following impacts are based upon the FEC-M-Initial Alternative disturbance limits. Permanent impacts are summarized in Table 4.8.1-1. Temporary impacts are summarized in Table 4.8.1-2.

The FEC-M – Initial Alternative will permanently impact approximately 5.44 acres subject to Corps jurisdiction. This total consists of 1.71 acres consist of wetland and 3.73 acres of non-wetland waters.

The FEC-M – Initial Alternative will temporarily impact approximately 11.31 acres subject to Corps jurisdiction. This total consists of 8.98 acres consist of wetland and 2.33 acres of non-wetland waters.

The FEC-M – Initial Alternative will permanently impact approximately 18.67 acres subject to CDFG jurisdiction. This total consists of 16.88 acres consist of vegetated riparian habitat and 1.79 acres of unvegetated streambed.

The FEC-M – Initial Alternative will temporarily impact approximately 13.28 acres subject to CDFG jurisdiction. This total consists of 13.27 acres consist of vegetated riparian habitat and 0.01 acre of unvegetated streambed.

The FEC-M – Initial Alternative will permanently impact approximately 0.34 acre subject to CCC jurisdiction. This total all consists of areas that qualify as CCC wetlands based on the presence of one parameter out of three possible parameters (soils, hydrology, plants).

The FEC-M – Initial Alternative will temporarily impact approximately 8.22 acres subject to CCC jurisdiction. This total all consists of areas that qualify as CCC wetlands based on the presence of one parameter out of three possible parameters (soils, hydrology, plants).

TABLE 4.8.1-1
PERMANENT JURISDICTIONAL IMPACTS
FAR EAST CORRIDOR – MODIFIED – INITIAL ALTERNATIVE
(in acres)

		Corps[2]			CDFG		
Jurisdictional Feature[1]	**Resource Type**	**Wetlands**	**Non-wetland Waters**	**Total**	**Vegetated**	**Unvegetated Streambed**	**Total**
FE/C/7-1	Ephemeral	0.00	0.03	0.03	0.47	0.02	0.49
FE/C/7-WETLAND 2	Slope Wetland	NA	NA	NA	NA	NA	NA
FE/7-1	Ephemeral	NA	NA	NA	1.47	0.04	1.51
FE/7-2	Intermittent	NA	NA	NA	0.29	0.02	0.31
FE-1	Ephemeral	NA	NA	NA	0.48	0.00	0.48
FE-2A	Ephemeral	NA	NA	NA	0.00	0.02	0.02
FE-2B	Ephemeral	0.00	0.06	0.06	0.00	0.06	0.06
FE-3	Intermittent	0.00	0.00	0.00	0.33	0.00	0.33
FE-5	Ephemeral	0.00	0.06	0.06	0.86	0.00	0.86
FE-6	Ephemeral	NA	NA	NA	0.30	0.02	0.32
FE-7	Intermittent	0.24	0.00	0.24	1.15	0.00	1.15
FE-7	Ephemeral	0.00	0.09	0.09	0.00	0.05	0.05
FEM-1	Ephemeral	0.08	0.42	0.50	1.12	0.06	1.18
FEM-3	Ephemeral	0.00	0.00	0.00	0.52	0.02	0.54
FEM-5	Ephemeral	0.00	0.001	0.001	0.00	0.001	0.001
FEM-6	Ephemeral	0.00	0.01	0.01	0.00	0.01	0.01
FEM-8	Ephemeral	0.00	0.004	0.004	0.00	0.004	0.004
FEM-VM11	Depressional Wetland	0.03	0.00	0.03	NA	NA	NA
FEM-VP2	Depressional Wetland	0.15	0.00	0.15	NA	NA	NA
FEM-San Juan Creek	Intermittent	0.00	0.01	0.01	0.01	0.00	0.01
FEM-10	Ephemeral	0.00	0.30	0.30	3.25	0.03	3.28
FEM-10	Open Water	0.22	0.00	0.22	0.22	0.00	0.22
FEM-11	Ephemeral	0.00	0.17	0.17	0.97	0.07	1.04
FEM-12	Ephemeral	0.00	0.09	0.09	0.05	0.05	0.10
FEM-13	Ephemeral	0.001	0.139	0.14	0.001	0.139	0.14
FEM-14	Ephemeral	0.00	0.05	0.05	0.00	0.05	0.05
FEM-15	Ephemeral	0.00	0.15	0.15	0.00	0.15	0.15

		Corps[2]			CDFG		
Jurisdictional Feature[1]	**Resource Type**	**Wetlands**	**Non-wetland Waters**	**Total**	**Vegetated**	**Unvegetated Streambed**	**Total**
FEM-16	Ephemeral	0.00	0.05	0.05	0.53	0.00	0.53
FE/7-7	Intermittent	0.06	0.04	0.10	0.59	0.00	0.59
FE/7-8	Ephemeral	0.00	0.04	0.04	0.27	0.02	0.29
FE/7-8A	Ephemeral	0.00	0.01	0.01	0.00	0.01	0.01
FE/7-9	Ephemeral	0.00	0.05	0.05	0.00	0.05	0.05
FE/7-10	Ephemeral	0.00	0.03	0.03	0.00	0.03	0.03
FE/7-11	Perennial	0.12	0.37	0.49	0.76	0.00	0.76
FE/7-12	Intermittent	0.35	0.00	0.35	0.35	0.00	0.35
FE/7-12	Ephemeral	0.00	0.15	0.15	0.55	0.07	0.62
FE/7-14	Ephemeral	0.00	0.18	0.18	0.14	0.05	0.19
FE/7-VM18	Depressional Wetland	0.04	0.00	0.04	NA	NA	NA
FE/7-VM19	Depressional Wetland	0.06	0.00	0.06	NA	NA	NA
FE/7-15	Ephemeral	0.00	0.13	0.13	0.26	0.10	0.36
FE/7-16	Ephemeral	0.00	0.07	0.07	0.00	0.07	0.07
FE/7-17	Ephemeral	0.00	0.11	0.11	0.00	0.11	0.11
FE/7-18	Ephemeral	0.00	0.50	0.50	0.75	0.25	1.00
FE/7-19	Ephemeral	0.00	0.01	0.01	0.00	0.01	0.01
FE/7-20	Ephemeral	0.00	0.01	0.01	0.00	0.01	0.01
FE/7-21	Ephemeral	0.00	0.07	0.07	0.52	0.00	0.52
FE/7-22	Ephemeral	0.00	0.27	0.27	0.33	0.14	0.47
FE/7-23	Ephemeral	0.00	0.002	0.002	0.00	0.002	0.002
FE/7-24	Ephemeral	0.00	0.03	0.03	0.00	0.03	0.03
FE/7-25	Ephemeral	0.00	0.02	0.02	0.00	0.02	0.02
FE/7-SAN MATEO CREEK[3]	Perennial	0.12	0.00	0.12	0.12	0.00	0.12
FE/7-SAN MATEO MARSH-EAST of I5[3]	Freshwater Forested Wetland	0.00	0.00	0.00	0.21	0.00	0.21
FE/7-VM20[3]	Depressional Wetland	0.05	0.00	0.05	NA	NA	NA

		Corps[2]			CDFG		
Jurisdictional Feature[1]	**Resource Type**	**Wetlands**	**Non-wetland Waters**	**Total**	**Vegetated**	**Unvegetated Streambed**	**Total**
FE/7-VP3[3]	Depressional Wetland	0.18	0.00	0.18	NA	NA	NA
San Onofre Creek[3]	Perennial	0.01	0.00	0.01	0.01	0.00	0.01
TOTAL	**NA**	**1.71**	**3.73**	**5.44**	**16.88**	**1.79**	**18.67**

[1] These features are depicted on Exhibits 1 and 2.
[2] Refer to Appendix B for isolated features totals
[3] Feature subject to CCC jurisdiction.

TABLE 4.8.1-2
TEMPORARY JURISDICTIONAL IMPACTS
FAR EAST CORRIDOR - MODIFIED – INITIAL ALTERNATIVE
(in acres)

		Corps			CDFG		
Jurisdictional Feature[1]	**Resource Type**	**Wetlands**	**Non-wetland Waters**	**Total**	**Vegetated**	**Unvegetated Streambed**	**Total**
FE-3 (Canada Gobernadora)	Intermittent	0.12	0.00	0.12	0.64	0.00	0.64
FEM-SAN JUAN CREEK	Intermittent	0.29	2.27	2.56	2.56	0.00	2.56
FEM-Wetland 3	Depressional Wetland	0.07	0.00	0.07	0.07	0.00	0.07
FEM-6	Ephemeral	0.00	0.01	0.01	0.00	0.01	0.01
FEM-7	Ephemeral	0.00	0.01	0.01	0.02	0.00	0.02
Cristianitos	Intermittent	0.28	0.04	0.32	1.76	0.00	1.76
SAN MATEO CREEK[2]	Perennial	7.32	0.00	7.32	7.32	0.00	7.32
San Onofre Creek[2]	Perennial	0.90	0.00	0.90	0.90	0.00	0.90
TOTAL	**NA**	**8.98**	**2.33**	**11.31**	**13.27**	**0.01**	**13.28**

[1] These features are depicted on Exhibits 1 and 2.
[2] Feature subject to CCC jurisdiction.

4.8.2 FAR EAST CORRIDOR – MODIFIED – ULTIMATE ALTERNATIVE IMPACT TOTALS

The following impacts are based upon the FEC-M-Ultimate Alternative disturbance limits Permanent impacts are summarized in Table 4.8.2-1. Temporary impacts are summarized in Table 4.8.2-2.

The FEC-M – Ultimate Alternative will permanently impact approximately 6.02 acres subject to Corps jurisdiction. This total consists of 1.99 acres consist of wetland and 4.04 acres of non-wetland waters.

The FEC-M – Ultimate Alternative will temporarily impact approximately 12.06 acres subject to Corps jurisdiction. This total consists of 9.11 acres consist of wetland and 2.95 acres of non-wetland waters.

The FEC-M – Ultimate Alternative will permanently impact approximately 19.90 acres subject to CDFG jurisdiction. This total consists of 17.95 acres consist of vegetated riparian habitat and 1.95 acres of unvegetated streambed.

The FEC-M – Ultimate Alternative will temporarily impact approximately 14.35 acres subject to CDFG jurisdiction. This total consists of 14.34 acres consist of vegetated riparian habitat and 0.01 acres of unvegetated streambed.

The FEC-M – Ultimate Alternative will permanently impact approximately 0.35 acre subject to CCC jurisdiction. This total all consists of areas that qualify as CCC wetlands based on the presence of one parameter out of three possible parameters (soils, hydrology, plants).

The FEC-M – Ultimate Alternative will temporarily impact approximately 8.38 acres subject to CCC jurisdiction. This total all consists of areas that qualify as CCC wetlands based on the presence of one parameter out of three possible parameters (soils, hydrology, plants).

TABLE 4.8.2-1
PERMANENT JURISDICTIONAL IMPACTS
FAR EAST CORRIDOR – MODIFIED – UTLIMATE ALTERNATIVE
(in acres)

		Corps[2]			CDFG		
Jurisdictional Feature[1]	**Resource Type**	**Wetlands**	**Non-wetland Waters**	**Total**	**Vegetated**	**Unvegetated Streambed**	**Total**
FE/C/7-1	Ephemeral	0.00	0.03	0.03	0.47	0.02	0.49
FE/C/7-WETLAND 2	Slope Wetland	NA	NA	NA	NA	NA	NA
FE/7-1	Ephemeral	NA	NA	NA	1.56	0.04	1.60
FE/7-2	Intermittent	NA	NA	NA	0.29	0.02	0.31
FE-1	Ephemeral	NA	NA	NA	0.48	0.00	0.48
FE-2A	Ephemeral	NA	NA	NA	0.00	0.02	0.02
FE-2B	Ephemeral	0.00	0.07	0.07	0.00	0.07	0.07
FE-3	Intermittent	0.03	0.00	0.03	0.59	0.00	0.59
FE-5	Ephemeral	0.002	0.058	0.06	0.86	0.00	0.86
FE-6	Ephemeral	NA	NA	NA	0.36	0.02	0.38
FE-7	Intermittent	0.25	0.11	0.36	1.26	0.07	1.33
FEM-1	Ephemeral	0.08	0.45	0.53	1.15	0.08	1.23
FEM-3	Ephemeral	NA	NA	NA	0.69	0.02	0.71
FEM-5	Ephemeral	0.00	0.01	0.01	0.00	0.01	0.01
FEM-6	Ephemeral	0.00	0.01	0.01	0.00	0.01	0.01
FEM-8	Ephemeral	0.00	0.01	0.01	0.00	0.01	0.01
FEM-VM10	Depressional Wetland	0.04	0.00	0.04	NA	NA	NA
FEM-VM11	Depressional Wetland	0.04	0.00	0.04	NA	NA	NA
FEM-VM12	Depressional Wetland	0.03	0.00	0.03	NA	NA	NA
FEM-VP2	Depressional Wetland	0.18	0.00	0.18	NA	NA	NA
FEM-San Juan Creek	Intermittent	0.00	0.01	0.01	0.01	0.00	0.01
FEM-10	Ephemeral	0.34	0.00	0.34	0.34	0.00	0.34
FEM-10	Open Water	0.00	0.31	0.31	3.31	0.04	3.35
FEM-11	Ephemeral	0.00	0.18	0.18	0.96	0.09	1.05
FEM-12	Ephemeral	0.00	0.10	0.10	0.05	0.06	0.11

		Corps[2]			CDFG		
Jurisdictional Feature[1]	**Resource Type**	**Wetlands**	**Non-wetland Waters**	**Total**	**Vegetated**	**Unvegetated Streambed**	**Total**
FEM-13	Ephemeral	0.004	0.146	0.15	0.004	0.146	0.15
FEM-14	Ephemeral	0.00	0.05	0.05	0.00	0.05	0.05
FEM-15	Ephemeral	0.00	0.16	0.16	0.00	0.16	0.16
FEM-16	Ephemeral	0.00	0.05	0.05	0.56	0.00	0.56
FE/7-7	Intermittent	0.06	0.05	0.11	0.63	0.00	0.63
FE/7-8	Ephemeral	0.00	0.05	0.05	0.27	0.02	0.29
FE/7-8A	Ephemeral	0.00	0.01	0.01	0.00	0.01	0.01
FE/7-9	Ephemeral	0.00	0.06	0.06	0.00	0.06	0.06
FE/7-10	Ephemeral	0.00	0.03	0.03	0.00	0.03	0.03
FE/7-11	Perennial	0.12	0.37	0.49	0.76	0.00	0.76
FE/7-12	Intermittent	0.35	0.00	0.35	0.35	0.00	0.35
FE/7-12	Ephemeral	0.00	0.27	0.27	0.59	0.08	0.67
FE/7-14	Ephemeral	0.00	0.19	0.19	0.15	0.05	0.20
FE/7-VM18	Depressional Wetland	0.04	0.00	0.04	NA	NA	NA
FE/7-VM19	Depressional Wetland	0.06	0.00	0.06	NA	NA	NA
FE/7-15	Ephemeral	0.00	0.14	0.14	0.25	0.12	0.37
FE/7-16	Ephemeral	0.00	0.07	0.07	0.00	0.07	0.07
FE/7-17	Ephemeral	0.00	0.10	0.10	0.00	0.10	0.10
FE/7-18	Ephemeral	0.00	0.53	0.53	0.81	0.26	1.07
FE/7-19	Ephemeral	0.00	0.01	0.01	0.00	0.01	0.01
FE/7-20	Ephemeral	0.00	0.01	0.01	0.00	0.01	0.01
FE/7-21	Ephemeral	0.00	0.07	0.07	0.53	0.00	0.53
FE/7-22	Ephemeral	0.00	0.27	0.27	0.33	0.14	0.47
FE/7-23	Ephemeral	0.00	0.002	0.002	0.00	0.002	0.002
FE/7-24	Ephemeral	0.00	0.03	0.03	0.00	0.03	0.03
FE/7-25	Ephemeral	0.00	0.02	0.02	0.00	0.02	0.02
FE/7-SAN MATEO CREEK[3]	Perennial	0.12	0.00	0.12	0.12	0.00	0.12
FE/7-San Mateo Marsh East I5[3]	Freshwater Forested Wetland	0.00	0.00	0.00	0.21	0.00	0.21
FE/7-VM20[3]	Depressional Wetland	0.05	0.00	0.05	NA	NA	NA

		Corps[2]			CDFG		
Jurisdictional Feature[1]	**Resource Type**	**Wetlands**	**Non-wetland Waters**	**Total**	**Vegetated**	**Unvegetated Streambed**	**Total**
FE/7-VP3[3]	Depressional Wetland	0.18	0.00	0.18	NA	NA	NA
San Onofre Creek[3]	Perennial	0.01	0.00	0.01	0.01	0.00	0.01
TOTAL	**NA**	**1.99**	**4.04**	**6.02**	**17.95**	**1.945**	**19.90**

[1] These features are depicted on Exhibits 1 and 2.
[2] Refer to Appendix B for isolated features totals
[3] Feature subject to CCC jurisdiction.

TABLE 4.8.2-2
TEMPORARY JURISDICTIONAL IMPACTS
FAR EAST CORRIDOR – MODIFIED - ULTIMATE ALTERNATIVE
(in acres)

		Corps			CDFG		
Jurisdictional Feature[1]	**Resource Type**	**Wetlands**	**Non-wetland Waters**	**Total**	**Vegetated**	**Unvegetated Streambed**	**Total**
FE-3 (Canada Gobernadora)	Intermittent	0.14	0.00	0.14	0.68	0.00	0.68
FEM-SAN JUAN CREEK	Intermittent	0.37	2.90	3.27	3.27	0.00	3.27
FEM-Wetland 3	Depressional Wetland	0.07	0.00	0.07	0.07	0.00	0.07
FEM-6	Ephemeral	0.00	0.01	0.01	0.00	0.01	0.01
FEM-7	Ephemeral	0.00	0.01	0.01	0.02	0.00	0.02
Cristianitos	Intermittent	0.31	0.03	0.34	2.08	0.00	2.08
SAN MATEO CREEK[2]	Perennial	7.32	0.00	7.32	7.32	0.00	7.32
San Onofre Creek[2]	Perennial	0.90	0.00	0.90	0.90	0.00	0.90
TOTAL	**NA**	**9.11**	**2.95**	**12.06**	**14.34**	**0.01**	**14.35**

[1] These features are depicted on Exhibits 1 and 2.
[2] Feature subject to CCC jurisdiction.

5.0 DISCUSSION

The impacts described in Section 4.0 require authorization from the Corps, CDFG, and CCC as described below. The scope of RWQCB jurisdiction, beyond the CWA Section 404, is not settled.

5.1 CORPS REGULATIONS AND PROCEDURES

The discharge of dredged or fill material (temporarily or permanently) into waters of the United States requires prior authorization from the Corps pursuant to Section 404 of the Clean Water Act. Activities that usually involve a regulated discharge of dredged or fill materials include (but are not limited to) grading, placing of riprap for erosion control, pouring concrete, laying sod, preparing soil for planting (e.g., turning soil over, adding soil amendments[1]), stockpiling excavated material, mechanized removal of vegetation, and driving of piles for certain types of structures. Activities that do not involve a regulated discharge (if performed in a manner to avoid discharges) include excavation, placing a structure, driving pilings (for transportation structures), clearing of vegetation using hand held equipment and working above the ground surface, pumping water, and walking or driving vehicles.

Federal law recognizes wetlands and other waters of the United States as valuable natural resources. Therefore, federal agencies, principally the Corps, USFWS, and EPA strongly discourage activities within federal jurisdiction that alter aquatic habitats.

5.1.1 INDIVIDUAL SECTION 404 PERMITS

The Corps can only issue a permit for the discharge of dredged or fill material into waters of the United States for the Least Environmentally Damaging Practicable Alternative (LEDPA). A project alternative is considered practicable if: 1) it may be feasibly implemented after considering project cost and logistics; and 2) it fulfills the project purpose and need. The Corps cannot authorize a project alternative if there is another practicable alternative that would result in less impact to the aquatic environment, unless the alternative would have other significant adverse environmental consequences. A determination as to which alignment represents the LEDPA is to be determined through the NEPA/404 Integration Process.

[1] Similar planting activities associated with on-going farming operations may be exempt from regulation by Section 404(f) of the Clean Water Act.

5.2 CDFG REGULATIONS AND PROCEDURES

Unlike the Corps, CDFG regulates not only the discharge of dredged or fill material, but all activities that alter streams and lakes and their associated habitat. CDFG has no abbreviated permitting process comparable to the Corps nationwide permits. A CDFG 1602 Streambed Alteration Agreement is required for all activities resulting in impacts to streambeds and their associated riparian habitats.

A 1602 notification (application) will not be accepted by the CDFG until after an Environmental Impact Report (EIR) or Negative Declaration has been certified. CDFG generally requires that any impacts to streambeds and adjacent riparian habitats be fully mitigated. A mitigation plan should be submitted with the notification package.

5.3 CALIFORNIA COASTAL COMMISSION JURISDICTION

Potential CCC jurisdiction at the site may include all areas that are permanently or periodically inundated or saturated close to the soil surface occurring within the coastal zone. In addition, the CCC will consider indirect impacts due to shading where such impacts affect portions of wetlands or riparian habitat. Portions of San Mateo Creek, San Mateo Marsh east of Interstate-5, and San Onofre Creek as well as several ponding features that will not be impacted are located within the Coastal Zone. Approximately 0.92 acre of San Onofre Creek, 0.22 acre of San Mateo Marsh east of Interstate-5 and 7.56 acres of San Mateo Creek fall within the disturbance limits of the A7C-FEC-M, FEC-M and FEC-W Alternatives resulting in 8.71 acres of impact to CCC wetlands. Approximately 0.02 acre of San Mateo Creek falls within the disturbance limits of the CC Initial Alternative. FHWA will prepare a Federal Consistency determination to comply with the requirement that "each Federal agency activity within or outside the coastal zone that affects any land or water use or natural resource of the coastal zone shall be carried out in a manner which is consistent to the maximum extent practicable with the enforceable policies of approved State management programs." [Section 307(c)].

5.4 ISOLATED AQUATIC FEATURES

Pursuant to the *SWANCC* decision, the following aquatic features are not subject to Corps jurisdiction: C-Wetland 1, C-2, C-3, C-4, FE/C/7-2, FE/C/7-3, FE/C/7-4, FE/7-1, FE/7-2, FE-1, 7-3, 7-9, 7-10, 7-11, FE/C/7-Wetland 2, FE/7-4, FEM-Pond 1, FEM-VM 7, FEM-VM 8, FEM-3, FEM-2, FEW-1, FE-6, FE-4, C-Pond 1, FE-Wetland 1, FE-2A, FE-Pond 1, and portions of 7-2, 7-3, 7-13, FE/7-3, and FEM-17. For those waters determined to be within CWA jurisdiction, 401 certification will be required from the Regional Board as part of the 404 permit process. Jurisdiction over isolated features has not been determined

6.0 LITERATURE CITED

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SOCTIIP JURISDICTIONAL DELINEATION: 8/9/04 CDFG

700 350 0 700 Feet

N

KEY MAP

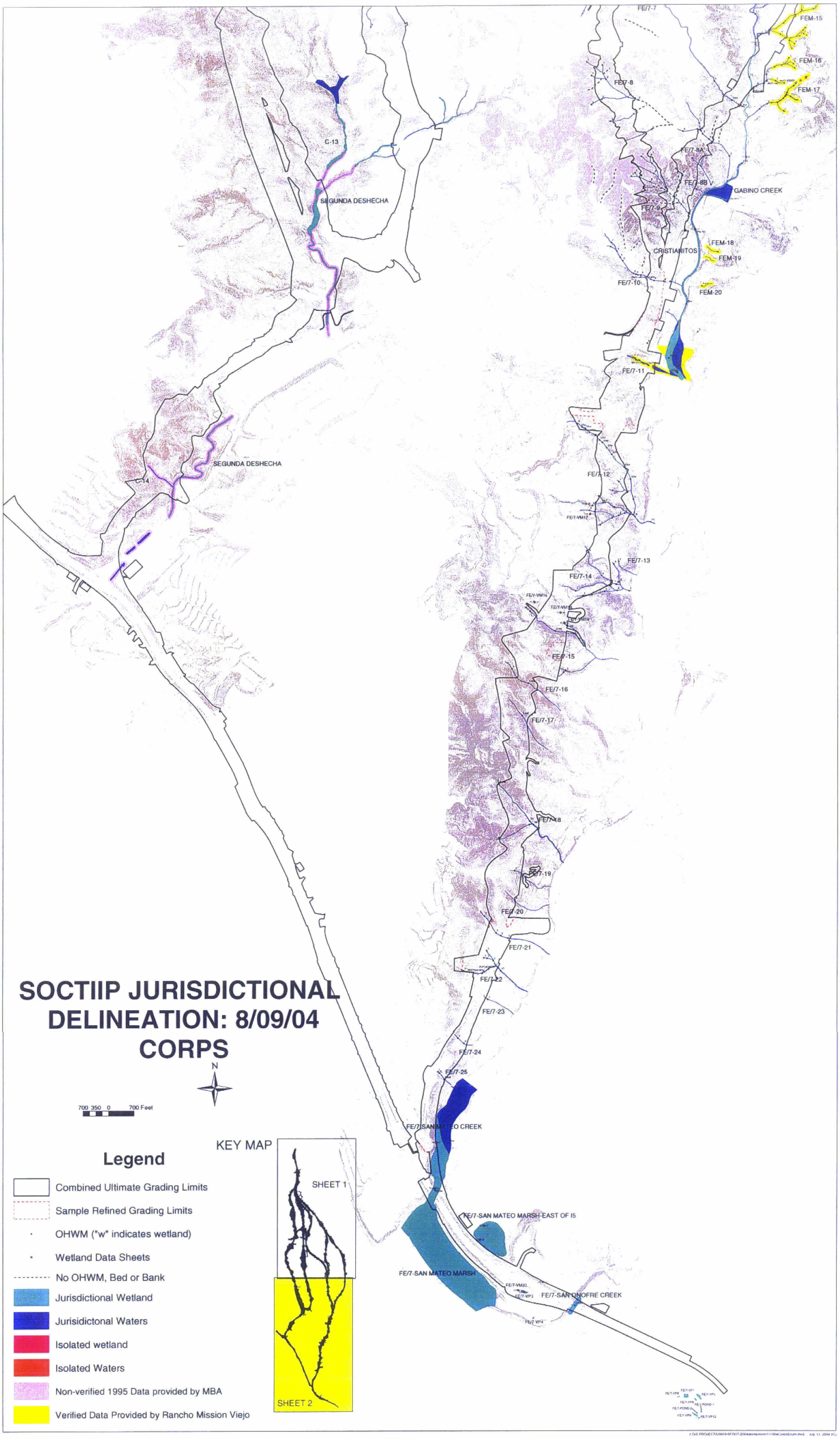
SHEET 1

SHEET 2

Legend

- Grading Limits
- Streambed Width ("R" indicates Riparian)
- No OHWM, Bed or Bank
- Unvegetated Streambed
- Riparian Vegetation
- Non-verified 1995 Data provided by MBA
- Verified Data Provided by Rancho Mission Viejo

FE/C/7-WETLAND 1
FE/C/7-1
FE/C/7-2
FE/C/7-3
FE/C/7-4
C-1
FE/7-1
FE/7-2
FE-1
C-2
C-3
CANADA CHIQUITA
FE-2
FE-2A
FE-2B
FE-3
7-1
7-2
FE-4
C-4
FE-5
C-5
7-3
FE-6
FEW-1
7-4
7-5
7-6
C-6
FE-7
FEM-1
7-7
C-SAN JUAN CREEK
7-San Juan Creek
C-6B
FEM-2
FEM-3
7-8
7-11
C-7
7-9
7-10
FEM-SAN JUAN CREEK
FEW- SAN JUAN CREEK
7-12
FEW-3
C-9
C-8
FEW-2
7-13
FEM-10
C-10
7-14
FE/7-3
C-11
FEM-11
7-15
FE/7-5
FE/7-4
FEM-12
C-12
FE/7-6
FEM-
7-16
FEM-14


SOCTIIP JURISDICTIONAL DELINEATION: 8/09/04 CORPS
N
700 350 0 700 Feet
Legend
Combined Ultimate Grading Limits
Sample Refined Grading Limits
OHWM ("w" indicates wetland)
Wetland Data Sheets
No OHWM, Bed or Bank
Jurisdictional Wetland
Jurisidictonal Waters
Isolated wetland
Isolated Waters
Non-verified 1995 Data provided by MBA
Verified Data Provided by Rancho Mission Viejo
KEY MAP
SHEET 1
SHEET 2
FE/7-7
FEM-15
FEM-16
FEM-17
FE/7-8
C-13
FE/7-8A
FE/7-8B
GABINO CREEK
SEGUNDA DESHECHA
FE/7-9
FEM-18
CRISTIANITOS
FEM-19
FE/7-10
FEM-20
FE/7-11
SEGUNDA DESHECHA
FE/7-12
FE/7-VM17
FE/7-13
FE/7-14
FE/7-VM16
FE/7-VM15
FE/7-VM19
FE/7-15
FE/7-16
FE/7-17
FE/7-18
FE/7-19
FE/7-20
FE/7-21
FE/7-22
FE/7-23
FE/7-24
FE/7-25
FE/7-SAN MATEO CREEK
FE/7-SAN MATEO MARSH-EAST OF I5
FE/7-SAN MATEO MARSH
FE/7-VM20
FE/7-VP3
FE/7-SAN ONOFRE CREEK
FE/7-VP4

SOCTIIP JURISDICTIONAL DELINEATION: 8/09/04 CORPS

Legend

- Combined Ultimate Grading Limits
- OHWM ("w" indicates wetland)
- Wetland Data Sheets
- No OHWM, Bed or Bank
- Jurisdictional Wetland
- Isolated wetland
- Non-verified 1995 Data provided by MBA
- Verified Data Provided by Rancho Mission Viejo
- Isolated Waters
- Jurisidictonal Waters
- Sample Refined Grading Limits
- Non-jurisdictional Feature

KEY MAP

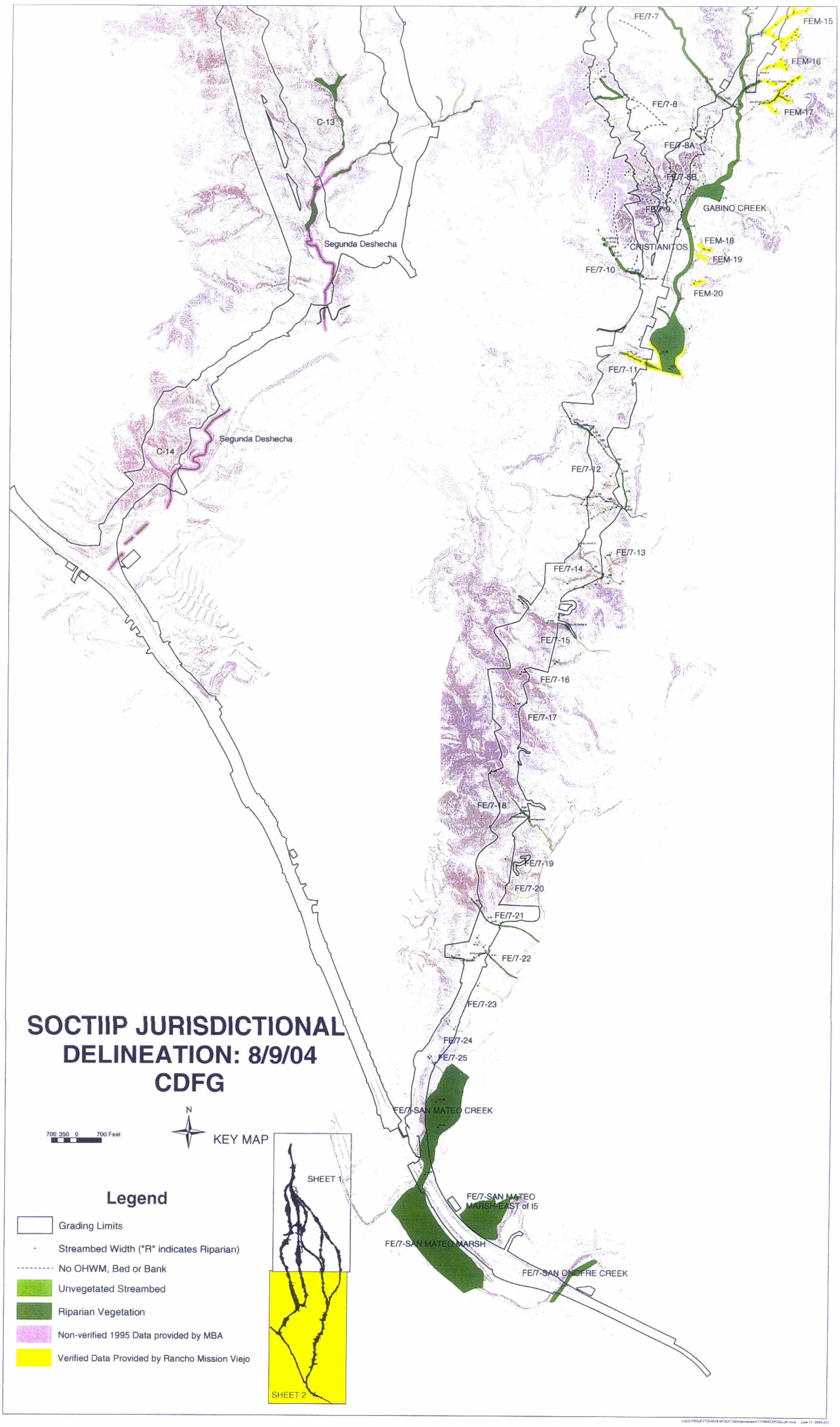
SHEET 1

SHEET 2

N

700 350 0 700 Feet

FE/C/7-WETLAND 1
FE/C/7-1
FE/C/7-WETLAND 2
FE/C/7-2
FE/C/7-3
FE/C/7-4
FE/7-1
FE/7-2
FE-1
C-1
C-WETLAND 1
C-2
C-3
FE-2
FE-WETLAND 1
FE-2A
FE-POND 1
FE-2B
FE-3
7-1
7-2
FE-4
FE-WETLAND 2
C-4
FE-5
CANADA CHIQUITA
FE-6
7-3
FEW-1
C-5
C-WETLAND 2
7-4
7-3
C-6
7-5
7-6
FE-7
FEM-1
C-SAN JUAN CREEK
7-7
C-POND 1
C-6B
7-SAN JUAN CREEK
7-8
FEM-2
FEM-3
7-9
7-11
C-7
C-8
7-10
7-12
FEW- SAN JUAN CREEK
FEM-SAN JUAN CREEK
C-9
FEM-10
FEW-2
7-13
FE/7-3
C-10
7-14
FE/7-3
C-11
FEM-11
FE/7-4
FE/7-5
7-15
FE/7-6
FEM-12
C-12
FEM-13
7-16
FEM-14


SOCTIIP JURISDICTIONAL DELINEATION: 8/9/04 CDFG
Legend
Grading Limits
Streambed Width ("R" indicates Riparian)
No OHWM, Bed or Bank
Unvegetated Streambed
Riparian Vegetation
Non-verified 1995 Data provided by MBA
Verified Data Provided by Rancho Mission Viejo
700 350 0 700 Feet
N
KEY MAP
SHEET 1
SHEET 2
C-13
C-14
Segunda Deshecha
Segunda Deshecha
FE/7-7
FE/7-8
FE/7-8A
FE/7-8B
FE/7-9
FE/7-10
FE/7-11
FE/7-12
FE/7-13
FE/7-14
FE/7-15
FE/7-16
FE/7-17
FE/7-18
FE/7-19
FE/7-20
FE/7-21
FE/7-22
FE/7-23
FE/7-24
FE/7-25
FE/7-SAN MATEO CREEK
FE/7-SAN MATEO MARSH-EAST of I5
FE/7-SAN MATEO MARSH
FE/7-SAN ONOFRE CREEK
GABINO CREEK
CRISTIANITOS
FEM-15
FEM-16
FEM-17
FEM-18
FEM-19
FEM-20

APPENDIX A

I. SUMMARY OF JURISDICTIONAL TOTALS FOR CORRIDOR STUDY AREAS

Jurisdictional totals for the study areas, which extend from 200 to 1000 feet beyond the disturbance limits of each alignment, are included in Appendix A along with detailed drainage descriptions. Jurisdictional totals strictly represent the surface area of each feature and do not include an assessment of the relative quality of each feature. It should be noted that many of the alternatives share common segments and, thus, have identical impacts along these shared segments. It is important, therefore, to recognize that areas of jurisdictional impact identified along one alternative may be common to multiple alternatives. In addition, the Corps, CDFG, and CCC regulate many of the same features, therefore, jurisdictional impact totals for the various agencies do overlap and should not be considered mutually exclusive.
The drainage descriptions below will only include a description of the applicable jurisdiction(s). Table A-1 provides a summary of the total area subject to regulation by Corps and CDFG located within the study areas. Table A-2 provides a summary of the total area subject to regulation by CCC within the study areas.

TABLE A-1
SUMMARY OF JURISDICTIONAL TOTALS FOR CORRIDOR STUDY AREAS
(in acres)

	CORPS		CDFG	
Alignment	**Total**	**Wetlands**	**Total**	**Vegetated**
CC	113.64	55.41	158.51	156.04
CC-ALPV	113.43	55.41	158.30	156.04
A7C-ALPV	165.64	71.59	247.07	242.37
A7C-FEC-M	207.96	133.28	309.07	300.21
FEC-W	178.25	109.81	315.90	307.86
FEC-M	212.18	138.28	341.15	332.68

TABLE A-2
SUMMARY OF CCC JURISDICTION FOR CORRIDOR STUDY AREAS
(in acres)

Feature	Total
SAN MATEO CREEK	17.44
SAN MATEO MARSH/EAST OF I-5	23.51
SAN MATEO MARSH/WEST OF I-5	68.55
FE/7-VP3	0.18
FE/7-VP4	0.03
FE/7-VM20	0.05
SAN ONOFRE CREEK WETLAND COMPLEX	5.30
TOTAL	**115.06**

A. TOTAL ARMY CORPS OF ENGINEERS JURISDICTION WITHIN CORRIDOR STUDY AREAS

Army Corps of Engineers (Corps) jurisdiction, as described more fully in Section 3.0, generally extends to the OHWM of features that discharge to navigable waters, in this case the Pacific Ocean, are tributary to features that discharge to navigable waters or are themselves considered a navigable water. In addition, features that are adjacent to jurisdictional waters and meet the Corps' definition of a wetland are also regulated by the Corps. All features that meet the above definitions are considered "waters of the US". The surface area that these features cover is subject to regulation by the Corps pursuant to Section 404 of the Clean Water act. Surface area is determined using the OHWM, which refers the lateral extent of stream flow occurring during a normal storm event or the area that meets the Corps' definition of a wetland. These limits are determined in the field based upon the field indicators described in Section 3.0. All waters are examined for wetland characteristic including the presence of vegetation adapted to sustained soil saturation and evidence of saturation occurring for at least 18 consecutive days including the presence of hydric soils, which are soils that exhibit indicators of saturation, and are either classified as wetland or non-wetland waters. Pursuant to SWANNC, Corps jurisdiction does not extent to features that exhibit no surface connection to other jurisdictional features. Total Corps jurisdiction listed below include all features within the disturbance limits of each alignment as well as all features within 200 to 1000 feet beyond the disturbance limits.

Approximately 113.64 acres within the CC study area are subject to Corps jurisdiction. This total consists of 55.41 acres of wetland and 58.23 acres of non-wetland waters.

Approximately 113.43 acres within the CC – ALPV study area are subject to Corps jurisdiction. This total consists of 55.41 acres of wetland and 58.02 acres of non-wetland waters.

Approximately 165.64 acres within the A7C – ALPV study area are subject to Corps jurisdiction. This total consists of 71.59 acres of wetland and 94.05 acres of non-wetland waters.

Approximately 207.96 acres within the A7C – FEC – M study area are subject to Corps jurisdiction. This total consists of 133.28 acres of wetland and 74.68 acres of non-wetland waters.

Approximately 178.28 acres within the FEC – W study area are subject to Corps jurisdiction. This total consists of 109.81 acres of wetland and 68.47 acres of non-wetland waters.

Approximately 212.18 acres within the FEC – M study area are subject to Corps jurisdiction. This total consists of 138.28 acres of wetland and 73.86 acres of non-wetland waters.

B. TOTAL CALIFORNIA DEPARTMENT OF FISH AND GAME JURISDICTION WITHIN CORRIDOR STUDY AREAS

California Department of Fish and Game (CDFG) jurisdiction, as described more fully in Section 3.0, extends to all lakes, streambeds and impoundments of streambeds regardless of contiguity with other jurisdictional features. The lateral extent of CDFG jurisdiction is based upon the presence of a bed and bank or riparian vegetation associated with the streambed. A detailed description of the methodology used to determine the extent of jurisdictional riparian habitat is included in Section 3.0. The total CDFG jurisdiction listed below include all features within the disturbance limits of each alignment as well as all features within 200 to 1000 feet beyond the disturbance limits.

Approximately 158.51 acres within the CC study area are subject to CDFG jurisdiction. This total consists of 156.04 acres of jurisdictional wetland and 2.47 acres of non-wetland waters.

Approximately 158.3 acres within the CC – ALPV study area are subject to CDFG jurisdiction. This total consists of 156.04 acres of jurisdictional wetland and 2.26 acres of non-wetland waters.

Approximately 247.07 acres within the A7C – ALPV study area are subject to CDFG jurisdiction. This total consists of 242.37 acres of jurisdictional wetland and 4.7 acres of non-wetland waters.

Approximately 308.99 acres within the A7C – FEC-M study area are subject to CDFG jurisdiction. This total consists of 300.17 acres of jurisdictional wetland and 8.82 acres of non-wetland waters.

Approximately 315.90 acres within the FEC-W study area are subject to CDFG jurisdiction. This total consists of 307.86 acres of jurisdictional wetland and 8.04 acres of non-wetland waters.

Approximately 341.15 acres within the FEC-M study area are subject to CDFG jurisdiction. This total consists of 332.68 acres of jurisdictional wetland and 8.47 acres of non-wetland waters.

C. CALIFORNIA COASTAL COMMISSION JURISDICTION WITHIN CORRIDOR STUDY AREAS

As detailed in Section 3.0, pursuant to the Coastal Act, California Coastal Commission (CCC) regulates the diking, filling or dredging of wetlands within the coastal zone. The Coastal Act defines wetlands as land "*which may be covered periodically or permanently with shallow water.*" Subsequent interpretive guidelines state that the "*presence or absence of hydric soils and/or hydrophytes alone are not necessarily determinative when the Commission identifies wetland under the Coastal Act.*" Therefore, CCC regulates impacts to all wetlands regulated by Corps and RWQCB, which require that three-parameters including vegetation, soils and hydrology are present in order for a feature to be classified as a wetland, as well as any features in which at least only one or two of the previous parameters is met. The total CCC jurisdiction listed below include all features within the disturbance limits of each alignment as well as all features within 200 to 1000 feet beyond the disturbance limits.

Approximately 0.02 acres within the CC study area are subject to CCC jurisdiction. This consists entirely of areas that qualify as CCC wetlands based on the presence of one parameter out of three possible parameters (soils, hydrology, plants)..

Approximately 115.06 acres within the A7C – FEC – M, FEC – W FEC – M and study areas are subject to CCC jurisdiction. This total consists entirely of areas that qualify as CCC wetlands based on the presence of one parameter out of three possible parameters (soils, hydrology, plants).

II. DETAILED BREAKDOWN OF STUDY AREA TOTALS BY CORRIDOR ALTERNATIVE

The following provides a detailed description of jurisdictional totals for the entire study area associated with each corridor alternative. These totals include all jurisdiction within the disturbance limits as well as all jurisdiction within 200 to 1000 feet beyond the disturbance limits.

A. CENTRAL CORRIDOR – COMPLETE STUDY AREA

Jurisdictional areas were generally not delineated for the Central Corridor – Complete (CC) alternative in 2001, with the exception of areas such as the wetland adjacent to Tesoro High School (designated as FE/C/7 Wetland), the Cañada Chiquita Wetland Complex (including tributaries), and San Juan Creek where changes from the 1995/1996 MBA Delineation were noted. Several jurisdictional areas associated with the CC Alignment were delineated for Rancho Mission Viejo. These areas have been verified by both the Corps and CDFG and are indicated on the delineation maps as verified. For all other areas, the jurisdictional totals were carried over from the 1995/1996 MBA Delineation. Drainage descriptions for the features that have not yet been verified have been extracted from the 1995/1996 MBA Delineation Report and are included below. Exhibit 1 depicts the location and extent of Corps jurisdictional areas. Exhibit 2 depicts the location and extent of CDFG jurisdictional areas.

Corps jurisdiction associated with the CC Alternative study area totals approximately 113.64 acres, of which 55.41 acres consist of jurisdictional wetlands. CDFG jurisdiction associated with the CC- Alternative study area totals 158.51 acres, of which 156.04 acres consist of vegetated riparian or wetland habitat. There is no jurisdiction associated with the portion of the CC-Alternative study area that is located within the Coastal Zone.

TABLE A-3
JURISDICTIONAL AREAS
CENTRAL CORRIDOR – COMPLETE STUDY AREA
(in acres)

	CORPS[2]		CDFG	
Jurisdictional Feature[1]	**Total**	**Wetlands**	**Total**	**Vegetated**
FE/C/7 WETLAND 1	12.62	12.62	12.62	12.62
FE/C/7-1	0.09	0.00	0.73	0.66
FE/C/7-2	0.00	0.00	0.02	0.00
FE/C/7-3	0.00	0.00	0.01	0.00
FE/C/7-4	0.00	0.00	0.02	0.00
FE/C/7-WETLAND 2	0.00	0.00	0.00	0.00
CANADA CHIQUITA	23.81	22.56	43.73	43.72
C-1	0.00	0.00	0.02	0.00
C-WETLAND 1	0.00	0.00	0.00	0.00
C-2	0.00	0.00	0.49	0.48
C-3	0.00	0.00	0.85	0.75
C-4	0.00	0.00	0.04	0.00
C-5	0.75	0.56	2.59	2.59
C-WETLAND 2	0.09	0.09	0.00	0.00
C-6	0.10	0.00	0.50	0.50
C-SAN JUAN CREEK	54.33	6.17	73.24	73.24
C-6B	0.01	0.00	0.01	0.00
C-POND 1	0.00	0.00	0.00	0.00
C-7	0.06	0.02	0.08	0.05
C-8	0.27	0.00	0.27	0.00
C-9	1.63	0.00	1.83	1.18
C-10	0.06	0.00	0.06	0.00
C-11	0.48	0.39	0.48	0.39
C-12	0.80	0.33	0.99	0.52
C-13	6.40	2.43	6.40	6.40
C-14	0.21	0.00	0.21	0.00
SEGUNDA DESHECHA	11.93	10.24	13.32	12.94
TOTAL	**113.64**	**55.41**	**158.51**	**156.04**

[1] These features are depicted on Exhibits 1 and 2.

[2] Refer to Appendix B for isolated features totals

Drainage FE/C/7-2

Drainage FE/C/7-2 consists of an approximately one-foot wide channel. It is an ephemeral drainage that originates within the disturbance limits of all alternatives and terminates in a broad swale within a disked field. The channel is vegetated with upland scrub.

The feature totals 0.02 acre of ephemeral channel. CDFG jurisdiction totals 0.02 acre, none of which consists of vegetated riparian habitat.

Drainage FE/C/7-3

Drainage FE/C/7-3 consists of an approximately one-foot wide channel. It is an ephemeral drainage that originates east of the disturbance limits common to all alternatives and terminates in a broad swale within a disked field. The channel is vegetated with upland scrub.

The feature totals 0.01 acre of ephemeral channel. CDFG jurisdiction totals 0.01 acre, none of which consists of vegetated riparian habitat.

Drainage FE/C/7-4

Drainage FE/C/7-4 consists of an approximately one-foot wide channel. It is an ephemeral drainage that originates east of the disturbance limits common to all alternatives and terminates in a broad swale within a disked field. The channel is vegetated with upland scrub.

The feature totals 0.02 acre of ephemeral channel. CDFG jurisdiction totals 0.02 acre, none of which consists of vegetated riparian habitat.

FE/C/7-Wetland 2

FE/C/7-Wetland 2 is a slope wetland vegetated with Mexican rush (*Juncus mexicanus*, FACW), bristly ox tongue (*Picris echioides*, FAC), Bermuda grass (*Cynodon dactylon*, FAC), and clustered field sedge (*Carex praegracilis*, FACW). Soils were saturated in the upper 12 inches and were characterized by gleyed color (2.5/N).

The feature totals 0.11 acre of wetland. Because this feature does not constitute a streambed or lake, it is not regulated by CDFG.

CAÑADA CHIQUITA

Cañada Chiquita is a broad canyon that generally runs in a north-south direction at Oso Parkway and extends for approximately 2 miles to San Juan Creek. The canyon includes a drainage course which supports a variety of associated (jurisdictional) wetland types including alkali marsh, alkali meadow, freshwater marsh and southern arroyo willow riparian forest. Specifically,

Cañada Chiquita is vegetated along the entire reach with freshwater species including southern cattail (*Typha domingensis*, OBL), Olney's bulrush (*Scirpus californicus*, OBL), Mexican rush (*Juncus mexicanus*, FACW), needle-stemmed spikerush (*Eleocharis acicularis*, OBL), water-cress (*Rorippa nasturtium-aquaticum*, OBL), rabbitsfoot grass (*Polypogon monspeliensis*, FACW+), rough vervain (*Verbena scabra*, OBL), and black willow (*Salix gooddingii*). The main channel is not clearly discernible immediately south of Oso Parkway where a wetland complex is located. This wetland complex serves as a groundwater discharge zone where groundwater from the Upper Chiquita (north of Oso Parkway) watershed is forced to the surface by bedrock resulting in the wetland area south of Oso Parkway. The groundwater originating in the Upper Chiquita watershed is fresh water, with electroconductivity of less than 800μ Mhos. Groundwater is also contributing to the 2 mile long system as evidenced by the many seeps located within the canyon. The brackish/alkali seeps, which typically exhibit an electroconductivity of between 1,500 and 2,500μ Mhos, also serve as groundwater discharge areas.

Corps jurisdiction totals 23.81 acres, of which 22.56 acres are wetlands. CDFG jurisdiction totals 43.73 acres, of which 43.72 acres consist of vegetated riparian habitat.

Drainage C-1

Drainage C-1 originates west of the CC disturbance limits and extends towards the east where it ends in ruderal vegetation. The channel bed is unvegetated sandy loam and its banks are vegetated with sage scrub. The presence of an OHWM was indicated by a change in soil character and destruction of terrestrial vegetation.

CDFG jurisdiction totals 0.02 acre, none of which consists of vegetated riparian habitat. The feature totals 0.02 acre of ephemeral channel.

C – Wetland 1

C – Wetland 1 is a slope wetland vegetated with beaked spikerush (*Eleocharis rostellata*, OBL), Mexican rush (*Juncus mexicanus*, FACW), Olney's bulrush (*Scirpus americanus*, OBL), clustered field sedge (*Carex praegracilis*, FACW-), saltgrass (*Distichlis spicata*, FACW), and rabbitsfoot grass (*Polypogon monspeliensis*, FACW+). Soils were saturated in the upper 12 inches and exhibited a sulfitic odor.

because the feature does not constitute a streambed or lake there is no CDFG jurisdictional acreage. The feature totals 0.40 acre of wetland.

Drainage C-2

Drainage C-2 varies from 1 to 6 feet in width. It originates to the west of the disturbance limits of the Central Corridor alternatives and extends east where it ends in ruderal vegetation. The upper reach of the drainage is vegetated with chaparral and exhibits an unvegetated channel bed.

The lower reach of the channel is vegetated with mulefat (*Baccharis salicifolia*, FACW), arroyo willow (*Salix lasiolepis*, FACW), upland bromes and coast live oak. The portion of the channel vegetated with mulefat and arroyo willow exhibits low chroma soils (10yr 3/2) with oxidized rhizospheres. CDFG jurisdiction totals 0.49 acre, of which 0.48 acre consists of vegetated riparian habitat. This feature totals 0.13 acre of wetland and 0.25 acre of ephemeral channel.

Drainage C-3

Drainage C-3 varies from 6 to 10 feet in width. It originates to the west of the disturbance limits of the Central Corridor alternatives and extends east where it ends in ruderal vegetation. The channel originates with a seep exhibiting standing water and vegetated with needle-stemmed spikerush (*Eleocharis acicularis*, OBL), water-cress (*Rorippa nasturtium-aquaticum*, OBL), rabbitsfoot grass (*Polypogon monspeliensis*, FACW+), Bermuda grass (*Cynodon dactylon*, FAC), Mexican rush (*Juncus mexicanus*, FACW), Olney's bulrush (*Scirpus americanus*, OBL) and cocklebur (*Xanthium strumarium*, FAC+). Soils exhibited a sulfitic odor. The lower portion of the drainage is vegetated with salt grass (*Distichlis spicata*, FACW) and mulefat (*Baccharis salicifolia*, FACW). The channel bed exhibits low chroma soils (10yr 3/2) with oxidized rhizospheres.

CDFG jurisdiction totals 0.85 acre, of which 0.75 acre consists of vegetated riparian habitat. This feature totals 0.68 acre of wetland and 0.02 acre of ephemeral channel.

Drainage C-4

Drainage C-4 originates west of the CC disturbance limits and extends towards the east where it ends in ruderal vegetation. The channel bed is unvegetated sandy loam and its banks are vegetated with lemonadeberry (*Rhus integrifolia*, UPL), California sagebrush (*Artemesia californica*, UPL) and California buckwheat (*Eriogonum fasciculatum*, UPL).

The presence of an OHWM was indicated by a change in soil character and destruction of terrestrial vegetation. CDFG jurisdiction totals 0.04 acre, of which none consists of vegetated riparian habitat. This feature totals 0.04 acre of ephemeral channel.

Drainage C-5

Drainage C-5 originates east of the disturbance limits of Central Corridor alternatives and extends west to discharge into Canada Chiquita. The channel varies from one to four feet in width and is generally unvegetated. The presence of an OHWM was indicated by sediment deposits. The banks of the upper reach are vegetated with coast live oak (*Quercus agrifolia*, UPL), mulefat (*Baccharis salicifolia*, FACW), upland bromes (*Bromus* spp., UPL) and coastal sage scrub. The lower reach of the drainage is adjacent to a slope wetland vegetated with Mexican rush (*Juncus mexicanus*, FACW), Emory's baccharis (*Baccharis emoryii*, FACW), yerba mansa (*Anemopsis californica*, OBL), Olney's bulrush (*Scirpus americanus*, OBL), curly

dock (*Rumex crispus*, FACW-), clustered field sedge (*Carex praegracilis*, FACW-), salt spring checkerbloom (*Sidalcea neomexicana*, FACW), witchgrass (*Panicum capillare*, FAC), cut-leaf water parsnip (*Berula erecta*, OBL), wrinkled rush (*Juncus rugulosis*, OBL), beaked spikerush (*Eleocharis rostellata*, OBL), salt grass (*Distichlis spicata*, FACW) and iris-leaved rush (*Juncus xiphioides*, OBL).

Corps jurisdiction totals 0.75 acre, of which 0.56 acre is wetlands. CDFG jurisdiction totals 2.59 acres, all of which consists of vegetated riparian habitat.

C – Wetland 2

C – Wetland 2 is a slope wetland vegetated with arroyo willow (*Salix lasiolepis*, FACW), Bermuda grass (*Cynodon dactylon*, FAC), Olney's bulrush (*Scirpus americanus*, OBL), tall cyperus (*Cyperus eragrostis*, FACW), bristly ox tongue (*Picris echioides*, FAC), mulefat (*Baccharis salicifolia*, FACW), brown cyperus (*Cyperus niger*, FACW+), Mexican rush (*Juncus mexicanus*, FACW), cut-leaf water parsnip (*Berula erecta*, OBL), clustered field sedge (*Carex praegracilis*, FACW-) and needle-stemmed spikerush (*Eleocharis acicularis*, OBL). The soil exhibited saturation in the upper 12 inches and a sulfitic odor.

There is no CDFG acreage that is jurisdictional. Corps jurisdiction totals 0.09 acre, all of which is wetland.

Drainage C-6

Drianage C-6 originates west of the disturbance limits of the CC alternatives and extends south to discharge into San Juan Creek. The channel varies from 2 to 5 feet in width and is generally unvegetated and composed of sand and cobbles. The banks of the channel are vegetated with mulefat scrub. The presence of an OHWM was indicated by sediment deposits and litter and debris.

Corps jurisdiction totals 0.10 acre, none of which is wetlands. CDFG jurisdiction totals 0.50 acre, all of which consists of vegetated riparian habitat

C - San Juan Creek

San Juan Creek is a major vegetated drainage including arroyo willow (*Salix lasiolepis*, FACW), mulefat (*Baccharis salicifolia*, FACW), western sycamore (*Platanus racemosa*, FACW) and coast live oak (*Quercus agrifolia*, NL). Low flow channels, which carry water throughout much of the year, are dominated by herbaceous cover including water-cress (*Rorippa nasturtium-aquaticum*, OBL), water speedwell (*Veronica anagallis-aquatica*, OBL), yellow waterweed (*Ludwigia peploides*, OBL), and knotgrass (*Paspalum distichum*, OBL).

Corps jurisdiction extends to the OHWM of the channel, which was indicated by a clear, natural line impressed on the bank, destruction of terrestrial vegetation, and the presence of litter and debris. Corps jurisdiction totals 54.33 acres, of which 6.17 acres are wetlands. CDFG jurisdiction totals 73.24 acres, all of which consists of vegetated riparian habitat.

Drainage C-6B

Drainage C-6B originates at a nursery to the south of San Juan Creek and to the west of the disturbance limits of the CC alternatives. The unvegetated channel measures approximately 3 feet in width and exhibits a loam and cobble bed. The banks are vegetated with coast live oak (*Quercus agrifolia*, UPL).

Corps jurisdiction totals 0.01 acre, of which none is wetlands. CDFG jurisdiction totals 0.01 acre, none of which consists of vegetated riparian habitat.

C – Pond 1

C – Pond 1 is an abandoned feature constructed in upland. At the time of the delineation the feature exhibited no standing water or saturated soils. The margin of the feature once supported mulefat and willows.

The feature exhibits no surface connection to San Juan Creek and has no jurisdictional features discharging into it. This feature totals 0.12 acre, none of which is wetland. Because this feature does not constitute a streambed or lake, there is no acreage subject to CDFG jurisdiction

Drainage C-7

Drainage C-7 is an incised channel which is approximately 3 feet wide. The channel bottom is generally unvegetated consisting of sand and cobbles. The banks of the channel are vegetated with non-native annual grasses. ACOE and CDFG jurisdiction extends to the OHWM which was indicated by shelving.

Corps jurisdiction totals 0.06 acre, of which 0.02 acre is wetlands. CDFG jurisdiction totals 0.08 acre, of which 0.05 acre consists of vegetated riparian habitat.

Drainage C-8

Drainage C-8 is an incised channel which varies in width from 3 to 4 feet. The channel bottom is generally unvegetated consisting of sand and cobbles. The banks of the channel are sparsely vegetated with coast live oak (*Quercus agrifolia*, NI) and mulefat (*Baccharis salcifolia*, FACW).

Corps jurisdiction extends to the OHWM which was indicated by destruction of terrestrial vegetation. Corps jurisdiction totals 0.27 acre, none of which is wetlands. CDFG jurisdiction totals 0.27 acre, none of which is vegetated riparian habitat.

Drainage C-9

Drainage C-9 is an incised channel approximately 2 feet in width. The channel bottom is generally unvegetated consisting of sand and cobbles. The banks of the channel are vegetated with western sycamore (*Platanus racemosa*, FACW) and coast lice oak (*Quercus agrifolia*, NI).

Corps jurisdiction extends to the OHWM which was indicated by destruction of terrestrial vegetation. Corps jurisdiction totals 1.63 acres, none of which are wetlands. CDFG jurisdiction totals 1.83 acres, of which 1.18 acres consist of vegetated riparian habitat.

Drainage C-10

Drainage C-10 is an incised channel which varies in width from approximately 1 to 3 feet. The channel bottom is generally unvegetated, consisting of sand. The banks of the channel are vegetated with coyote brush (*Baccharis pilularis*, NI), harding grass (*Phalaris aquatica*, FAC+), cardoon (*Cynara cardunculus*, NI), California sagebrush (*Artemisia* californica, NI), giant wild rye (*Leymus cindensatus*, NI) and mulefat (*Baccharis salicifolia*, FACW). ACOE and CDFG jurisdiction extends to the OHWM which was indicated by shelving. Corps jurisdiction totals 0.06 acre, none of which is wetlands. CDFG jurisdiction totals 0.06 acre, none of which is vegetated riparian habitat.

Drainage C-11

This drainage/wetland complex includes a shallow channel which drains into a man-made cattle pond. This drainage is approximately 3 feet in width. Dominant vegetation includes western sycamore (*Platanus racemosa*, FACW). Dominant vegetation in the pond includes mulefat (*Baccharis salicifolia*, FACW), cocklebur (*Xanthium strumarium*, FAC+), coyote brush (*Baccharis pilularis*, NI), tree tobacco (*Nicotinia glauca*, FAC) and lemonadeberry (*Rhus integrifolia*, NI).

CDFG jurisdiction totals 0.48 acre, of which 0.39 acre consists of vegetated riparian habitat. Corps jurisdiction totals 0.48 acre, of which 0.39 acre is wetland.

Drainage C-12

Drainage C-12 is a deeply incised channel that varies in width from approximately 2 to 4 ft. The channel bottom is sparsely vegetated with cocklebur (*Xanthium strumarium*, FAC+), white sweetclover (*Melilotus alba*, FACU+), cheeseweed (*Mava parviflora*, NI) and mulefat (*Baccharis salicifolia*, FACW). The banks are generally vegetated with mulefat (*Bacharis*

salicifolia, FACW), coyote bush (*Baccharis pilularis*, UPL) and giant wild rye (*Leymus condensatus*, UPL). The channel bed consists of a rocky, cobbly substrate. The presence of an OHWM was indicated by shelving and the destruction of terrestrial vegetation. One tributary of Drainage C-12 exhibited flowing water and supports western sycamore (*Platanus racemosa*, FACW), arroyo willow (*Salix lasiolepis*, FACW) and mulefat (*Baccharis salicifolia*, FACW). Dominant understory vegetation includes giant creek nettle (*Urtica dioica ssp. holosericea*, FACW), cut-leaf water parsnip (*Berula erecta*, OBL) and yellow waterweed (*Ludwigia peploides*, OBL).

Corps jurisdiction totals 0.80 acre, of which 0.33 acre is wetlands. CDFG jurisdiction totals 0.99 acre, of which 0.52 acre consists of vegetated riparian habitat.

Drainage C-13

Drainage C-13 originates east of the disturbance limits of the CC alternatives and includes a mitigation site vegetated with southern willow scrub. The channel below the mitigation site is incised and supports Bermuda grass (*Cynodon dactylon*, FAC), saltgrass (Distichlis spicata, FACW), cattails (Typha domingensis, OBL), Olney's bulrush (Scirpus americanus, OBL) and cocklebur (*Xanthium strumarium*, FAC+).

Corps jurisdiction extends to the OHWM of the channel which was indicated by shelving and destruction of terrestrial vegetation. Corps jurisdiction totals 6.4 acres, of which 2.43 acres are wetlands. CDFG jurisdiction totals 6.40 acre, all of which consists of vegetated riparian habitat.

Drainage C-14

Drainage C-14 is an incised channel which is approximately 6 feet. The channel bottom is generally unvegetated consisting of sand and cobbles. The banks of the channel are vegetated with non-native annual grasses.

Corps jurisdiction extends to the OHWM of the channel which was indicated by shelving and destruction of terrestrial vegetation. Corps jurisdiction totals 0.21 acre, none of which is wetlands. CDFG jurisdiction totals 0.21 acre, none of which is vegetated riparian habitat.

Segunda Deshecha

The upper portions of this drainage support southern willow scrub and coast live oak. The lower portions of this drainage support coastal fresh water marsh. The dominant vegetation includes southern cattail (*Typha domingensis*, OBL), brown cyperus (*Cyperus niger*, FACW+), water-cress (*Rorippa nasturtium-aquaticum*, OBL), cut-leaf water parsnip (*Berula erecta*, OBL). Portions of Segunda Deshecha are being expanded as mitigation for authorized impacts associated with Talega Planned Community. The 1994 data was updated to include these areas. The presence of hydric soil was assumed because all the dominant vegetation had an indicator

status of OBL or FACW and there was an abrupt change in topography. An indicator for wetland hydrology includes standing water. The reaches southwest of Avenida La Pata have been have been lined with concrete that has accumulated sufficient sediment to support patches of cattails.

Corps jurisdiction totals 11.93 acres, of which 10.24 acres are wetlands. CDFG jurisdiction totals 13.32 acres, of which 12.94 acres consist of vegetated riparian habitat.

B. CENTRAL CORRIDOR – AVENIDA LA PATA VARIATION STUDY AREA

Jurisdictional areas were generally not delineated for the Central Corridor – Avenida La Pata Variation (CC-ALPV) in 2001, with the exception of areas such as the wetland adjacent to Tesoro High School (designated as FE/C/7 Wetland), the Cañada Chiquita Wetland Complex (including tributaries), and San Juan Creek where changes from the 1995/1996 MBA Delineation were noted. Several jurisdictional areas associated with CC – ALPV were delineated for Rancho Mission Viejo. These areas have been verified by both the Corps and CDFG and are indicated on the delineation maps as verified. For all other areas, the jurisdictional totals were carried over from the 1995/1996 MBA Delineation after site reconnaissance indicated that no substantial changes were evident for the drainages south of San Juan Creek. Drainage descriptions for the features that have not yet been verified have been extracted from the 1995/1996 MBA Delineation Report and are included below. Exhibit 1 depicts the location and extent of Corps jurisdictional areas. Exhibit 2 depicts the location and extent of CDFG jurisdictional areas.

Corps jurisdiction associated with the CC-ALPV Alternative study area totals approximately 113.43 acres, of which 55.41 acres consist of jurisdictional wetlands. CDFG jurisdiction associated with the CC-Avenida La Pata Variation study area totals 158.30 acres, of which 156.04 acres consist of vegetated riparian or wetland habitat. There is no jurisdiction associated with CC- ALPV Alternative study area that is located within the Coastal Zone.

TABLE A-4
JURISDICTIONAL AREAS
CENTRAL CORRIDOR-AVENIDA LA PATA VARIATION STUDY AREA
(in acres)

	CORPS[2]		CDFG	
Jurisdictional Feature[1]	**Total**	**Wetlands**	**Total**	**Vegetated**
FE/C/7 WETLAND 1	12.62	12.62	12.62	12.62
FE/C/7-1	0.09	0.00	0.73	0.66
FE/C/7-2	0.00	0.00	0.02	0.00
FE/C/7-3	0.00	0.00	0.01	0.00
FE/C/7-4	0.00	0.00	0.02	0.00
FE/C/7-WETLAND 2	0.00	0.00	0.00	0.00
CANADA CHIQUITA	23.81	22.56	43.73	43.72
C-1	0.00	0.00	0.02	0.00
C-WETLAND 1	0.00	0.00	0.00	0.00
C-2	0.00	0.00	0.49	0.48
C-3	0.00	0.00	0.85	0.75
C-4	0.00	0.00	0.04	0.00
C-5	0.75	0.56	2.59	2.59
C-WETLAND 2	0.09	0.09	0.00	0.00
C-6	0.10	0.00	0.50	0.50
C-SAN JUAN CREEK	54.33	6.17	73.24	73.24
C-6B	0.01	0.00	0.01	0.00
C-POND 1	0.00	0.00	0.00	0.00
C-7	0.06	0.02	0.08	0.05
C-8	0.27	0.00	0.27	0.00
C-9	1.63	0.00	1.83	1.18
C-10	0.06	0.00	0.06	0.00
C-11	0.48	0.39	0.48	0.39
C-12	0.80	0.33	0.99	0.52
C-13	6.40	2.43	6.40	6.40
SEGUNDA DESHECHA	11.93	10.24	13.32	12.94
TOTAL	**113.43**	**55.41**	**158.30**	**156.04**

[1] These features are depicted on Exhibits 1 and 2.

[2] Refer to Appendix B for isolated features totals

B.1 DRAINAGE DESCRIPTIONS – CENTRAL CORRIDOR – AVENIDA LA PATA VARIATION STUDY AREA

CC-ALPV Alternative overlaps the CC Alternative. Please see CC Drainage Descriptions above.

C. ALIGNMENT 7 CORRIDOR – AVENIDA LA PATA VARIATION

Several jurisdictional areas associated with Alignment 7 Corridor - Avenida La Pata Variation – (A7C-ALPV) study area were delineated for Rancho Mission Viejo. These areas have been verified by both Corps and CDFG and are indicated on the delineation maps as verified. For all other areas, the jurisdictional totals were mapped in 2001. Exhibit 1 depicts the location and extent of Corps jurisdictional areas. Exhibit 2 depicts the location and extent of CDFG jurisdictional areas.

Corps jurisdiction associated with the A7C-ALPV Alternative study area totals approximately 165.64 acres, of which 71.59 acres consist of jurisdictional wetlands. CDFG jurisdiction associated with the A7C-ALPV Alternative study area totals 247.07 acres, of which 242.37 acres consists of vegetated riparian or wetland habitat. There is no jurisdiction associated with A7C-ALPV Alternative study area that is located within the Coastal Zone.

TABLE A-5
JURISDICTIONAL AREAS
ALIGNMENT 7 CORRIDOR – AVENIDA LA PATA VARIATION STUDY AREA
(in acres)

	CORPS[2]		CDFG	
Jurisdictional Feature[1]	**Total**	**Wetlands**	**Total**	**Vegetated**
FE/C/7 WETLAND 1	12.62	12.62	12.62	12.62
FE/C/7-1	0.09	0.00	0.73	0.66
FE/C/7 WETLAND 2	0.00	0.00	0.00	0.00
FE/C/7-2	0.00	0.00	0.02	0.00
FE/C/7-3	0.00	0.00	0.01	0.00
FE/C/7-4	0.00	0.00	0.02	0.00
FE/7-1	0.00	0.00	3.27	3.16
FE/7-2	0.00	0.00	0.57	0.48
FE-1	0.00	0.00	1.76	1.70
7-1	0.32	0.00	1.38	1.26
7-3	1.16	0.00	6.04	5.79
C-5	0.75	0.56	2.53	2.53
CANADA CHIQUITA	23.81	22.56	43.73	43.72
7-4	0.17	0.00	0.57	0.45
7-5	0.03	0.00	0.32	0.32
7-6	0.02	0.00	0.35	0.35
SAN JUAN CREEK – 7	52.69	19.28	70.06	70.06
SAN JUAN CREEK - C	54.33	6.17	73.24	73.24
7-8	0.12	0.00	2.21	2.19
7-9	0.00	0.00	1.30	1.27
7-10	0.00	0.00	0.28	0.00
7-13	6.99	0.14	11.26	8.64
7-14	0.21	0.00	0.30	0.11
7-15	0.18	0.02	0.20	0.04
7-16	0.22	0.00	0.98	0.84
SEGUNDA DESHECHA	11.93	10.24	13.32	12.94
TOTAL	**165.64**	**71.59**	**247.07**	**242.37**

[1] These features are depicted on Exhibits 1 and 2.

[2] Refer to Appendix B for isolated features totals

C.1 DRAINAGE DESCRIPTIONS – ALIGNMENT 7 CORRIDOR – AVENIDA LA PATA VARIATION STUDY AREA

Portions of the A7C-APLV Alternative overlap with the CC and CC-ALPV Alternatives. Please see drainage descriptions above for features that have been previously addressed.

Drainage FE/7-1

Drainage FE/7-1 varies in width from two to four feet. It is an ephemeral drainage that traverses the disturbance limits common to all alternatives except the CC alternatives and terminates in grassland approximately 2,000 feet from Cañada Chiquita. The banks of the channel in the upper portion of the drainage are vegetated with upland non-native grasses and/or coastal sage scrub. Beginning near the eastern limits of grading, a coast live oak-sycamore forest occupies the canyon and adjacent slopes. Dominant vegetation includes coast live oak (*Quercus agrifolia*, UPL) and western sycamore (*Platanus racemosa*, FACW) woodland with a dense blackberry (*Rubus ursinus*, FAC) and poison oak (*Toxicodendron diversilobum*, UPL) understory. The understory also supports mugwort (*Artemesia douglasiana*, FAC) and giant wild rye (*Leymus condensatus*, FACU). Riparian vegetation varies from 20 to 40 feet in width. The presence of an OHWM was indicated by change in soil character and destruction of terrestrial vegetation. As noted above, the drainage terminates in grassland approximately 2,000 feet from Chiquita Creek.

This feature totals 0.20 acre of ephemeral channel. CDFG jurisdiction totals 3.27 acre, of which 3.16 acre consists of vegetated riparian habitat.

Drainage FE/7-2

Drainage FE/7-2 varies from three to 32 feet in width and includes wetlands characterized by emergent vegetation. It originates at a seep and traverses the disturbance limits common to all alternatives (except the Central Corridor alternatives). The channel bed is characterized by low chroma clay soil with high chroma mottles. Dense emergent vegetation precludes establishment of a clear OHWM. Dominant plants include Olney's bulrush (*Scirpus americanus*, OBL), beaked spikerush (*Eleocharis rostellata*, OBL), creeping spikerush (*Eleocharis macrostachya*, OBL), western ragweed (*Ambrosia psilostachya*, FAC), wild lettuce (*Lactuca serriola*, FAC) water-parsnip (*Berula erecta*, OBL), knotgrass (*Paspalum distichum*, OBL), umbrella sedge (*Cyperus niger*, FACW), and rabbitsfoot grass (*Polypogon monspeliensis*, FACW). The seep at the beginning of the drainage supports saltgrass (*Distichlis spicata*, FACW) and Mexican rush (*Juncus mexicanus*, FACW).

The northern tributary to Drainage FE/7-2 varies in width from one to two feet. The tributary traverses the alignment to join FE/7-2, which terminates in grassland.. The banks of the tributary are vegetated with upland scrub including buckwheat (*Eriogonum fasciculatum*, UPL), poison oak (*Toxicodendron diversilobum*, UPL), lemonade berry (*Rhus integrifolia*, UPL), coyote brush (*Baccharis pilularis*, UPL), and Mexican elderberry (*Sambucus mexicana*, FACU) with an

occasional oak (*Quercus agrifolia,* UPL) and a few scattered mule fat (*Baccharis salicifolia,* FACW). Located near its origin is a 34-foot by 24-foot wetland with low chroma, saturated soil and vegetated with mule fat (*Baccharis salicifolia,* FACW), lemonade berry (*Rhus integrifolia,* UPL), Bulrush (*Scirpus americanus,* OBL), Mexican rush (*Juncus mexicanus,* FACW), and yerba mansa (*Anemopsis californicus,* OBL).

This feature consists of 0.36 acres of wetlands and 0.14 acre of ephemeral channel. CDFG jurisdiction totals 0.57 acres, of which 0.48 acre consists of vegetated habitat.

Drainage FE-1

Drainage FE-1 varies from two to four feet in width. The channel originates east of the alignment and traverses the disturbance limits common to all alternative (except the Central Corridor alternatives) until the bed and bank terminates in grassland approximately a half mile from Cañada Chiquita. The drainage supports oak (*Quercus agrifolia,* UPL) woodland with western ragweed (*Ambrosia psilostachya,* FAC), scattered sedges (*Carex*), lemonade berry (*Rhus integrifolia,* UPL), and Mexican elderberry (*Sambucus mexicanus,* FACU) in the understory. The oak canopy averages 40 to 60 feet in width.

CDFG jurisdiction totals 1.76 acre, of which 1.70 acre consists of vegetated riparian habitat. This feature totals 0.16 acre of ephemeral channel.

Drainage 7-1

Drainage 7-1 is an incised ephemeral channel that varies in width from three to five feet. It traverses the disturbance limits where it enters a cement lined channel at the Santa Margarita Water District water treatment plant. The channel bottom consists of loamy sand and is vegetated with arroyo willow (*Salix lasiolepis,* FACW), mule fat (*Baccharis salicifolia,* FACW), and coyote brush (*Baccharis pilularis,* UPL). The banks are vegetated with native needlegrass (*Nassella pulchra,* UPL) and western ragweed (*Ambrosia psilostachya,* FAC). The limits of the channel were limited to the OHWM of the channel was indicated by changes in soil characteristics and destruction of terrestrial vegetation. Riparian vegetation varied from 10 to 35 feet in width.

Corps jurisdiction is 0.32 acre. CDFG associated with the channel totals 1.38 acre, of which 1.26 acres consist of southern riparian scrub dominated by willow and mule fat.

Drainage 7-3

Drainage 7-3 located to the east of the A7C FEC-M alignment where it extends eastward to join another ephemeral drainage that extends to San Juan Creek. The main channel varies from one to four feet wide. The channel is incised and clearly defined by bed and bank, sediment deposits, debris racks, and destruction of terrestrial vegetation. The channel is vegetated with patches of

mule fat (*Baccharis salicifolia*, FACW), coast live oak (*Quercus agrifolia*, UPL), and annual grassland. Scattered western sycamores (*Platanus racemosa*, FACW) and arroyo willows (*Salix laseolepis*, FACW) occur throughout the main channel. Several ephemeral tributaries enter the main channel within the alignment. These tributaries are generally vegetated with annual grassland or ruderal vegetation.

A few ephemeral side channels occur in association with this drainage system in which the OHWM terminates within broad swales.

Corps jurisdiction totals 1.16 acres, none of which are wetlands. CDFG jurisdiction totals 6.04 acres, of which 5.79 acres consist of vegetated riparian habitat

Drainage 7-4

Drainage 7-4 and its tributary vary in width from one to five feet. Drainage 7-4 originates west of the A7C – ALPV alignment and extends south, parallel to the disturbance limits and discharges into San Juan Creek through a culvert. The upstream reaches of both channels are vegetated with coastal sage scrub and chaparral including buckwheat (*Eriogonum fasciculatum*, UPL), California sagebrush (*Artemesia californica*, UPL), monkey flower (*Mimulus aurantiacus*, UPL), poison oak (*Toxicodendron diversilobum*, UPL), and lemonade berry (*Rhus integrifolia*, UPL). Its bed is vegetated with primarily non-native grasses, curly dock (*Rumex crispus*, FACW-), and rabbitsfoot grass (*Polypogon monspeliensis*, FACW). The lower reach of the drainage is vegetated with oak woodland that averages 40 feet in width.

Corps jurisdiction totals 0.17 acre, none of which are wetlands. CDFG jurisdiction totals 0.57 acre, of which 0.45 acre consists of vegetated riparian habitat.

Drainage 7-5

Drainage 7-5 is located to the east of the A7C – ALPV alignment. The drainage varies from one to three feet wide and has a channel composed of boulders and coarse sandy loam. It is vegetated with coast live oak (*Quercus agrifolia*, UPL), lemonade berry (*Rhus integrifolia*, UPL), poison oak (*Toxicodendron diversilobum*, UPL), sycamore (*Platanus racemosa*, FACW), Italian thistle (*Carduus pycnocephalus*, UPL), Mexican elderberry (*Sambucus mexicanus*, FACU), non-native grass (*Bromus sp., NI*), bull thistle (*Cirsium vulgare*, FACU), and nightshade (*Solanum douglasii*, FAC). The oak canopy averages 60 feet in width. The attributes associated with an OHWM included the destruction of terrestrial vegetation and shelving.

Corps jurisdiction associated with the channel totals 0.03 acres. CDFG jurisdiction totals 0.32 acre, all of which consists of oak riparian habitat.

Drainage 7-6

Drainage 7-6 is located to the east of the A7C-FEC-M alignment. The drainage varies from one to three feet wide and has a channel composed of boulders and coarse sandy loam. It is vegetated with coast live oak (*Quercus agrifolia,* UPL), lemonade berry (*Rhus integrifolia,* UPL), poison oak (*Toxicodendron diversilobum,* UPL), sycamore (*Platanus racemosa,* FACW), Italian thistle (*Carduus pycnocephalus,* UPL), Mexican elderberry (*Sambucus mexicanus,* FACU), non-native grass (*Bromus sp., NI*), bull thistle (*Cirsium vulgare,* FACU), and nightshade (*Solanum douglasii,* FAC). The oak canopy averages 60 feet in width.

The attributes associated with an OHWM included the destruction of terrestrial vegetation and shelving. Corps jurisdiction associated with the channel totals 0.02 acre. CDFG jurisdiction totals 0.35 acre, of which all consists of oak riparian habitat.

San Juan Creek-7

San Juan Creek traverses the A7C alternative alignments from east to west. The channel varies from 350 to 500 feet in width within which is included a linear strip of wetland from that varies from 30 to 60 feet wide. The channel includes many low flow braids that are unvegetated as well as some slightly raised vegetated areas with the presence of litter and debris. The channel consists primarily of cobble and clean sand. A low flow channel exhibited base flow in August and was vegetated with cattail (*Typha domingensis,* OBL), knotgrass (*Paspalum distichum,* OBL), yellow waterweed (*Ludwigia peploides,* OBL), water speedwell (*Veronica anagallis-aquatica,* OBL), arroyo willow (*Salix lasiolepis,* FACW), watercress (*Rorippa nasturtium-aquatica,* OBL), and smooth bur marigold (*Bidens laevis,* OBL). Soil within the wetland was gleyed sand with a sulfidic odor. To either side of the wetland, a sand and cobble bed was vegetated with bicolored cudweed (*Gnathalium bicolor,* UPL), scale broom (*Lepidospartum squamatum,* UPL), occasional deerweed (*Lotus scoparius,* UPL), telegraph weed (*Heterotheca grandiflora,* UPL) and mule fat (*Baccharis salicifolia,* FACW). Black cottonwood (*Populus balsamifera trichocarpa,* FACW), sycamore (*Platanus racemosa,* FACW), and giant reed (*Arundo donax,* FACW) were common closer to the banks. Attributes associated with an OHWM included shelving, destruction of terrestrial vegetation, change in soil character and the presence of litter and debris. Sycamore and willow riparian vegetation varies from 400 to 900 feet in width.

Corps jurisdiction associated with the channel totals 54.33 acres, of which 6.17 acres are jurisdictional wetlands. CDFG jurisdiction associated with the channel totals 73.24 acres all of which consists of riparian habitat.

Drainage 7-8

Ephemeral Drainage 7-8 is a deeply incised channel that varies in width from one to five feet. It originates west of the A7C-ALPV alignment and extends northeast, crosses Ortega Highway

through a culvert and then terminates in a mosaic of nonnative grassland, sycamore woodland and mule fat scrub approximately 700 feet from San Juan Creek. The drainage exhibits no surface tributary connection with San Juan Creek or other jurisdictional waters. Where it is evident, the channel bottom is generally unvegetated consisting of sand, cobbles and leaf litter. The banks of the channel are vegetated with coast live oak (*Quercus agrifolia,* UPL), poison oak (*Toxicodendron diversilobum,* UPL), toyon (*Heteromeles arbutifolia,* UPL), nightshade (*Solanum americanum,* FAC), mugwort (*Artemesia douglasiana,* FAC), bristly ox tongue (*Picris echioides,* FAC), fennel (*Foeniculum vulgare,* FACU), cardoon (*Cynara cardunculus,* UPL), black mustard (*Brassica nigra,* UPL), mule fat (*Baccharis salicifolia,* FACW), Mexican elderberry (*Sambucus mexicanus,* FACU), Italian thistle (*Carduus pycnocephalus,* UPL), and a single black willow (*Salix gooddingii,* OBL).

Corps jurisdiction extends to the OHWM of the channel, which was indicated by destruction of terrestrial vegetation, shelving and change in soil character. The riparian vegetation varies from 9 to 100 feet in width. Corps jurisdiction is limited to the 0.12 acre channel. CDFG jurisdiction associated with the channel totals 2.21 acres, of which 2.19 acres consist of riparian habitat.

Drainage 7-9

Drainage 7-9 originates within the disturbance limits of the A7C-ALPV alternative and extends northward where it discharges beneath Ortega Highway through a culvert. It is moderately incised, varying in width from two to four feet. It terminates, approximately 1,000 feet from San Juan Creek, in a mosaic of grassland and mule fat scrub shortly after passing through a culvert under Ortega Highway. The drainage exhibits no surface tributary connection with San Juan Creek or other jurisdictional waters. The channel bottom is mainly unvegetated consisting of sand or silty clay loam, cobbles and leaf litter. The banks are vegetated with coast live oaks (*Quercus agrifolia,* UPL), toyon (*Heteromeles arbutifolia,* UPL), poison oak (*Toxicodendron diversilobum,* UPL), mugwort (*Artemsia douglasiana,* FAC), Italian thistle (*Carduus pycnocephalus,* UPL), and bull thistle (*Cirsium vulgare,* FACU). The limits of the channel were indicated by shelving and destruction of terrestrial vegetation.

The oak riparian canopy varies from 35 to 60 feet in width. CDFG jurisdiction associated with the channel totals 1.30 acre, of which 1.27 acres consists of oak riparian habitat.

Drainage 7-10

Drainage 7-10 originates within the disturbance limits of the A7C – FEC–M alternative and extends under Ortega Highway where it disappears in grassland before reaching San Juan Creek. The channel is approximately three feet wide. The channel is deeply incised and the channel bed contains large boulders and cobbles. It is vegetated with scattered non-native grasses and toyon (*Heteromeles arbutifolia,* UPL), poison oak (*Toxicodendron diversilobum,* UPL), coyote bush (*Baccharis pilularis,* UPL), western ragweed (*Ambrosia psilostachya,* FAC), Mexican elderberry

(*Sambucus mexicana*, FACU), cudweed (*Gnaphalium canescens*), California sagebrush (*Artemesia californica*, UPL), and laurel sumac (*Malosma laurina*, UPL).

The channel bed was not accessible, therefore OHWM was estimated from destruction of terrestrial vegetation. CDFG jurisdiction totals 0.28 acre, none of which consists of vegetated riparian habitat.

Drainage 7-13

Drainage 7-13 originates as a series of tributaries merging on the southern (western) portion of the disturbance limits of the A7C – FEC – M alternative and traversing through the alignment. It is relatively incised and vegetated with oak woodland with ephemeral tributaries in sage scrub. The OHWM of one northwestern tributary ends in ruderal grassland. The eastern tributary contains an unvegetated sediment basin utilized by mining operations. The drainage is vegetated with mulefat and oak woodland or unvegetated in scrub.

Corps jurisdiction totals 6.99 acres, of which 0.14 acres are wetlands. CDFG jurisdiction totals 11.26 acres, of which 8.64 acres consist of vegetated riparian habitat. This feature totals 6.95 acres of ephemeral channel and 0.14 acre of wetland.

Drainage 7-14

Drainage 7-14 consists of an incised channel that varies from one to three feet in width. The channel originates within the disturbance limits of the A7C – ALPV alternative and extends to the west through a culvert under La Pata Road and into San Juan Creek. The channel is trampled in some areas from cattle. Such areas are dominated by non-native herbs, such as wild oats (*Avena sp., UPL*), cardoon (*Cynara cardunculus, UPL*), bull thistle (*Cirsium vulgare, FACU*), mustard (*Brassica nigra, UPL*), tocalote (*Centaurea melitensis, UPL*), and cudweed (*Gnaphalium canescens, UPL*), but also contain goldenbush (*Isocoma menziesii, UPL*), coyote brush (*Baccharis pilularis, UPL*) and mulefat (*Baccharis salicifolia, FACW*). The lower reaches are dominated by coast live oak (*Quercus agrifolia, UPL*) and various coastal sage scrub species including California sagebrush (*Artemesia californica, UPL*) and monkey flower (*Mimulus aurantiacus, UPL*). The oak riparian canopy averages 30 feet in width while the mulefat scrub averages 21 feet wide. The banks of the upper reaches are vegetated with coastal sage scrub including California sagebrush (*Artemesia californica, UPL*), monkey flower (*Mimulus aurantiacus, UPL*), giant wild rye (*Leymus condesatus*), western ragweed (*Ambrosia psilostachya, FAC*), mustard (*Brassica nigra, UPL*) and Italian rye (*Lolium multiflorum, FAC*).

Corps jurisdiction extends to the OHWM of the channel, which was indicated by destruction of terrestrial vegetation. Corps jurisdiction totals 0.21 acre, none of which is wetlands. CDFG jurisdiction totals 0.30 acre, of which 0.11 acre consists of vegetated riparian habitat.

Drainage 7-15

Drainage 7-15 originates within the disturbance limits of the A7C – ALPV alternative and extends westward to join Prima Deshecha. The channel varies from one to three feet in width and contains a wetland swale supporting Italian rye (*Lolium multiflorum, FAC*) and saltgrass (*Distichalis spicata, FACW*). The channel bed within the wetland swale was composed of low chroma silty clay soil with oxidized root channels. The remainder of the drainage supports cocklebur (*Xanthium strumarium, FAC+*), mustard (*Brassica nigra, UPL*), bristly ox tongue (*Picris echioides, FAC*), cardoon (*Cynara cardunculus, UPL*), wild oats (*Avena sp., UPL*), Italian thistle (*Carduus pycnocephalus, UPL*), prickly lettuce (*Latuca serriola, FAC*), scattered sunflower (*Helianthus annuus*), western ragweed (*Ambrosia psilostachya, FAC*), milkweed (*Ascelpias fascicularis, FAC*), scattered coyote brush (*Baccharis pilularis, UPL*), goldenbush (*Isocoma menzesii*, UPL), and mulefat (*Baccharis salicifolia, FACW*) and ripgut brome (*Bromus diandrus, NI*). The channel bed is primarily composed of boulders, cobbles and silty clay.

Where discernible, the presence of an OHWM was indicated by change in soil character and destruction of terrestrial vegetation. Where discernible, the presence of an OHWM was indicated by the destruction of terrestrial vegetation. Corps jurisdiction totals 0.18 acre, of which 0.02 acre is wetlands. CDFG jurisdiction totals 0.20 acre, of which 0.04 acre consists of vegetated riparian habitat.

Drainage 7-16

Drainage 7-16 originates east of the disturbance limits of the A7C – ALPV alternative. The channel bed is composed of high chroma silty clay loam channel. Where discernible, the channel varies from one to two feet in width and is vegetated with a predominance of non-native species including cardoon (*Cynara cardunculus, UPL*), mustard (*Brassica nigra, UPL*), bristly ox tongue (*Picris echioides, FAC*), wild oats (*Avena sp., UPL*), ripgut brome (*Bromus diandrus, NI*) and well as mulefat (*Baccharis salicifolia*, FACW), giant wild rye (*Leymus condensatus, FACU*), goldenbush (*Isocoma menzesii, UPL*), lemonadeberry (*Rhus integrifolia*, UPL) and coyote brush (*Baccharis pilularis, UPL*).

Where discernible, the presence of an OHWM was indicated by destruction of terrestrial vegetation. There was no OHWM in most areas. Corps jurisdiction totals 0.22 acre, of which none are wetlands. CDFG jurisdiction totals 0.98 acre, of which 0.84 acre consists of vegetated riparian habitat.

Segunda Deshecha

The upper portions of this drainage support southern willow scrub and coast live oak. The lower portions of this drainage support coastal fresh water marsh. The dominant vegetation includes southern cattail (*Typha domingensis*, OBL), brown cyperus (*Cyperus niger*, FACW+), water-cress (*Rorippa nasturtium-aquaticum*, OBL), cut-leaf water parsnip (*Berula erecta*, OBL).

Portions of Segunda Deshecha are being expanded as mitigation for authorized impacts associated with Talega Master Planned community. The 1994 data has been updated to include these areas. The presence of hydric soil was assumed because all the dominant vegetation had an indicator status of OBL or FACW and there was an abrupt change in topography. Indicator for wetland hydrology included standing water. The reaches southwest of Avenida La Pata have been have been lined with concrete that has accumulated sufficient sediment to support patches of cattails.

Corps jurisdiction totals 11.93 acres, of which 10.24 acres are wetlands. CDFG jurisdiction totals 13.32 acres, of which 12.94 acres consist of vegetated riparian habitat.

D. ALIGNMENT 7 CORRIDOR - FAR EAST CROSSOVER –MODIFIED STUDY AREA

Several jurisdictional areas associated with Alignment 7 Corridor - Far East Crossover – Modified (A7C-FEC-M) study area were delineated for Rancho Mission Viejo. These areas have been verified by both Corps and CDFG and are indicated on the delineation maps as verified. For all other areas, the jurisdictional totals were mapped in 2001 and 2003. Exhibit 1 depicts the location and extent of Corps jurisdictional areas. Exhibit 2 depicts the location and extent of CDFG jurisdictional areas.

Corps jurisdiction associated with the A7C-FEC-M Alternative study area totals approximately 207.87 acres, of which 133.23 acres consist of jurisdictional wetlands. CDFG jurisdiction associated with the A7C-FEC-M Ultimate Alternative study area totals 309.07 acres, of which 300.21 acres consists of vegetated riparian or wetland habitat. CCC jurisdiction associated with the A7C-FEC-M Alternative study area totals approximately 115.06 acres, all of which consist of one-parameter wetlands.

TABLE A-6
JURISDICTIONAL AREAS
ALIGNMENT 7 CORRIDOR – FAR EAST CROSSOVER – MODIFIED STUDY AREA
(in acres)

	CORPS[2]		CDFG	
Jurisdictional Feature[1]	**Total**	**Wetlands**	**Total**	**Vegetated**
FE/C/7 WETLAND 1	12.62	12.62	12.62	12.62
FE/C/7-1	0.09	0.00	0.73	0.66
FE/C/7 WETLAND 2	0.00	0.00	0.00	0.00
FE/C/7-2	0.00	0.00	0.02	0.00
FE/C/7-3	0.00	0.00	0.01	0.00
FE/C/7-4	0.00	0.00	0.02	0.00
FE/7-1	0.00	0.00	3.27	3.16
FE/7-2	0.00	0.00	0.57	0.48
7-1	0.32	0.00	1.38	1.26
7-2	0.02	0.00	0.06	0.00
7-3	1.16	0.00	6.04	5.79
C-5	0.75	0.56	2.53	2.53
7-4	0.17	0.00	0.57	0.45
7-5	0.03	0.00	0.32	0.32
7-6	0.02	0.00	0.35	0.35
7-7	1.10	0.48	2.44	2.44
SAN JUAN CREEK – 7/WETLAND COMPLEX	52.69	19.28	70.06	70.06
7-8	0.12	0.00	2.21	2.19
7-9	0.00	0.00	1.30	1.27
7-10	0.00	0.00	0.28	0.00
7-11	0.00	0.00	0.03	0.00
7-12	0.11	0.00	1.94	1.94
7-13	6.99	0.14	11.26	8.64
FE/7-3	4.14	0.03	11.97	10.01
FE/7-4	0.00	0.00	2.47	2.38
FE/7-5	0.00	0.00	0.02	0.00
FE/7-6	0.36	0.00	2.17	1.95
FE/7-7	1.36	0.09	11.55	11.19
FE/7-8	0.43	0.00	2.91	2.62
FE/7-9	0.18	0.00	0.18	0.00
FE/7-10	0.31	0.00	2.90	2.76
FE/7-11	1.10	0.12	1.35	1.35

	CORPS[2]		CDFG	
Jurisdictional Feature[1]	**Total**	**Wetlands**	**Total**	**Vegetated**
FE/7-12	1.39	0.68	3.06	3.04
FEVM 17	0.05	0.05	0.00	0.00
DRAINAGE FE/7-13	0.02	0.00	0.02	0.00
DRAINAGE FE/7-14	0.34	0.00	0.38	0.23
VERNAL MARSH FEVM 16	0.05	0.05	0.00	0.00
VERNAL MARSH FEVM 18	0.04	0.04	0.00	0.00
VERNAL MARSH FEVM 19	0.06	0.06	0.00	0.00
DRAINAGE FE/7-15	0.40	0.03	0.88	0.64
DRAINAGE FE/7-16	0.23	0.00	0.23	0.00
DRAINAGE FE/7-18	1.10	0.00	1.72	0.95
DRAINAGE FE/7-19	0.03	0.00	0.03	0.00
DRAINAGE FE/7-20	0.03	0.00	0.03	0.00
DRAINAGE FE/7-21	0.28	0.00	1.68	1.68
DRAINAGE FE/7-22	0.63	0.00	1.38	1.23
DRAINAGE FE/7-23	0.02	0.00	0.02	0.00
DRAINAGE FE/7-24	0.04	0.00	0.04	0.00
DRAINAGE FE/7-25	0.05	0.00	0.05	0.00
SAN MATEO CREEK / WETLAND COMPLEX	35.33	15.25	47.71	47.71
SAN MATEO MARSH	68.55	68.55	68.55	68.55
VERNAL MARSH FE-VM 20	0.05	0.05	0.00	0.00
SAM MATEO MARSH EAST OF I-5	13.60	13.60	24.46	24.46
VERNAL POOL FE-VP 3	0.18	0.18	0.00	0.00
VERNAL POOL FE-VP 4	0.030	0.03	0.00	0.00
SAN ONOFRE CREEK / WETLAND COMPLEX	1.39	1.39	5.30	5.30
TOTAL	**207.96**	**133.28**	**309.07**	**300.21**

[1] These features are depicted on Exhibits 1 and 2.

[2] Refer to Appendix B for isolated features totals

D.1 DRAINAGE DESCRIPTIONS – ALIGNMENT 7 CORRIDOR – FAR EAST CROSSOVER – MODIFIED STUDY AREA

Portions of the A7C-FEC-M Alternative overlap with the CC, CC-ALPV and A7C-ALPV Alternatives. Please see drainage descriptions above for features that have been previously addressed.

Drainage 7-2

Drainage 7-2 consists of two tributaries. The southern tributary is incised within a historically disked canyon bottom. The presence of an OHWM was indicated by sediment deposits. The northern tributary consists of an unvegetated channel within sage scrub vegetation. The channel ends in ruderal vegetation.

Corps jurisdiction totals 0.02 acre, of which none are wetlands. CDFG jurisdiction totals 0.06 acre, of which none consists of vegetated riparian habitat. The feature totals 0.06 acre of ephemeral channel..

Drainage 7-7

Drainage 7-7 is located to the west of the disturbance limits of the A7C – FEC-M alternative. It is wetland drainage vegetated with cattail (*Typha domingensis*, OBL) and bulrush (*Scirpus americanus*, OBL). Mulefat and willow (*Salix* species, FACW) vegetate the bank south of San Juan Creek Road.

Corps jurisdiction consists of 1.10 acres, of which 0.48 are wetlands. CDFG jurisdiction totals 2.44 acres, all of which consists of vegetation.

Drainage 7-11

Drainage 7-11 is an incised channel within the disturbance limits of the A7C – FEC-M alternative and is vegetated with upland scrub, chaparral, annual grassland and mulefat at its base. Riparian oak habitat is located on the sandy loam bed.

The presence of an OHWM was indicated by sediment deposits. OHWM ended in ruderal vegetation on the north side of Ortega Highway. CDFG jurisdiction totals 0.03 acre, none of which consists of vegetated riparian habitat.

Drainage 7-12

Drainage 7-12 is incised and traverses the disturbance limits in a northeast direction. The base is vegetated with mulefat.

Corps jurisdiction totals 0.11 acre, none of which are wetlands. CDFG jurisdiction totals 1.94 acres, all of which consist of vegetated riparian habitat.

Drainage FE/7-3

Drainage FE/7-3 runs north-east across the disturbance limits of the A7C – FEC-M alternative and is the western tributary is vegetated with willow woodland. The south central tributary is vegetated with oaks and mulefat and ends at a detention basin vegetated with mud nama (*Nama stenocarpum*, FACW) and cocklebur (*Xanthium strumarium*, FAC). The distinctive eastern tributary that parallels the road alignment is vegetated with southern will forest and coast oak. The terrain is broad and sandy with ample sediment deposits.

Corps jurisdiction totals 4.14 acres, of which 0.03 acre is wetlands. CDFG jurisdiction totals 11.97 acres, of which 10.01 acres consist of vegetated riparian habitat.

Drainage FE/7-4

Drainage FE/7-4 is located both within the disturbance limits of the Far East Corridor alignments and also to the west of them. The tributaries are vegetated with oak woodland. Seepage supports cattails, willows and alkali meadow.

CDFG jurisdiction totals 2.47 acres, of which 2.38 acres consist of vegetated riparian habitat.

Drainage FE/7-5

Drainage FE/7-5 consists of several ephemeral channels that discharge into an artificially irrigated lake behind Trampas Dam.

The channel banks are vegetated with upland chaparral. CDFG jurisdiction totals 0.02 acre, none of which consist of vegetated riparian habitat.

Drainage FE/7-6

Drainage FE/7-6 originates within the disturbance limits of the Far East Corridor alignments and traverses the alignment toward the east before reaching Cristianitos Creek. The channel is approximately two-to-five feet wide. The channel is moderately to deeply incised. The banks of the channel are vegetated with poison oak (*Toxicodendron diversilobum*, UPL), coast live oaks (*Quercus agrifolia*, UPL), toyon (*Heteromeles arbutifolia*, UPL), lemonade berry (*Rhus integrifolia*, UPL), hollyleaf redberry (*Rhamnus ilicifolia*, UPL), monkeyflower (*Mimulus aurantiacus*, UPL), giant wild rye (*Leymus condensatus*, FACU), and Italian thistle (*Carduus pycnocephalus*, UPL).

channel are vegetated with poison oak (*Toxicodendron diversilobum,* UPL), coast live oaks (*Quercus agrifolia,* UPL), toyon (*Heteromeles arbutifolia,* UPL), lemonade berry (*Rhus integrifolia*, UPL), hollyleaf redberry (*Rhamnus ilicifolia*, UPL), monkeyflower (*Mimulus aurantiacus,* UPL), giant wild rye (*Leymus condensatus,* FACU), and Italian thistle (*Carduus pycnocephalus*, UPL). A patch of mule fat (*Baccharis salicifolia*, (FACW) and few arroyo willows (*Salix laseolepis*, FACW) occurs at the mid-point of the drainage. A riparian oak canopy extends beyond the channel to approximately 65 feet in width in the upper portion of the channel.

The OHWM was identified based on debris racks, sediment deposits, and shelving.

Corps jurisdiction totals 0.43 acres, none of which are wetlands. CDFG jurisdiction totals 2.91 acres, of which 2.62 acres consist of vegetated riparian habitat.

Drainage FE/7-9

Drainage FE/7-9 originates within the disturbance limits of the Far East Corridor alignment and traverses the alignment toward the east before reaching Cristianitos Creek. The channel is approximately two-to-four feet wide. In the upper part, the drainage is located within a series of deep v-shaped canyons. Below the confluence of these upper canyons, the channel is no longer discernible. The channel begins again with a headcut approximately 600 feet below this point. In the upper part the channel is vegetated with poison oak (*Toxicodendron diversilobum,* UPL), coast live oaks (*Quercus agrifolia,* UPL), toyon (*Heteromeles arbutifolia,* UPL), lemonade berry (*Rhus integrifolia*, UPL), and hollyleaf redberry (*Rhamnus ilicifolia*, UPL). The lower portion of the drainage is vegetated with California sagebrush (*Artemisia californica*, UPL), coyote brush (*Baccharis pilularis*, UPL), monkeyflower (*Mimulus aurantiacus,* UPL), giant wild rye (*Leymus condensatus,* FACU), mugwort (*Artemisia douglasiana*, FAC), and Italian thistle (*Carduus pycnocephalus*, UPL).

The OHWM was identified based on debris racks, sediment deposits, and shelving. Corps and CDFG jurisdiction associated with Drainage FE/7-9 totals 0.16 acre.

Drainage FE/7-10

Drainage FE/7-10 originates within the disturbance limits for the Far East Corridor alignment and extends south beyond the eastern disturbance limits where the OHWM disappears briefly in a grassy swale before joining Cristianitos Creek within the disturbance limits for the Far East Alignment. The channel bed is composed of well-drained soils, cobbles and leaf litter. The channels upper reaches are vegetated with coast live oak (*Quercus agrifolia,* UPL), Mexican elderberry (*Sambucus mexicanus,* FACU), monkey flower (*Mimulus aurantiacus,* UPL), lemonadeberry (*Rhus integrifolia,* UPL), poison oak (*Toxicodendron diversilobum,* UPL), mule fat (*Baccharis salicifolia,* FACW), cudweed (*Gnathalium canescens*, UPL), mugwort (*Artemesia douglasiana,* FAC), coyote brush (*Baccharis pilularis,* UPL), western ragweed (*Ambrosia*

psilostachya, FAC), and non-native grasses and herbs such as wild lettuce (*Lactuca serriola*, FAC), cardoon (*Cynara cardunculus*, UPL), mustard (*Brassica nigra*, UPL), and tocalote (*Centaurea melitensis*, UPL). The channels lower reaches are vegetated with coyote brush (*Baccharis pilularis*, UPL), buckwheat (*Eriogonum fasciculatum*, UPL), tree tobacco (*Nicotiana glauca*, FAC), California sagebrush (*Artemesia californica*, UPL), white clover (*Melilotus alba*, FACU), mustard (*Brassica nigra*, UPL), and non-native grasses.

The presence of an OHWM was indicated by shelving and destruction of terrestrial vegetation. The oak canopy varied from 50 to 80 feet wide.

A tributary channel originates at the eastern edge of the Talega development, traverses the disturbance limits and joins Drainage FE/7-3. The channel bed is composed of well drained soils, cobbles and leaf litter and the banks are vegetated with coast live oak (*Quercus agrifolia*, UPL), Mexican elderberry (*Sambucus mexicanus*, FACU), monkey flower (*Mimulus aurantiacus*, UPL), lemonadeberry (*Rhus integrifolia*, UPL), poison oak (*Toxicodendron diversilobum*, UPL), cudweed (*Gnathalium bicolor*, UPL), mugwort (*Artemesia douglasiana*, FAC), western ragweed (*Ambrosia psilostachya*, FAC), and non-native grasses and herbs such as wild lettuce (*Lactuca serriola*, FAC), cardoon (*Cynara cardunculus*, UPL), mustard (*Brassica nigra*, UPL), and tocalote (*Centaurea melitensis*, UPL).

The presence of an OHWM was indicated by shelving and destruction of terrestrial vegetation. The oak canopy varied from 50 to 80 feet wide.

Corps jurisdiction associated with Drainage FE/7-3 totals 0.30 acre. CDFG jurisdiction associated with the drainage totals 2.88 acres, of which 2.76 acres consists of riparian habitat.

Drainage FE/7-11

Drainage FE/7-11 is located within the disturbance limits of the Far East Corridor alignment and is relatively incised. It is vegetated with southern willow scrub, some willow wetland, cattails and alkali meadow. The vegetation appears partially supported by urban runoff.

Corps jurisdiction totals 1.10 acres, of which 0.12 acres are wetlands. CDFG jurisdiction totals 1.35 acres, all of which consists of vegetated riparian habitat

Drainage FE/7-12

Drainage FE/7-12 originates to the west of the Far East Corridor alignment and traverses the disturbance limits to join Cristianitos Creek. The channel varies from five to twelve feet in width. The channel bed of the upper reach is composed of a sandy loam substrate and exhibited surface water in September. This portion of the channel is vegetated with cocklebur (*Xanthium strumarium*, FAC+), rabbitsfoot grass (*Polypogon monspeliensis*, FACW+), mule fat (*Baccharis salicifolia*, FACW-), western ragweed (*Ambrosia psilostachya*, FAC), coyote brush (*Baccharis*

pilularis, UPL), white clover (*Melilotus alba*, FACU), salt cedar (*Tamarix* sp., FACW), and pampas grass (*Cortaderia selloanoa*, UPL). The lower reach of the channel has a cobbly sandy loam bed, with some evidence of subsurface flow and is vegetated with mule fat (*Baccharis salicifolia*, FACW-), coyote brush (*Baccharis pilularis*, UPL), white clover (*Melilotus alba*, FACU), western ragweed (*Ambrosia psilostachya*, FAC), giant wild rye (*Leymus condensatus*, FACU), rabbitsfoot grass (*Polypogon monspeliensis*, FACW+), and non-native grasses. The riparian vegetation varies from 17 feet to 90 feet in width. The presence of an OHWM was indicated by change in soil character. A deeply incised v-channel occurs within this drainage system. The channel originates to the west of the alignment and traverses the disturbance limits to join the main channel. The upper reaches of the v-channel, over 700 feet west of the disturbance limits, supports a cattail wetland. The lower reaches of the channel are vegetated with saltgrass (*Distichlis spicata*, FACW), mustard (*Brassica nigra*, UPL), mule fat (*Baccharis salicifolia*, FACW-), narrow leaved cattail (*Typha sp.*, OBL), artichoke thistle (*Cynara cardunculus*, UPL), coyote brush (*Baccharis pilularis*, UPL), and sow thistle (*Sonchus oleraceus*, NI). The channels riparian vegetation varies from four to 15 feet in width. The presence of an OHWM was indicated by shelving and a change in soil character. A series of ephemeral, incised tributary channels occur within this drainage system. These features average one-to-two feet in width. The slopes of these tributaries are composed of colluvial soils that contribute to erosion. The channel beds are composed of fine sandy loam with angular cobbles and are vegetated with coyote brush (*Baccharis pilularis*, UPL), sow thistle (*Sonchus oleraceus*, NI), fennel (*Foeniculum vulgare*, FACU), and non-native grasses with sparse native needlegrass (*Nassella pulchra*, UPL) on the upper banks.

Corp jurisdiction associated with Drainage FE/7-12 totals 1.33 acres, of which 0.63 acre consists of jurisdictional wetlands. CDFG jurisdiction associated with the drainage totals 3.02 acres, 3.00 acres of which consists of riparian habitat.

Vernal Marsh FEVM 17

Vernal Marsh FEVM 17 formed in a landslide created basin covering approximately 0.05 acre. The basin supports cocklebur (*Xanthium strumarium*, FAC), Mexican rush (*Juncus Mexicanus*, FACW), and mule fat (*Baccharis Salicifolia*, FACW). Ponding was observed from February 21, 2001 though April 8, 2001 meeting criteria 3 for hydric soils and the criteria for wetland hydrology (saturated in the upper 12 inches for a minimum of 18 consecutive days).

This feature is adjacent to other jurisdictional features, and therefore is subject to Corps jurisdiction, which totals 0.05 acre of wetland.

Drainage FE/7-13

Drainage FE/7-13 originates east of the Far East Corridor alignment and continues east to join Cristianitos Creek. The steep channel averages one foot wide and is composed of fine sandy loam with about 90 percent cobbles and angular rock fragments. The banks are colluvium. The

channel is vegetated with coyote brush (*Baccharis pilularis*, UPL), cardoon (*Cynara cardunculus*, UPL), wild oat (*Avena sp.*, UPL), fennel (*Foeniculum vulgare*, FACU), Italian thistle (*Carduus pycnocephalus*, UPL), ripgut brome (*Bromus diandrus*, UPL), black mustard (Brassica nigra, UPL), and white clover (*Melilotus alba*, FACU).

The presence of an OHWM was determined by shelving and destruction of terrestrial vegetation. Corps and CDFG jurisdiction associated with the drainage totals 0.02 acre.

Drainage FE/7-14

Drainage FE/7-14 originates to the east of the Far East Corridor alignment and traverses the disturbance limits to join Cristianitos creek. The steeply incised channel varies from two to four feet wide and has a bed composed of cobbly sand with low organic matter. The channel is vegetated with sagebrush (*Artemesia californica*, UPL), coyote brush (*Baccharis pilularis*, UPL), mule fat (*Baccharis salicifolia*, FACW-), purple needlegrass (*Nassella pulchra*, UPL), cardoon (*Cynara cardunculus*, UPL), fennel (*Foeniculum vulgare*, FACU), and non-native grasses.

The presence of an OHWM was indicated by the presence of litter and debris. Riparian vegetation is contained within the channel.

Several tributaries to the main channel occur within the drainage system. These tributaries are located in deep v-shaped canyons and vary from one to six feet in width. The upper reaches of these drainages have a shallow A horizon with pockets of buried detrital matter that overlays loamy sand with large cobbles and boulders. The channels are vegetated with a few black (*Salix gooddingii*, OBL) and arroyo (*Salix lasiolepis*, FACW) willows throughout the channel, lemonade berry (*Rhus integrifolia*, UPL), coyote brush (*Baccharis pilularis*, UPL), California sagebrush (*Artemesia californica*, UPL), sticky leaf monkey flower (*Mimulus aurantiacus*, UPL), purple needlegrass (*Nassella pulchra*, UPL), giant wild rye (*Leymus condensatus*, FACU), a few mule fat (*Baccharis salicifolia*, FACW-), and a few Mexican elderberry (*Sambucus mexicana*, FAC) on the upper banks. The lower reaches have a much lower organic content in the soil and are vegetated with mule fat (*Baccharis salicifolia*, FACW-), coyote brush (*Baccharis pilularis*, UPL), Mexican elderberry (*Sambucus mexicana*, FAC), sagebrush (*Artemesia californica*, UPL), tarweed (*Hemizonia fasciculara*, UPL), western ragweed (*Ambrosia psilostachya*, FAC), and poison oak (*Toxicodendron diversilobum*, UPL).

The presence of an OHWM was indicated by the presence of debris and litter.

Corps jurisdiction associated with the drainage system totals 0.34 acres. CDFG jurisdiction associated with the drainage system totals 0.38 acres, 0.23 acres of which consists of riparian vegetation.

Vernal Marsh FEVM 16

Vernal Marsh FEVM 16 formed in a landslide created basin covering approximately 0.05 acre. The basin supports cocklebur (*Xanthium strumarium*, FAC). Ponding was observed from February 13, 2001 though May 15, 2001 meeting criteria 3 for hydric soils and the criteria for wetland hydrology (saturated in the upper 12 inches for a minimum of 18 consecutive days).

This feature is adjacent to other jurisdictional features, and therefore is subject to Corps jurisdiction, which totals 0.05 acre of wetland.

The seasonal marsh is not subject to CDFG jurisdiction.

Vernal Marsh FEVM 18

Vernal Marsh FEVM 18 formed in a landslide created basin covering approximately 0.04 acre. The basin supports cocklebur (*Xanthium strumarium*, FAC), mustard (*Brassica nigra*, UPL), alkali mallow (*Malvella leprosa*, FAC), cudweed (*Gnathalium luteo-album*, FACW-), rabbitsfoot grass (*Polypogon monspeliensis*, FACW+), Mexican rush (*Juncus mexicanus*, FACW) and (*Echinchloa* sp.,≥FACW). The basin failed to pond in 2001, however, ponding was observed from January 25, 1997 to April 10, 1997 during fairy shrimp surveys.

This feature is adjacent to other jurisdictional features, and therefore is subject to Corps jurisdiction, which totals 0.04 acre of wetland.

Vernal Marsh FEVM 19

Vernal Marsh FEVM 19 formed in a landslide created basin covering approximately 0.06 acre. The basin supports cocklebur (*Xanthium strumarium*, FAC), mustard (*Brassica nigra*, UPL), alkali mallow (*Malvella leprosa*, FAC), cudweed (*Gnathalium luteo-album*, FACW-), rabbitsfoot grass (*Polypogon monspeliensis*, FACW+), Mexican rush (*Juncus mexicanus*, FACW) and (*Echinchloa* sp.,≥FACW). Ponding was observed from February 21, 2001 though April 4, 2001 meeting criteria 3 for hydric soils and the criteria for wetland hydrology (saturated in the upper 12 inches for a minimum of 18 consecutive days).

This feature is adjacent to other jurisdictional features, and therefore is subject to Corps jurisdiction, which totals 0.06 acre of wetland.

Drainage FE/7-15

Drainage FE/7-15 consists of an incised channel that varies three to eight feet in width cut through stratified sandy and cobbly alluvial sediments. The channel originates to the west of the Far East Corridor alignment and traverses the disturbance limits to join Cristianitos Creek. The

channel bed is composed of medium loamy sand and is vegetated with sagebrush (*Artemesia californica*, UPL), mule fat (*Baccharis salicifolia*, FACW-), rabbitsfoot grass (*Polypogon monspeliensis*, FACW+), white sage (*Salvia apiana*, UPL), western ragweed (*Ambrosia psilostachya*, FAC), and coyote brush (*Baccharis pilularis*, UPL). The mule fat scrub varies from six to eight feet wide. The presence of an OHWM was determined by shelving and destruction of terrestrial vegetation.

Two tributary drainages occur within the disturbance limits. These channels vary from one to three feet wide and are composed of medium sandy loam with large cobbles, cut through stratified alluvium sediments. The channels are vegetated with coyote brush (*Baccharis pilularis*, UPL), giant wild rye (*Leymus condensatus*, FACU), Mexican elderberry (*Sambucus mexicana*, FAC), sagebrush (*Artemesia californica*, UPL), sticky leaf monkey flower (*Artemesia californica*, UPL), black mustard (*Brassica nigra*, UPL), ripgut brome (*Bromus diandrus*, UPL), deerweed (*Lotus scoparius*, UPL), and common sunflower (*Helianthus annus*, FAC-).

The presence of an OHWM was determined by shelving and destruction of terrestrial vegetation.

Corps jurisdiction associated with the drainage system totals 0.40 acre, of which 0.03 acre consists of wetlands. CDFG jurisdiction associated with the drainage system totals 0.88 acre, of which 0.64 acre consists of mule fat scrub.

Drainage FE/7-16

Drainage FE/7-16 originates to the west of the Far East Corridor alignment and traverses the disturbance limits to join Cristianitos Creek. The channel varies from four to five feet wide and is composed of a cobbly sandy substrate. The channel is located within a highly incised canyon and is vegetated with buckwheat (*Eriogonum fasciculatum*, UPL), coyote brush (*Baccharis pilularis*, UPL), California sagebrush (*Artemesia californica*, UPL), laurel sumac (*Malosma laurina*, UPL), Mexican elderberry (*Sambucus mexicana*, FAC), poison oak (*Toxicodendron diversilobum*, UPL), tree tobacco (*Nicotiana glauca*, FAC), fennel (*Foeniculum vulgare*, FACU), giant wild rye (*Leymus condensatus*, FACU), lemonade berry (*Rhus integrifolia*, UPL), mustard (*Brassica nigra*, UPL), and sticky leaf monkey flower (*Mimulus aurantiacus*, UPL).

The presence of an OHWM was determined by shelving and destruction of terrestrial vegetation. Corps, and CDFG jurisdiction associated with the drainage totals 0.23 acres.

Drainage FE/7-18

Drainage FE/7-18 is a highly vegetated V channel that varies from five to 18 feet in width. Its tributary varies from three to five feet in width. The channel has a sandy loam substrate with no cobbles or boulders and is vegetated with cocklebur (*Xanthium strumarium*, FAC), mule fat (*Baccharis salicifolia*, FACW-), arroyo willow (*Salix lasiolepis*, FACW), pampas grass

(*Cortaderia selloana*, UPL), and bristly ox tongue (*Picris echioides*, FAC). The willow and mule fat scrub varies from 20 feet to 50 feet in width wide.

The presence of an OHWM was determined by shelving and destruction of terrestrial vegetation. Corps jurisdiction associated with the drainage totals 1.10 acres. CDFG jurisdiction associated with the drainage totals 1.72 acres, of which 0.95 acre consists of willow scrub.

Drainage FE/7-19

Drainage FE/7-19 originates within the disturbance limits and traverses the Far East Corridor alignment to join San Mateo Creek. The high gradient channel averages one foot in width and is composed of sandy loam soils with high organic content in the A horizon. The drainage is vegetated with monkey flower (*Mimulus aurantiacus*, UPL), sagebrush (*Artemesia californica*, UPL), coyote brush (*Baccharis pilularis*, UPL), gum plant (*Grindelia camporum*, FACU), and bladderpod (*Isomeris arborea*, UPL).

The presence of an OHWM was determined by shelving and destruction of terrestrial vegetation. Corps and CDFG jurisdiction associated with the drainage totals 0.03 acre.

Drainage FE/7-20

Drainage FE/7-20 originates within the disturbance limits of the Far East Corridor alignment and traverses the alignment to join San Mateo Creek. The channel averages one foot in width and vegetated with coyote brush (*Baccharis pilularis*, UPL), Mexican elderberry (*Sambucus mexicana*, FAC), sagebrush (*Artemesia californica*, UPL), tree tobacco (*Nicotiana glauca*, FAC), and cocklebur (*Xanthium strumarium*, FAC).

The presence of an OHWM was determined by shelving and destruction of terrestrial vegetation. Corps and CDFG jurisdiction associated with the drainage totals 0.03 acre.

Drainage FE/7-21

Drainage FE/7-21 varies from two to six feet in width. The channel originates west of the Car East Corridor alignment and traverses the disturbance limits to join San Mateo Creek. The channel is composed of fine-sandy loam soil with no cobbles or boulders and is vegetated with Mexican elderberry (*Sambucus mexicana*, FAC), coyote brush (*Baccharis pilularis*, UPL), and cocklebur (*Xanthium strumarium*, FAC).

The presence of an OHWM was determined by shelving and destruction of terrestrial vegetation. The Mexican elderberry averages 30 feet in width. Corps jurisdiction associated with the drainage totals 0.28 acre. CDFG jurisdiction associated with the drainage totals 1.68 acre, all of which consists of riparian habitat.

Drainage FE/7-22

Drainage FE/7-22 originates west of the Far East Corridor alignment and traverses the disturbance limits to join San Mateo Creek. The deeply incised channel varies from 10 to 25 feet in width and is composed of sandy soil with no cobbles. The middle portion of the channel is vegetated with Mexican elderberry (*Sambucus mexicana*, FAC), sagebrush (*Artemesia californica*, UPL), coyote brush (*Baccharis pilularis*, UPL), and non-native pampas grass (*Cortaderia selloana*, UPL). The upstream and downstream reaches support willow (*Salix lasiolepis*, FACW) and mule fat (*Baccharis salicifolia*, FACW).

The presence of an OHWM was indicated by shelving and destruction of terrestrial vegetation. The riparian vegetation varies from 25 to 40 feet in width.

Two tributary drainages occur within the alignment. The channels average two feet in width and are composed of coarse sand, sandy loam and no cobbles. The lower reach of the channels are natural, while its upper reach has been filled and rerouted by agricultural activities. The channel is vegetated with mule fat (*Baccharis salicifolia*, FACW-), coyote brush (*Baccharis pilularis*, UPL), sagebrush (*Artemsia californica*, UPL), mustard (*Brassica nigra*, UPL), fennel (*Foeniculum vulgare*, FACU), Mexican elderberry (*Sambucus mexicana*, FAC), horseweed (*Conyza canadensis*, FAC), and castor bean (*Ricinus communis*, UPL).

The presence of an OHWM was indicated by destruction of terrestrial vegetation and shelving.

Corps jurisdiction associated with the drainage system totals 0.63 acres. CDFG jurisdiction associated with the drainage system totals 1.38 acres, of which 1.23-acres consist of riparian habitat.

Drainage FE/7-23

Drainage FE/7-23 originates within the disturbance limits of the Far East Corridor alignment and extends southeast to join San Mateo Creek. The channel averages one foot in width and is composed of cobbly sand that results from road runoff. The drainage is vegetated with mule fat (*Baccharis salicifolia*, FACW-), fennel (*Foeniculum vulgare*, FACU), caster bean (*Ricinus communis*, UPL), coyote brush (*Baccharis pilularis*, UPL), western ragweed (*Ambrosia psilostachya*, FAC), tocalote (*Centaurea melitensis*, UPL), mustard (*Brassica nigra*, UPL), and wild oats (*Avena sp.*, UPL).

The presence of an OHWM was indicated by destruction of terrestrial vegetation and shelving. Corps and CDFG jurisdiction associated with the drainage totals 0.02 acre.

Drainage FE/7-24

Drainage FE/7-24 originates within the disturbance limits of the Far East Corridor alignment and extends southeast to join San Mateo creek. The channel averages three feet in width and is composed of cobbly sand. The drainage is vegetated with coyote brush (*Baccharis pilularis*, UPL), fennel (*Foeniculum vulgare*, FACU), sagebrush (*Artemesia californica*, UPL), mule fat (*Baccharis salicifolia*, FACW-), mustard (*Brassica nigra*, UPL), and Mexican elderberry (*Sambucus mexicana*, FAC).

The presence of an OHWM was indicated by destruction of terrestrial vegetation and shelving. Corps and CDFG jurisdiction associated with the drainage totals 0.04 acre.

Drainage FE/7-25

Drainage FE/7-25 originates within the disturbance limits of the Far East Corridor alignment and extends southeast to join San Mateo Creek. The channel varies from one to three feet in width and is composed of cobbly sand. The drainage is vegetated with sagebrush (*Artemsia californica*, UPL), mustard (*Brassica nigra*, UPL), coyote brush (*Baccharis pilularis*, UPL), tree tobacco (*Nicotiana glauca*, FAC), coast sunflower (*Encelia californica*, UPL), and Mexican elderberry (*Sambucus mexicana*, FAC).

The presence of an OHWM was indicated by destruction of terrestrial vegetation and shelving. Corps and CDFG jurisdiction associated with the drainage totals 0.05 acre.

San Mateo Creek

The San Mateo Creek/Wetland Complex consists of the braided channel of San Mateo Creek and includes areas of the low-flow channel, which are supported by base flow throughout the year. The channel varies from 200 to 1100 feet wide and is composed of coarse sand with cobbles and boulders. There are similar but narrower braids throughout the channel bed with several islands that support both annual and perennial vegetation including mule fat (*Baccharis salicifolia*, FACW-), narrow-leaved willow (*Salix exigua*, OBL), arroyo willow (*Salix lasiolepis*, FACW), fennel (*Foeniculum vulgare*, FACU), rabbitsfoot grass (*Polypogon monspeliensis*, FACW+), red and ripgut brome (*Bromus rubens* and *Bromus diandrus*, UPL), white clover (*Melilotis alba*, FACU), and curly dock (*Rumex crispus*, FACW-). In general, vegetation within the drainage varies from mature willow woodland to mule fat scrub and open cobbly wash. Wetland areas are vegetated with yellow willow (*Salix lucida*, FACW), arroyo willow (*Salix lasiolepis*, FACW), cattail (*Typha domingensis*, OBL), spike rush (*Eleocharis acicularis*, OBL), bulrush (*Scirpus americanus*, OBL), narrow leafed willow (*Salix exigua*, OBL), mule fat (*Baccharis salicifolia*, FACW-), sedge (*Cyperus* sp., ≥FACW) iceplant (*Carpobrutus* sp., UPL), saltgrass (*Distichlis spicata*, FACW), celery (*Apium graveolens*, FACW), cudweed (*Gnathalium luteo-album* (FACW-), white alder (*Alnus rhombifolia*, FACW), horsetail (*Equisetum* sp., ≥FAC), and rabbitfoot grass (*Polypogon monspeliensis*, FACW+).

The presence of an OHWM was indicated by the presence of litter and debris, clear line impressed upon the bank, destruction of terrestrial vegetation and change is soil character. Corps jurisdiction associated with the channel totals 35.33 acres, of which 15.25 acres consist of jurisdictional wetlands. CDFG and jurisdiction associated with the channel total 47.71 acres, all of which consists of riparian habitat. Riparian habitat within the Coastal Zone totals 17.44 acres, all of which consists of one-parameter wetland.

San Mateo Marsh

San Mateo Marsh is a coastal freshwater marsh that is located near the southern end of the study area where San Mateo Creek discharges into the ocean. The marsh is a mosaic of wetland/riparian habitat that is located on both the coastal and inland sides of Interstate-5. The Trestles Wetland Preserve, on the coastal side of Interstate-5, consists of willow riparian forest, southern sycamore riparian forest, freshwater marsh dominated by hardstem bulrush (*Scirpus acutus*, OBL) and southern cattail (*Typha domingensis*, OBL), brackish marsh dominated by Olney's bulrush (*Scirpus americanus*, OBL), and small areas of coastal salt marsh dominated by fleshy jaumea (*Jaumea carnosa*, OBL) and pickleweed (*Salicornia virginica*, OBL).

Delineation of the coastal side of Interstate-5 was based on aerial photography and has not been confirmed in the field since it lies outside of the disturbance limits. Corps, CDFG and CCC jurisdiction associated with the wetland totals approximately 68.55 acres all of which consist of jurisdictional wetlands.

Vernal Marsh FE-VM 20

Vernal Marsh FE-VM 20 is located adjacent to the Interstate-5 off ramp at Basilone Road. The basin appears to have been created by construction of the offramp and supports hydrophytic vegetation including mule fat (*Baccharis salicifolia*, FACW), arroyo willow (*Salix lasiolepis*, FACW), western goldenrod (*Euthamia occidentalis*, OBL), and salt marsh fleabane (*Pluchea odorata*, OBL). The basin was observed to be ponded from February 13, 2001 to February 21, 2001 meeting criteria 3 for hydric soils.

This feature is adjacent to other jurisdictional features, and therefore is subject to Corps jurisdiction, which totals 0.05 acre of wetland. of wetland

San Mateo Marsh East of I-5

Inland from Interstate-5, a portion of San Mateo Marsh, separated from San Mateo creek by agricultural fields is located immediately east of Interstate-5 and north of Basilone Road. This area consists of willow riparian forest and brackish marsh. The willow riparian forest is dominated by arroyo willow (*Salix lasiolepis*, FACW) with an understory of giant nettle.(*Urtica dioica*, FACW). The wettest areas within the willow forest supports fruit bur-reed (*Sparganium eurycarpum*, OBL), Olney's bulrush (*Scirpus americanus*, OBL), red-rooted umbrella sedge

(*Cyperus erythrorhizos*, OBL), straw colored umbrella sedge (*Cyperus strigosus*, FACW), and California bulrush (*Scirpus californicus*, OBL). Sediment deposits and moderate shelving indicated the presence of hydrology. Soils were composed of low chroma silt layers interbedded with layers of fine sand and buried organics.

Corps jurisdiction associated with marsh totals 13.60 acres, all of which consist of wetlands. CDFG jurisdiction associated with the marsh totals approximately 24.46 acres, all of which consist of willow woodland. Riparian habitat within the Coastal Zone totals 23.52 acres, all of which consists of one-parameter wetland.

Vernal Pool FE-VP 3

Vernal Pool FE-VP 3 is a basin which covers 0.18 acres vegetated with dwarf wholly heads (*Psilocarphus brevissimus*, OBL), rabbitfoot grass (*Polypogon monspeliensis*, FACW), Boccone's sand spurry (*Spergullaria bocconei*, FAC), smooth cat's ear (*Hypochaeris glabra*, UPL), and mule fat (*Baccharis salicifolia*, FACW). The basin was observed to be ponded from February 13, 2001 to February 21, 2001 meeting criteria 3 for hydric soils.

This feature is adjacent to other jurisdictional features, and therefore is subject to Corps jurisdiction, which totals 0.18 acre of wetland.

Vernal Pool FE-VP 4

Vernal Pool FE-VP 4 is located on the bluff north of San Onofre Creek. The 0.09-acre basin supported dwarf wholly heads (*Psilocarphus brevissimus*, OBL), hyssop loosestrife (*Lythrum hyssopifolium*, FACW), rabbitfoot grass (*Polypogon monspeliensis*, FACW), and curly dock (*Rumex crispus*, FACW). The basin was observed to be ponded from February 13, 2001 to February 21, 2001 meeting criteria 3 for hydric soils.

This feature is adjacent to other jurisdictional features, and therefore is subject to Corps jurisdiction, which totals 0.03 acre of wetland.

San Onofre Creek

The San Onofre Creek/Wetland complex is a major drainage within the study area. The low flow channels within the creek are dominated by herbaceous cover including water-cress (*Rorippa nasturtium-aquaticum*, OBL) yellow waterweed (*Ludwigia peploides*, OBL), water speedwell (*Veronica anagallis-aquatica*, OBL), southern cattail (*Typha domingensis*, OBL), and common monkey flower (*Mimulus guttatus*, OBL). Dominant overstory vegetation includes western sycamore (*Platanus racemosa*, FACW) and arroyo willow (*Salix lasiolepis*, FACW).

Corps jurisdiction totals 1.39 acres, all of which is wetlands. CDFG and CCC jurisdiction totals 5.3 acres, all of which consists of vegetated riparian habitat.

E. FAR EAST CORRIDOR – MODIFIED STUDY AREA

Several jurisdictional areas associated with Far East Corridor – Modified (FEC-M) study area were delineated for Rancho Mission Viejo. These areas have been verified by both Corps and CDFG and are indicated on the delineation maps as verified. For all other areas, the jurisdictional totals were mapped in 2001 and 2003. Exhibit 1 depicts the location and extent of Corps jurisdictional areas. Exhibit 2 depicts the location and extent of CDFG jurisdictional areas.

Corps jurisdiction associated with the FEC-M Alternative study area totals approximately 212.09 acres, of which 138.23 acres consist of jurisdictional wetlands. CDFG jurisdiction associated with the FEC-M Alternative study area totals 341.15cres, of which 332.68 acres consists of vegetated riparian or wetland habitat. CCC jurisdiction associated with the FEC-M Alternative study area totals approximately 115.06 acres, all of which consist of one-parameter wetlands.

TABLE A-7
JURISDICTIONAL AREAS
FAR EAST CORRIDOR – MODIFIED STUDY AREA
(in acres)

	CORPS[2]		CDFG	
Jurisdictional Feature[1]	**Total**	**Wetlands**	**Total**	**Vegetated**
FE/C/7 WETLAND 1	12.62	12.62	12.62	12.62
FE/C/7-1	0.09	0.00	0.73	0.66
FE/C/7 WETLAND 2	0.00	0.00	0.00	0.00
FEC/7-2	0.00	0.00	0.02	0.00
FE/C/7-3	0.00	0.00	0.01	0.00
FE/C/7-4	0.00	0.00	0.02	0.00
FE/7-1	0.00	0.00	3.27	3.16
FE/7-2	0.00	0.00	0.57	0.48
FE-1	0.00	0.00	1.76	1.70
FE – WETLAND 1	0.00	0.00	0.00	0.00
FE-2	0.00	0.00	5.81	5.81
FE-2A	0.00	0.00	1.48	1.44
FE-2B	0.14	0.00	0.14	0.00
FE – POND 1	0.00	0.00	0.00	0.00
FE-3 CANADA GOBANADORA	1.91	1.85	6.72	6.72
FE-4	0.00	0.00	4.82	4.82
FE-5	0.63	0.15	5.46	5.20
FE – WETLAND 2	0.00	0.00	0.00	0.00

	CORPS[2]		CDFG	
Jurisdictional Feature[1]	**Total**	**Wetlands**	**Total**	**Vegetated**
FE-6	0.00	0.00	1.12	1.07
FEW -1	0.00	0.00	0.12	0.00
FE-7	4.52	2.26	12.27	10.79
FEM-1	2.19	0.34	5.10	4.79
FEM-2	0.00	0.00	0.01	0.00
FEM-3	0.00	0.00	1.77	1.77
FEM-5	0.01	0.00	0.01	0.00
FEM-6	0.02	0.00	0.02	0.00
FEM-7	0.01	0.00	0.02	0.02
FEM-8	0.02	0.00	0.07	0.06
FEM-9	0.01	0.00	0.01	0.00
FEM-POND 1	0.00	0.00	0.00	0.00
FEM-VM 7	0.00	0.00	0.00	0.00
FEM-VM 8	0.00	0.00	0.00	0.00
FEM-VM 9	0.78	0.78	0.78	0.78
FEM-VM 10	0.06	0.06	0.00	0.00
FEM-VM 11	0.04	0.04	0.00	0.00
FEM-VM 12	0.04	0.04	0.00	0.00
FEM-VP 2	0.18	0.18	0.00	0.00
FEM – SEEP 1	0.51	0.51	0.51	0.51
FEM – SAN JUAN CREEK	26.87	2.92	26.87	26.87
FEM-10	1.82	0.63	6.30	6.04
FEM-11	6.65	5.80	9.40	9.18
FEM-12	0.52	0.00	0.63	0.22
FEM-13	0.89	0.03	3.05	2.52
FEM-14	0.24	0.00	0.29	0.06
FEM-15	0.36	0.00	0.36	0.00
FEM-16	0.22	0.00	0.96	0.86
FE/7-7	1.35	0.09	11.55	11.19
FEM-17	0.44	0.07	1.29	1.11
GABINO CREEK	4.74	0.19	4.32	4.32
CRISTIANITOS CREEK	18.06	9.64	47.59	47.30
FE/7-8	0.43	0.00	2.91	2.62
FE/7-8A	0.05	0.00	0.05	0.00
FE/7-8B	0.01	0.00	0.01	0.00
FE/7-9	0.18	0.00	0.18	0.00
FEM-18	0.04	0.00	0.12	0.09

	CORPS[2]		CDFG	
Jurisdictional Feature[1]	**Total**	**Wetlands**	**Total**	**Vegetated**
FEM-19	0.01	0.00	0.01	0.00
FEM-20	0.02	0.00	0.02	0.00
FE/7-10	0.31	0.00	2.90	2.76
FE/7-11	1.09	0.12	1.35	1.35
FE/7-12	1.39	0.68	3.06	3.04
FE/7-13	0.02	0.00	0.02	0.00
FE/7-14	0.34	0.00	0.38	0.23
FE/7-VM 16	0.05	0.05	0.00	0.00
FE/7-VM 17	0.05	0.05	0.00	0.00
FE/7-VM 18	0.04	0.04	0.00	0.00
FE/7-VM 19	0.06	0.06	0.00	0.00
FE/7-15	0.40	0.03	0.88	0.64
FE/7-16	0.23	0.00	0.23	0.00
FE/7-17	0.21	0.00	0.21	0.00
FE/7-18	1.10	0.00	1.72	0.95
FE/7-19	0.03	0.00	0.03	0.00
FE/7-20	0.03	0.00	0.03	0.00
FE/7-21	0.28	0.00	1.68	1.68
FE/7-22	0.63	0.00	1.38	1.23
FE/7-23	0.02	0.00	0.02	0.00
FE/7-24	0.04	0.00	0.04	0.00
FE/7-25	0.05	0.00	0.05	0.00
SAN MATEO CREEK	35.33	15.25	47.71	47.71
SAN MATEO MARSH	68.55	68.55	68.55	68.55
SAN MATEO MARSH – EAST OF I5	13.60	13.60	24.46	24.46
FE/7-VM 20	0.05	0.05	0.00	0.00
FE/7-VP 3	0.18	0.18	0.00	0.00
FE/7-VP 4	0.03	0.03	0.00	0.00
SAN ONOFRE CREEK	1.39	1.39	5.30	5.30
TOTAL	**212.18**	**138.28**	**341.15**	**332.68**

[1] These features are depicted on Exhibits 1 and 2.

[2] Refer to Appendix B for isolated features totals

E.1 DRAINAGE DESCRIPTIONS – FEC-M STUDY AREA

Portions of the FEC-M Alternative overlap with the CC, CC-ALPV, A7C-ALPV an M Alternatives. Please see drainage descriptions above for features that have been] addressed.

Drainage FE-1

Drainage FE-1 varies from two to four feet in width. The channel originates east of alignment common to all alternatives except the Central Corridor alternatives. It tra disturbance limits until the bed and bank terminates in grassland approximately a ha Cañada Chiquita. The drainage supports oak (*Quercus agrifolia,* UPL) woodland w ragweed (*Ambrosia psilostachya,* FAC), scattered sedges (*Carex*), lemonade berry (*integrifolia,* UPL), and Mexican elderberry (*Sambucus mexicanus,* FACU) in the ur The oak canopy averages 40 to 60 feet in width.

CDFG jurisdiction associated with the channel totals 1.76 acres, of which 1.70 acre oak riparian habitat.

Drainage FE – Wetland 1

FE-Wetland 1 consists of a seep that has been highly disturbed by cattle. The seep approximately 100 feet to the west of FE-2. The seep is vegetated with curly dock (*crispus*, FACW-), Mexican rush (*Juncus mexicanus,* FACW), watercress (*Rorippa aquatica*, OBL), wild celery (*Apium graveolens*, FACW), and *Cyperus* sp., ≥FACV exhibited saturated soil and surface water in August; however, this seep exhibits no tributary connection to other jurisdictional waters and is not adjacent to other jurisd waters . Soils were gleyed clay loam.

The feature totals 0.16 acre, all of which is wetland. Since the feature does not exh bank is not regulated by CDFG.

Drainage FE-2

Drainage FE-2 averages ten feet in width and extends parallel to the Far East Corri and terminates in grassland approximately 500 feet from Cañada Gobenadora. The composed of gleyed clay loam soil with a sulfidic odor and exhibited surface water The channel supported cattail (*Typha domingensis*, OBL), mule fat (*Baccharis sali* FACW), and spike rush (*Eleocharis* spp, ≥FACW). Vegetation on the banks inclu willow (*Salix gooddingii,* OBL), arroyo willow (*Salix lasiolepis,* FACW), and mul (*Baccharis salicifolia,* FACW) with cardoon (*Cynara cardunculus*, UPL), western (*Ambrosia psilostachya*, FAC), and mustard (*Brassica nigra*, UPL) in the understo

The presence of an OHWM was indicated by change in soil character and destruction of terrestrial vegetation. The willow canopy averages 100 feet in width. The feature totals 0.16 acre all of which consists of jurisdictional wetlands. CDFG jurisdiction associated with the channel totals 1.78 acres of willow riparian habitat.

Drainage FE-2a

Drainage FE-2a varies from three to five feet in width and is heavily trampled by cattle. The channel is located within the disturbance limits and terminates in grassland. The unvegetated channel consists of saturated sandy loam soil with a well developed A horizon. The channel banks are vegetated with mature oak (*Quercus agrifolia,* UPL) woodland with a few Mexican elderberries (*Sambucus mexicanus,* FACU) along the margins.

The feature totals 0.08 acre, none of which consists of jurisdictional wetlands. CDFG jurisdiction associated with the channel totals 1.48 acres of which 1.44 acres are oak riparian habitat.

Drainage FE-2b

Drainage FE-2b exhibited base flows in July and varies from two to four feet wide. The channel originates west of the Far East Corridor alignment, traverses the disturbance limits and discharges into FE-3 east of the disturbance limits. The channel consists of sandy loam soil with high organic content and a well developed A horizon. The channel banks of the lower reach are vegetated with coast live oak (*Quercus agrifolia,* UPL) and lemonade berry (*Rhus integrifolia,* UPL) while the banks of the upper reach are vegetated with non-native grasses and coastal sage scrub.

Corps, and CDFG jurisdiction associated with the channel totals 0.14 acre.

Drainage FE – Pond 1

FE-Pond 1 is constructed in upland and exhibits no surface connection to other jurisdictional waters. The feature totals 0.83 acre of ephemeral drainage, none of which is wetland. There is no CDFG jurisdictional acreage.

Drainage FE-3 Gobenadora

Drainage FE-3 is approximately 15 feet wide. It originates outside of the disturbance limits of the Far East Corridor and traverses the alignment. The channel bottom is clean sand, which exhibited base flow in July 2001. The channel is vegetated with arroyo willow (*Salix lasiolepis,* FACW), black willow (*Salix gooddingii,* OBL), mule fat (*Baccharis salicifolia,* FACW), bulrush (*Scirpus americanus,* OBL), western ragweed (*Ambrosia psilostachya,* FAC), white clover (*Melilotus alba,* FACU *alba*), cocklebur (*Xanthium strumarium*, FAC+), willow weed

(*Polygonum lapathifolium*, OBL) watercress (*Rorippa nasturtium-aquatica*, OBL), tall flatsedge (*Cyperus eragrostis*, FACW), speedwell (*Veronica angallis-aquatica*, OBL), and knotgrass (*Paspalum distichum*, OBL) The channel bed was composed of low chroma (10YR 4/1) sandy loam soils with mottles. Two adjacent areas had clear signs of water flow and some areas of saturated soil. The southern area was primarily vegetated with white clover (*Melilotus alba*, FACU), Bermuda grass (*Cynodon dactylon*, FAC) and Italian rye grass (*Lolium multiflorum*, FAC), though there were many other hydrophytic species present including mule fat (*Baccharis salicifolia*, FACW) and willow (*Salix lasiolepis*, FACW). The silty clay loam soils were low chroma (5YR 4/1) though there were no mottles present. The northern area had a larger proportion of mule fat and cocklebur. These two areas totaled approximately 14,000 square feet.

The presence of an OHWM was indicated by change in soil character, destruction of vegetation and shelving. Corps jurisdiction associated with the channel totals 1.91 acres, of which 1.85 acres are jurisdictional wetlands. CDFG jurisdiction associated with the channel totals 6.72 acres of willow riparian habitat.

Drainage FE-4

Drainage FE-4 is located east of the Far East Corridor alignment. It originates with a wetland seep vegetated with black willow (Salix gooddingii, OBL), mulefat (Baccharis salicifolia, FACW), wrinkled rush (Juncus rugulosis, OBL), Mexican rush (Juncus mexicanus, FACW). The channel, which averages one foot wide, terminates in a depressional area approximately 1300 feet from Cañada Gobenadora. The channel is located within a relatively broad swale that has been disturbed by cattle. The channel bed is composed of a silt loam soil covered with a thick leaf layer and lacks a surface tributary connection with other jurisdictional waters. The channel banks are vegetated with coast live oak (*Quercus agrifolia*, UPL), black willow (*Salix gooddingii*, OBL), giant wild rye (*Leymus condensatus*, FACU), mugwort (*Artemesia douglasiana*, FAC), lemonade berry (*Rhus integrifolia*, UPL), milkweed (*Asclepias fascicularus*, FAC), western ragweed (*Ambrosia psilostachya*, FAC), tarweed (*Hemizonia fasciculata*, UPL), and non-native grasses. Where discernible, the presence of an OHWM was indicated by shelving and destruction of terrestrial vegetation. The riparian oak canopy varies from 50 to 60 feet wide.

The feature totals 2.65 acre of ephemeral drainage. CDFG jurisdiction associated with the channel totals 4.82 acres, of which all consists of oak riparian habitat.

FE – Wetland 2

FE – Wetland 2 exhibits influence by groundwater. It supports a single black willow (*Salix gooddingii*, OBL) and an understory of hydrophytic herbaceous vegetation including Mexican rush (*Juncus mexicanus*, FACW).

The feature exhibits no bed and bank and is therefore not subject to CDFG jurisdiction. The feature totals 0.23 acre all of which consists of wetland.

Drainage FE-5

Drainage FE-5 varies from three to eight feet in width. The channel originates east of the Far East Corridor alignment, traverses the disturbance limits and extends west where the OHWM disappears upon reaching the road and before reaching Cañada Gobenadora. The mid reach segment of the drainage exhibited surface water, as well as highly organic sandy loam soils (N 3/1) with coarse distinct mottles and a sulfidic odor. This portion of the channel is vegetated with smartweed (*Polygonum punctatum*, OBL), watercress (*Rorippa nasturtium-aquatica*, OBL), stinging nettle (*Urtica dioica*, FACW), black willow (*Salix gooddingii*, OBL) and duckweed (*Lemna* sp., OBL). The channel banks were vegetated with sycamore (*Platanus racemosa*, FACW), arroyo willow (*Salix lasiolepis*, FACW), poison oak (*Toxicodendron diversilobum*, UPL), coast live oak (*Quercus agrifolia*, UPL), and toyon (*Heteromeles arbutifolia*, UPL). West of the alignment, the drainage supports mainly western sycamore (*Platanus racemosa*, FACW) dominated woodland. East of the alignment, the channel supports mature oak (*Quercus agrifolia*, UPL) woodland. The banks of this portion of the drainage are vegetated with coast live oak (*Quercus agrifolia*, UPL), toyon (*Heteromeles arbutifolia*, UPL), and lemonade berry (*Rhus integrifolia*, UPL). Cattle have trampled the OHWM in some portions of the drainage.

Where discernible, the presence of an OHWM was determined by change in soil character, shelving, and destruction of terrestrial vegetation. The riparian vegetation varies from 10 to 200 feet in width. This feature includes an adjacent seep supporting alkali meadow vegetation. Corps jurisdiction associated with the channel totals 0.63 and 0.64 acres respectively, of which 0.15 acres consist of jurisdictional wetlands. CDFG jurisdiction associated with the channel totals 5.46 acres, of which 5.20 acres consist of riparian habitat.

Drainage FE-6

Drainage FE-6 originates to the east of the Far East Corridor alignment, traverses the disturbance limits and extends west where the OHWM disappears in grassland, approximately 1,500 feet from Gobernadora Creek. The channel varies from one to three feet in width. The slightly incised channel bed is composed of sandy loam and leaf litter. The channel banks are vegetated with poison oak (*Toxicodendron diversilobum*, UPL), lemonade berry (*Rhus integrifolia*, UPL), coast live oak (*Quercus agrifolia*, UPL), monkey flower (*Mimulus aurantiacus*, UPL), and Italian thistle (*Carduus pycnocephalis*, UPL).

The presence of an OHWM was indicated by change in soil character, shelving and destruction of terrestrial vegetation. The riparian oak canopy averages 40 feet in width. The feature includes 0.11 acre of ephemeral drainage. CDFG jurisdiction associated with the channel totals 1.12 acres, of which 1.07 acres consist of riparian habitat.

Drainage FEW-1

Drainage FEW-1 originates within the disturbance limits of the Far East Corridor alignment and extends west where it terminates in grassland, approximately 1,000 feet from Gobernadora Creek. The channel varies from three to five feet in width. The channel bed is composed of sandy loam and is vegetated with California sagebrush (*Artemesia californica,* UPL), lemonade berry (*Rhus integrifolia,* UPL), monkey flower (*Mimulus aurantiacus,* UPL), Mexican elderberry (*Sambucus mexicanus,* FACU), toyon (*Heteromeles arbutifolia,* UPL), coyote brush (*Baccharis pilularis,* UPL), prickly pear (*Opuntia littoralis sp.*, UPL), giant wild rye (*Leymus condensatus,* FACU), and non-native grass (*Brome* sp.).

The presence of an OHWM was determined by shelving and destruction of terrestrial vegetation. CDFG jurisdiction totals 0.12 acre, none of which consists of vegetated riparian habitat or wetland.

Drainage FE-7

Drainage FE-7 averages 13 feet in width. The channel originates north of the Far East Corridor – West alignment, traverses the disturbance limits and extends south of the disturbance limits to eventually join San Juan Creek. The drainage includes several tributaries ranging from two to five feet in width. The channel is composed of inundated coarse sandy loam with a gleyed color and sulfidic odor. The channel is vegetated with arroyo willow (*Salix lasiolepis,* FACW), lemonade berry (*Rhus integrifolia,* UPL), wrinkled rush (*Juncus rugulosis,* OBL), willow herb (*Epilobium ciliatum*, FACW), coast live oak (*Quercus agrifolia,* UPL), black willow (*Salix gooddingii,* OBL), and toyon (*Heteromeles arbutifolia,* UPL).

The presence of an OHWM was determined by change in soil character, shelving, and destruction of terrestrial vegetation. The riparian canopy averages 50 feet in width.

A tributary to Drainage FE-7 occurs within the alignment and averages two feet in width. The tributary originates within the disturbance limits, traverses the alignment and extends west to join the main channel. The channel is composed of loamy sand covered with leaf litter and is vegetated with Italian thistle (*Carduus pycnocephalus,* UPL), mustard (*Brassica nigra,* UPL), non-native grass (*Bromus sp., NI*), wild oat (*Avena sp.,* UPL *sp.*), curly dock (*Rumex crispus,* FACW-), cudweed (*Gnathalium canescens,* UPL), monkey flower (*Mimulus aurantiacus,* UPL), laurel sumac (*Malosma laurina,* UPL), California sagebrush (*Artemesia californica,* UPL), toyon (*Heteromeles arbutifolia,* UPL), and coast live oak (*Quercus agrifolia,* UPL).

The presence of an OHWM was indicated by shelving, change in soil character and destruction of terrestrial vegetation.

Corps jurisdiction associated with the channel totals 4.52 acres, of which 2.26 acres consist of jurisdictional wetlands. CDFG jurisdiction associated with the channel totals 12.27 acres of which 10.79 acres consist of willow riparian habitat and riparian oak woodland.

Drainage FEM-1

Drainage FEM-1 varies from five to eight feet in width. The channel originates north of the FEC-M alignment, traverses the disturbance limits, and extends south and west of the concrete plant to join San Juan Creek. The channel is a sandy wash and is vegetated with coast live oaks (*Quercus agrifolia,* UPL), mule fat (*Baccharis salicifolia,* FACW), western ragweed (*Ambrosia psilostachya,* FAC), buckwheat (*Eriogonum fasciculatum,* UPL), wrinkled rush (*Juncus rugulosis,* FACW), and sedge (*Cyperus sp.* ≥FACW).

The presence of an OHWM was indicated by change in soil character, shelving, and destruction of terrestrial vegetation. Portions of the drainage exhibit subsurface flows. The riparian vegetation varies from 10 to 52 feet in width. Corp jurisdiction associated with the channel totals 2.19 acres, of which 0.34 acres are wetland. CDFG jurisdiction associated with the channel totals 5.10 acres, of which 4.79 acres consist of riparian habitat.

Drainage FEM-2

Drainage FEM-2 is an ephemeral drainage vegetated with scrub located west of the disturbance limits of the FEC-M alignment. The feature totals 0.01 acres. CDFG jurisdiction totals 0.01 acres.

Drainage FEM-3

Drainage FEM-3 is a roadside, culturally altered drainage that supports natural plant communities. The channel originates north of the FEC-M alignment, traverses the disturbance limits, and extends south where it is diverted around the concrete plant. The OHWM disappears north of San Juan Creek. The channel varies from five to twenty feet in width. The channel bed is composed of coarse sand. The channel banks are vegetated with laurel sumac (*Malosma laurina,* UPL), mule fat (*Baccharis salicifolia,* FACW), Mexican elderberry (*Sambucus mexicanus,* FACU), buckwheat (*Eriogonum fasciclatum,* UPL), sedge (*Cyperus SP.*, ≥FACW), mustard (*Brassica nigra,* UPL), wild oat (*Avena sp.*, UPL), sycamore (*Platanus racemosa*, FACW) and curly dock (*Rumex crispus,* FACW).

The presence of an OHWM was indicated by destruction of terrestrial vegetation, change in soil character and shelving. The mule fat scrub varies from five to sixteen feet in width. CDFG jurisdiction associated with the channel totals 1.77 acres, all of which consists of riparian habitat.

Drainage FEM-5

Drainage FEM-5 is located west of the Far East Corridor alignment and south of the concrete plant. The high gradient channel averages one foot in width, is scoured to bedrock and is unvegetated. The banks of the channel support fascicled tarplant (*Hemizonia fasciculata*, UPL), wild lettuce (*Lactuca serriola*, UPL), curly dock (*Rumex crispus*, FACW), tocalote (*Centaurea melitensis*, UPL) black mustard (*Brassica nigra*, UPL), white clover (*Melilotus alba*, FACU), and telegraph weed (*Heterotheca grandiflora*, UPL).

The presence of an OHWM was determined by change in soil character, shelving and destruction of terrestrial vegetation. Corps and CDFG jurisdiction associated with the channel total 0.01 acre.

Drainage FEM-6

Drainage FEM-6 is located west of the Far East Corridor alignment and south of the concrete plant. The channel averages two feet in width. The banks of the channel support mule fat (*Baccharis salicifolia*, FACW), curly dock (*Rumex crispus*, FACW), tocalote (*Centaurea melitensis*, UPL) black mustard (*Brassica nigra*, UPL), white clover (*Melilotus alba*, FACU), and telegraph weed (*Heterotheca grandiflora*, UPL).

The presence of an OHWM was determined by change in soil character, shelving and destruction of terrestrial vegetation. Corps and CDFG jurisdiction associated with the channel total 0.02 acre.

Drainage FEM-7

Drainage FEM-7 is located west of the Far East Corridor alignment and south of the concrete plant. The channel averages two feet in width. The banks of the channel support mule fat (*Baccharis salicifolia*, FACW), curly dock (*Rumex crispus*, FACW), tocalote (*Centaurea melitensis*, UPL) black mustard (*Brassica nigra*, UPL), white clover (*Melilotus alba*, FACU), and telegraph weed (*Heterotheca grandiflora*, UPL).

The presence of an OHWM was determined by change in soil character, shelving and destruction of terrestrial vegetation. Corps jurisdiction associated with the channel total 0.01 acre. CDFG jurisdiction associated with the channel totals 0.02 acre all of which consists of mule fat scrub.

Drainage FEM-8

Drainage FEM-8 is located west of the Far East Corridor alignment and south of the concrete plant. The channel averages two feet in width and is somewhat incised. The channel bed is unvegetated. The banks of the channel support coastal sage scrub, riverwash species and non-

native herbs. There is a single patch of mule fat *(Baccharis salicifolia*, FACW) near the confluence with San Juan Creek.

The presence of an OHWM was determined by change in soil character, shelving and destruction of terrestrial vegetation. Corps jurisdiction totals 0.02 acre, none of which are wetlands. CDFG jurisdiction totals 0.07 acre, of which 0.06 acre consists of vegetated riparian habitat.

Drainage FEM-9

Drainage FEM-9 is located west of the Far East Corridor alignment and south of the concrete plant. The channel averages two feet in width and is somewhat incised. The channel bed is unvegetated. The banks of the channel support coastal sage scrub, riverwash species and non-native herbs. The channel appears to drain into FE-Seep 2.

The presence of an OHWM was determined by change in soil character, shelving and destruction of terrestrial vegetation. Corps and CDFG jurisdiction associated with the channel total 0.01 acre.

FEM Pond 1

FEM-Pond 1 is a mining pit that supports black willow (*Salix gooddingii*, OBL) and willowweed (*Polygonum lapathifolium*,OBL).

The feature results from mining operation s and is not subject to regulation by Corps or CDFG. The feature totals 3.61 acres, all of which are wetland.

Vernal Marsh FEVM 7

Vernal Marsh FEVM 7 is a basin that covers approximately 0.27 acre and was vegetated with scattered individuals of mule fat (*Baccharis salicifolia*, FACW-) and herbaceous hydrophytic vegetation including curly dock (*Rumex crispus*, FACW-), cocklebur (*Xanthium strumarium*, FAC+), and rabbitfoot grass (*Polypogon monspeliensis*, FACW+) in 1995. The basin was observed to be ponded from January 11, 2001 to April 4, 2001 meeting criteria 3 for hydric soils and the criteria for wetland hydrology (saturated in the upper 12 inches for a minimum of 18 consecutive days).

This feature is on the terrace immediately adjacent to San Juan Creek. This feature is adjacent to San Juan Creek and therefore, is subject to Corps jurisdiction. Corps jurisdiction associated with the vernal marsh totals 0.19 acre of jurisdictional wetland. This feature does not exhibit a bed or bank and is therefore not regulated by CDFG.

Vernal Marsh FEVM 8

Vernal Marsh FEVM 8 is a basin that covers approximately 0.48 acre and was vegetated with scattered individuals of mule fat (*Baccharis salicifolia*, FACW-) and herbaceous hydrophytic vegetation including curly dock (*Rumex crispus*, FACW-), cocklebur (*Xanthium strumarium*, FAC+), and rabbitfoot grass (*Polypogon monspeliensis*, FACW+) in 1995. The basin was observed to be ponded from January 25, 2001 to February 21, 2001 meeting criteria 3 for hydric soils and the criteria for wetland hydrology (saturated in the upper 12 inches for a minimum of 18 consecutive days). This feature is on the terrace immediately adjacent to San Juan Creek.

Corps jurisdiction associated with the vernal marsh totals 0.48-acre of jurisdictional wetland. This feature does not exhibit a bed or bank and is therefore not regulated by CDFG.

Vernal Marsh FEVM 9

Vernal Marsh FEVM 9 is a basin that covers approximately 0.79 acre and was vegetated with scattered individuals of mule fat (*Baccharis salicifolia*, FACW-) and black willow (Salix gooddingii, OBL) as well as herbaceous hydrophytic vegetation including needle-stemmed spike rush (*Eleocharis acicularis*, OBL), cocklebur (*Xanthium strumarium*, FAC+), curly dock (*Rumex crispus*, FACW-), and rabbitfoot grass (*Polypogon monspeliensis*, FACW+). The basin was observed to be ponded from January 11, 2001 to May 15, 2001 meeting criteria 3 for hydric soils and the criteria for wetland hydrology (saturated in the upper 12 inches for a minimum of 18 consecutive days).

This feature is adjacent to other jurisdictional features, and therefore is subject to Corps jurisdiction, which totals 0.78 acre.

Vernal Marsh FEVM 10

Vernal Marsh FEVM 10 is a basin that covers approximately 0.06 acre and was vegetated with scattered individuals of mule fat (*Baccharis salicifolia*, FACW-) and herbaceous hydrophytic vegetation including hyssop loosestrife (*Lythrum hyssopifolium*, FACW), curly dock (*Rumex crispus*, FACW-), and rabbitfoot grass (*Polypogon monspeliensis*, FACW+). The basin was observed to be ponded from January 11, 2001 to April 8, 2001 meeting criteria 3 for hydric soils and the criteria for wetland hydrology (saturated in the upper 12 inches for a minimum of 18 consecutive days).

This feature is on the terrace immediately adjacent to San Juan Creek. This feature is adjacent to San Juan Creek and therefore, is subject to Corps jurisdiction. Corps jurisdiction associated with the vernal marsh totals 0.06 acre of jurisdictional wetland. This feature does not exhibit a bed or bank and is therefore not regulated by CDFG.

Vernal Marsh FEVM 11

Vernal Marsh FEVM 11 is a basin that covers approximately 0.04 acre and was veg scattered individuals of mule fat (*Baccharis salicifolia*, FACW-) and herbaceous hy vegetation including needle-stemmed spike rush (*Eleocharis acicularis*, OBL), hyss (*Lythrum hyssopifolium*, FACW), wrinkled rush (*Juncus rugulosis*, OBL), and rabb (*Polypogon monspeliensis*, FACW+) in 1995. The basin was observed to be ponde February 13, 2001 to February 21, 2001 meeting criteria 3 for hydric soils.

This feature is on the terrace immediately adjacent to San Juan Creek. This feature San Juan Creek and therefore, is subject to Corps jurisdiction. Corps jurisdiction a: the vernal marsh totals 0.04 acre of jurisdictional wetland. This feature does not ex] bank and is therefore not regulated by CDFG.

Vernal Marsh FEVM 12

Vernal Marsh FEVM 12 is a basin that covers approximately 0.04 acre and was veg scattered individuals of mule fat (*Baccharis salicifolia*, FACW-) and herbaceous hy vegetation including wrinkled rush (*Juncus rugulosis*, OBL), hyssop loosestrife (*Ly hyssopifolium*, FACW), curly dock (*Rumex crispus*, FACW-), and rabbitfoot grass *monspeliensis*, FACW+) in 1995. The basin was observed to be ponded to a depth on February 21, 2001, meeting criteria 3 for hydric soils.

Corps jurisdiction associated with the vernal marsh totals 0.04-acre of jurisdictiona This feature does not exhibit a bed or bank and is therefore not regulated by CDFG

Vernal Pool FEVP 2

Vernal Pool FEVP 2 is a basin that covers approximately 0.18-acre and was vegeta fat (*Baccharis salicifolia*, FACW-), hyssop loosestrife (Lythrum hyssopifolium, F/ dock (*Rumex crispus*, FACW-), and rabbitfoot grass (*Polypogon monspeliensis*, F/ 1995. The basin was observed to be ponded from February 13, 2001 to February 2 meeting criteria 3 for hydric soils.

This feature is on the terrace immediately adjacent to San Juan Creek. This feature San Juan Creek and therefore, is subject to Corps jurisdiction. Corps jurisdiction a the vernal pool totals 0.18 acre of jurisdictional wetland. This feature does not exl bank and is therefore not regulated by CDFG.

FEM – Seep 1

FEM-Seep 1 supports black willow (*Salix gooddingii*, OBL), wrinkled rush (*Juncu* OBL), and western ragweed (*Ambrosia psilostachya*, FAC) growing on moist sand

with low chroma and redoxymorphic features. The seep has a clear drainage supplying runoff from the concrete plant, but has no clear drainage connecting it to San Juan Creek.

This feature is on the terrace immediately adjacent to San Juan Creek. This feature is adjacent to San Juan Creek and therefore, is subject to Corps jurisdiction. Corps jurisdiction total 0.51 acres, all of which are wetlands. CDFG jurisdiction totals 0.51 acres, all of which consist of vegetated riparian habitat.

FEM-San Juan Creek

San Juan Creek traverses the Far East Corridor alignment at a proposed bridge site. The channel bed varies from eight to 480 feet in width and contains perennial flows. The creek is a wide riparian area with one main wetland channel that begins to the east of the study area and terminates to the west of the proposed bridge. Some reaches are restricted within deeply incised bedrock, while others form braided channels in a broad floodplain. A second wetland channel originates at the freshwater marsh/pond approximately 650 feet to the east of the proposed bridge and flows on the south side of the broad channel bed. This channel extends west after the initial channel disappears. The creek is vegetated in part with arroyo willow (*Salix lasiolepis,* FACW), black willow (*Salix gooddingii,* OBL), yellow willow (*Salix lucida,* FACW), red willow (*Salix laevigata,* FACW), cattail (*Typha domingensis and Typha latifolia,* OBL), mule fat (*Baccharis salicifolia,* FACW), western sycamore (*Platanus racemosa,* FACW), giant reed (*Arundo donax,* FACW), monkey flower (*Mimulus cardinalis,* OBL), rabbitfoot grass (*Polypogon monspeliensis,* FACW), plantain (*Plantago major,* FACW), cocklebur (*Xanthium strumarium,* FAC+), white clover (*Melilotus alba,* FACU *albus*), duckweed (*Lemna sp.*, OBL), tamarisk (*Tamarix ramosissima.*, FACW), sow thistle (*Sonchus oleraceus, NI*), northern willow herb (*Epilobium ciliatum,* FACW), mugwort (*Artemesia douglasiana,* FAC), stinging nettles (*Urtica dioica,* FACW), African umbrella sedge (*Cyperus involucratus,* OBL), Mexican rush (*Juncus mexicanus,* FACW), and bulrush (*Scirpus microcarpus,* OBL). Within the channel bed, slightly raised gravel bars support some upland vegetation, such as prickly pear (*Opuntia littoralis* sp., UPL), but also exhibit very large debris racks. Several low flow channels, some with hydric soils and flowing water or saturated soil, characterize the section of creek under the bridge crossing. There are also several pockets wetlands in depressional areas. The channel bed is primarily cobble and clean sand. The sandy soils at the fringe of the pond are saturated and have low chroma colors and evidence of redox. Standing water in soil pits may indicate high ground water though shelving, litter and debris also indicate surface flow. This ponding area is vegetated with similar species.

There is an elevated portion of the streambed with no hydric characteristics that appears to separate the west end of the ponding area from the San Juan Creek except for at the southern most side of creek bed where the wetland channel flows. The presence of an OHWM was indicated by shelving, lines impressed upon the banks, destruction of terrestrial vegetation, change in soil character and the presence of litter and debris. Corp and CDFG jurisdiction

associated with the channel totals 26.87 acres, of which 2.92 acres consist of jurisdictional willow riparian wetlands.

Drainage FEM-10

Drainage FEM-10 originates within the disturbance limits of the Far East Corridor alignment and flows north to join San Juan Creek just beyond Ortega Highway. The channel is deeply incised and varies from three to six feet in width. The banks of the channel support mature oak woodland. The channel bed is composed of sandy loam to clay loam with some cobbles and contains several pockets of sediment and detrital material deposited behind accumulated debris. The channel is vegetated with poison oak (*Toxicodendron diversilobum*, UPL), mule fat (*Baccharis salicifolia*, FACW), monkyflower (*Mimulus aurantiacus*, UPL), heart-shaped pennstemon (*Keckiella cordifolia*,UPL), Italian thistle (*Carduus pycnocephalus*, UPL), and tumbleweed (*Salsola australis*, UPL). The riparian oak canopy varies from 30 to 90 feet in width.

Three tributary drainages discharge into Drainage FEM-10. The tributary channels are steep, moderately incised, and vary from three to four feet in width. The banks of the tributaries are vegetated with poison oak (*Toxicodendron diversilobum*, UPL), toyon (*Heteromeles arbutifolia*, UPL), coast live oak (*Quercus agrifolia*, UPL), laurel sumac (*Malosma laurina*, UPL), lemonade berry (*Rhus integrifolia*, UPL), arroyo willow (*Salix lasiolepis*, FACW), hollyleaf redberry (*Rhamnus ilicifolia*, UPL), monkeyflower (*Mimulus aurantiacus*, UPL), giant wild rye (*Leymus condensatus*, FACU), and heart leaved penstemmon (*Keckiella cordifolia*, UPL). A swale-like area occurs within one tributary that is vegetated with Mexican rush (*Juncus mexicanus*, FACW). The swale exhibits high chroma soils and was determined to be non-wetland.

The presence of an OHWM was indicated by shelving, destruction of terrestrial vegetation and the presence of litter and debris. The oak canopy averages 40 feet in width.

Another tributary drainage occurs within this drainage system and drains to a pond. The pond that appears to be fed by this tributary drainage only. The pond is elevated above Drainage FEM-10 and is vegetated with knotgrass (*Paspalum distichum*, OBL) and cattail (*Typha domingensis*, OBL). The pond was inundated in August 2001 and exhibits a gleyed clay loam soil. A sulfidic odor was detected during our August 2001 field visit.

The pond measures approximately 100-feet by 180-feet. Corps and CDFG jurisdiction associated with the pond totals 0.46 acre.

Corps jurisdiction associated with the Drainage FEM-10 system totals 1.82 acres, of which 0.63 acres are wetland. CDFG jurisdiction associated with the drainage system totals 6.30 acres, of which 6.04 acres consist of riparian habitat.

Drainage FEM-11

Drainage FEM-11 has been severely trampled by cattle and includes a stock pond impoundment. The channel originates east of the Far East Corridor alignment, exits the disturbance limits to the south and continues to parallel the disturbance limits for several thousand feet. The channel varies from one to ten feet in width and is vegetated with mule fat scrub, willow riparian and upland vegetation.

The uppermost reach of the channel is a deeply entrenched with a cobble and loam bed. This portion of the channel is vegetated with mule fat (*Baccharis salicifolia,* FACW), coyote brush (*Baccharis pilularis,* UPL), tocolate (*Centaurea melitensis,* UPL), Italian rye grass (*Lolium multiflorum,* FAC), spike rush (*Eleocharis*), and mustard (*Brassica nigra,* UPL). The slopes are vegetated with monkeyflower (*Mimulus aurantiacus,* UPL), sagebrush (*Artemesia californica,* UPL), prickly pear (*Opuntia littoralis,* UPL), black sage (*Salvia mellifera,* UPL), and Mexican elderberry (*Sambucus mexicanus,* FACU). Some portions of the upper reach are surrounded by both native and non-native grasses and vegetated with western ragweed (*Ambrosia psilostachya,* FAC), rush (*Juncus* sp., ≥FACW), rabbitfoot grass (*Polypogon monspeliensis,* FACW), mule fat (*Baccharis salicifolia,* FACW), cocklebur (*Xanthium strumarium,* FAC+), and curly dock (*Rumex crispus,* FACW-).

The drainage system includes several tributary drainages. Portions of the main channel and tributaries are severely trampled by cattle and vegetated with white sage (*Salvia apiana,* UPL), needlegrass (*Nassella pulchra,* UPL), western ragweed (*Ambrosia psilostachya,* FAC), cocklebur (*Xanthium strumarium,* FAC+), curly dock (*Rumex crispus,* FACW-), non-native grasses, and mule fat (*Baccharis salicifolia*, FACW).

A brief portion of the channel that extends outside of the disturbance limits supports willow woodland. This portion of the channel exhibited standing water in July 2001 and is vegetated with arroyo willow (*Salix lasiolepis,* FACW), wild rose (*Rosa californica,* FAC+), lemonade berry (*Rhus integrifolia,* UPL), monkey flower (*Mimulus aurantiacus,* UPL), toyon (*Heteromeles arbutifolia,* UPL), wild celery (*Apium graveolens,* FACW), Mexican rush (*Juncus mexicanus,* FACW), spike rush (*Eleocharis,* ≥FACW), cocklebur (*Xanthium strumarium,* FAC+), and rabbitfoot grass (*Polypogon monspeliensis,* FACW).

The reach just north of the stock pond is a low gradient drainage with 5 inches of coarse sand overlaying a loamy fine sand with redoxymorphic features. This portion of the channel is vegetated with mule fat (*Baccharis salicifolia,* FACW), cocklebur (*Xanthium strumarium.* FAC+), western ragweed (*Ambrosia psilostachya,* FAC), rabbitfoot grass (*Polypogon monspeliensis,* FACW), and rush (*Juncus Sp.,* ≥FACW).

South of the stock pond the channel bed varies between loamy clay, sand and silty clay loam. In the southern reaches of the channel soils are low chrome (10YR4/2) with mottles. The channel is vegetated with western ragweed (*Ambrosia psilostachya,* FAC), rabbitfoot grass (*Polypogon*

monspeliensis, FACW), lemonade berry (*Rhus integrifolia,* UPL), black willow (*Salix gooddingii,* OBL), mule fat (*Baccharis salicifolia,* FACW), coast live oak (*Quercus agrifolia,* UPL), toyon (*Heteromeles arbutifolia,* UPL), salt grass (*Distichlis spicata,* FACW), bulrush (*Scirpus americanus,* OBL), spike rush (*Eleocharis sp.*, ≥FACW), cocklebur (*Xanthium strumarium,* FAC+), Mexican rush (*Juncus mexicanus,* FACW), cattail (*Typha sp.*, OBL), and knotgrass (*Paspalum distichum,* OBL). The slopes of the channel are intermittently vegetated with California sagebrush (*Artemesia californica,* UPL), lemonade berry (*Rhus integrifolia,* UPL), poison oak (*Toxicodendron diversilobum,* UPL), coast live oak (*Quercus agrifolia,* UPL), and goldenbush (*Isocoma menzesii,* UPL), or a mosaic of native and non-native grassland. The presence of an OHWM was indicated by clear lines impressed upon the bank, destruction of vegetation, shelving and change in soil character. The riparian vegetation varies from five feet to 100 feet in width.

The tributary drainages generally vary from one to five feet wide, with one tributary ranging from eight to ten feet wide. The tributaries are generally vegetated with upland and riparian scrub vegetation including mule fat (*Baccharis salicifolia,* FACW), coyote brush (*Baccharis pilularis,* UPL), monkey flower (*Mimulus aurantiacus,* UPL), prickly pear (*Opuntia littoralis,* UPL), white sage (*Salvia apiana,* UPL), California sagebrush (*Artemesia californica,* UPL), western ragweed (*Ambrosia psilostachya,* FAC), tarweed (*Hemizonia fascicularis,* UPL), needlegrass (*Nassella pulchra,* UPL), black sage (*Salvia* mellifera, UPL), Mexican elderberry (*Sambucus mexicanus,* FACU), rush (*Juncus sp.*, ≥FACW), rabbitfoot grass (*Polypogon monspeliensis,* FACW), cocklebur (*Xanthium strumarium,* FAC+), curly dock (*Rumex crispus,* FACW-), tocalote (*Centaurea melitensis,* UPL), Italian rye grass (*Lolium multiflorum,* FAC), and cudweed (*Gnathalium canescens,* UPL).

The tributary that ranges from eight to ten feet wide is composed of sandy loam soil and has been heavily impacted by cattle. Several large ponding areas occur throughout the length of the channel. The upper reach of the channel supports scattered mule fat (*Baccharis salicifolia,* FACW) and nonnative grasses. The middle reach is vegetated with lemonade berry (*Rhus integrifolia,* UPL), arroyo willow (*Salix lasiolepis,* FACW), fennel (*Foeniculum vulgare,* FACU), scrub oak (*Quercus dumosa*), western ragweed (*Ambrosia psilostachya,* FAC), mule fat (*Baccharis salicifolia,* FACW), black willow (*Salix gooddingii,* OBL), narrow leaved cattail (*Typha domingensis,* OBL), clover (*Melilotus alba,* FACU), and fennel (*Foeniculum vulgare,* FACU), and has a bed consisting of 5" of coarse sand overlaying high chroma sandy loam with no redoxymorphic features. The lower reach is dominated by arroyo willow (*Salix lasiolepis,* FACW) and is inundated. The riparian vegetation varies from 17 feet to 34 feet in width.

A wetland area originates west of the alignment and discharges into FEM-11. The channel is entrenched due to erosion and varies from one to five feet in width. The channel bed is composed of gleyed sandy clay with oxidized root channels and redoxymorphic feature (mottles). The channel was vegetated with wrinkled rush (*Juncus rugulosis,* FACW), bedstraw (*Galium*), western ragweed (*Ambrosia psilostachya,* FAC), weedy cudweed (*Gnathalium luteo-album*), cudweed (*Gnathalium canesens*, UPL) cocklebur (*Xanthium strumarium,* FAC+), daisy

(*Erigeron*), spike rush (*Eleocharis*), lemonade berry (*Rhus integrifolia,* UPL), California sagebrush (*Artemesia californica,* UPL), monkey flower (*Mimulus aurantiacus,* UPL), coyote brush (*Baccharis pilularis,* UPL), white sage (*Salvia apiana,* UPL), and buckwheat (*Eriogonum fasciculatum,* UPL).

Corps jurisdiction totals 6.65 acres, of which 5.80 acres are wetlands. CDFG jurisdiction totals 9.4 acres, of which 9.18 acres consist of vegetated riparian habitat.

Drainage FEM-12

Drainage FEM-12 originates to the east of the Far East Corridor alignment and traverses the disturbance limits where it discharges into Cristianitos Creek. The channel varies from four to five feet in width and is composed of fine sandy loam with a high chroma and a moderately developed A horizon. The channel is vegetated with coyote brush (*Baccharis pilularis,* UPL), lemonade berry (*Rhus integrifolia,* UPL), California sagebrush (*Artemesia californica,* UPL), mule fat (*Baccharis salicifolia,* FACW), and sticky monkey flower (*Mimulus aurantiacus*. UPL). The lower portion of the drainage is vegetated with mule fat/coyote brush scrub with approximately 30-percent cover by mule fat.

Two tributary drainages enter Drainage FEM-12. These vary from one to four feet in width and have been heavily impacted by cattle. The channel bed is composed of high chroma sandy loam with well developed A horizon. Vegetation within these tributaries includes California sagebrush (*Artemesia californica,* UPL), coyote brush (*Baccharis pilularis,* UPL), monkey flower (*Mimulus aurantiacus,* UPL), toyon (*Heteromeles arbitufolia*), lemonade berry (*Rhus integrifolia,* UPL), Mexican elderberry (*Sambucus mexicanus,* FACU), needlegrass (*Nassella pulchra,* UPL), non-native grasses, western ragweed (*Ambrosia psilostachya,* FAC), tocalote (*Centaurea melitensis,* UPL), goldenbush (*Isocoma menzesii,* UPL), and mule fat (*Baccharis salicifolia,* FACW).

Corp jurisdiction associated with the drainage system totals 0.52 acre. CDFG jurisdiction associated with the drainage system totals 0.63 acre, of which 0.22 acre consists of mule fat scrub.

Drainage FEM-13

Drainage FEM-13 originates to the east of the Far East Corridor alignment and traverses the disturbance limits and continues west until it terminates in mule fat scrub with a non-native understory. There is a culvert visible on the west side of the road that apparently connects FEM-13 to Cristianitos Creek. The channel varies from five to 22 feet in width alternates between grassy reaches and cobble substrate with cobbles predominating. The upper reach of the drainage, over 300 feet to the northeast of the disturbance limits, has evidence of seeps. The drainage is predominately vegetated with sagebrush (*Artemesia californica,* UPL), lemonade berry (*Rhus integrifolia,* UPL), coyote brush (*Baccharis pilularis,* UPL), mule fat (*Baccharis*

salicifolia, FACW), western ragweed (*Ambrosia psilostachya,* FAC), non-native grasses, saltgrass (*Distichlis spicata,* FACW), and rabbitfoot grass (*Polypogon monspeliensis,* FACW). There is, however, an extensive stretch of wetland within the channel. It is vegetated with rabbitfoot grass (*Polypogon monspeliensis*, FACW) and saltgrass (*Distichlis spicata*, FACW). The channel exhibited surface water in August and the bed was composed of low chroma (10YR4/2) silty clay loam soils with mottles. After its confluence with a small tributary, the channel is characterized by broad mule fat scrub. The understory contains western ragweed (*Ambrosia psilostachya,* FAC), rabbitfoot grass (*Polypogon monspeliensis,* FACW), various non-native grasses, Italian thistle (*Carduus pycnocephalis,* UPL), bull thistle (*Cirsium vulgare,* FACU), giant wild rye (*Leymus condensatus,* FACU), and curly dock (*Rumex crispus,* FACW-). Before the confluence with the tributary, mule fat (*Baccharis salicifolia,* FACW) is sparse and located within the channel. After the confluence, the mule fat scrub varies from 20 to 160 feet in width. Cattle had destroyed much of the channel. Where discernible, the presence of OHWM was indicated by change in soil character and destruction of terrestrial vegetation.

The tributary channel originates to the east of the alignment and discharges into main channel of Drainage FEM-13 within the disturbance limits. The channel varies from four to five feet in width and is composed of cobbly to large boulders. The drainage is vegetated with coast live oak (*Quercus agrifolia,* UPL), coyote brush (*Baccharis pilularis,* UPL), western ragweed (*Ambrosia psilostachya,* FAC), mule fat (*Baccharis salicifolia,* FACW), lemonade berry (*Rhus integrifolia,* UPL), black sage (*Salvia mellifera,* UPL), mustard (*Brassica nigra,* UPL), and giant wild rye (*Leymus condensatus,* FACU). The presence of an OHWM was indicated by destruction of terrestrial vegetation and shelving.

Corps jurisdiction associated with the FEM-13 drainage system totals 0.89 acre, of which 0.03 acre consists of jurisdictional wetlands. CDFG jurisdiction associated with the drainage system totals 3.05 acres, of which 2.52 acres consist of mule fat scrub.

Drainage FEM-14

Drainage FEM-14 originates to the east of the Far East Corridor alignment and traverses the disturbance limits to join Cristianitos creek. The channel varies from three to four feet in width and has been scoured to badland sediments. The drainage is vegetated with western ragweed (*Ambrosia psilostachya,* FAC), saltgrass (*Distichlis spicata,* FACW), mule fat (*Baccharis salicifolia,* FACW), coast live oak (*Quercus* , UPL), non-native grasses, needlegrass (*Nassella pulchra,* UPL), milkweed (*Asclepias fascicularis*), sagebrush (*Artemesia californica,* UPL), and coyote brush (*Baccharis pilularis,* UPL).

The presence of an OHWM was indicated by shelving and destruction of terrestrial vegetation. Corps jurisdiction associated with the channel totals 0.24 acre. CDFG jurisdiction associated with the channel totals 0.29 acre, of which 0.06 acre consists of riparian oak habitat.

Drainage FEM-15

Drainage FEM-15 originates to the east of the Far East Corridor alignment and traverses the disturbance limits to join Cristianitos Creek. The channel is moderately incised and varies from five to seven feet in width. The channel bed is composed of loamy coarse sand overlaying sandy loam. The drainage is vegetated with Bermuda grass (*Cynodon dactylon,* FAC), rabbitfoot grass (*Polypogon monspeliensis,* FACW), cocklebur (*Xanthium strumarium,* FAC+), deer weed (*Lotus scoparius,* UPL), tocolate (*Centaurea melitensis,* UPL), lemonade berry (*Rhus integrifolia,* UPL), coyote brush (*Baccharis pilularis,* UPL), mule fat (*Baccharis salicifolia,* FACW), sagebrush (*Artemesia californica,* UPL), and arroyo willow (*Salix lasiolepis,* FACW). The single patch of arroyo willow measures approximately 300 square feet and one patch of mule fat measures approximately 100 square feet. All other scarce mule fat is contained within the channel. The presence of an OHWM was indicated by shelving, the presence of litter and debris and destruction of terrestrial vegetation.

A tributary channel originates approximately east of the alignment and traverses the disturbance limits to join the main FEM-15 channel. The tributary is deeply incised and averages three feet wide. The channel bed is composed of sand and cobbles and is vegetated with cudweed (*Gnathalium canescens,* UPL), arroyo willow (*Salix lasiolepis,* FACW), coyote brush (*Baccharis pilularis,* UPL), lemonade berry (*Rhus integrifolia,* UPL), goldenbush (*Isocoma menzesii,* UPL), Bermuda grass (*Cynodon dactylon,* FAC), needlegrass (*Nassella pulchra,* UPL), and tocalote (*Centaurea melitensis,* UPL).

The presence of an OHWM was indicated by the presence of litter and debris, destruction of terrestrial vegetation and shelving. All riparian vegetation is scarce and located within the OHWM.

Corps jurisdiction associated with the FEM-15 drainage system totals 0.36 acre. CDFG jurisdiction associated with the drainage system totals 0.36 acre.

Drainage FEM-16

Drainage FE-24 is deeply incised. The headwaters of Drainage FE-24 are erosional and located within a graded area. The drainage originates to the east of the Far East Corridor alignment and traverses the disturbance limits to join Cristianitos creek. The channel is scoured to sandy badland sediments and varies from three to five feet in width. The upper reach is vegetated with arroyo willow (*Salix lasiolepis,* FACW), mule fat (*Baccharis salicifolia,* FACW), goldenbush (*Isocoma menzesii,* UPL), monkey flower (*Mimulus aurantiacus,* UPL), lemonade berry (*Rhus integrifolia,* UPL), bindweed (*Convolvulus arvensis,* UPL), cudweed (*Gnathalium canescens,* UPL), Bermuda grass (*Cynodon dactylon,* FAC), and non-native grasses. Two arroyo willows total approximately 250 square feet and scattered mule fat near the confluence totals approximately 200 square feet. After the confluence with FE-24a, the drainage is vegetated with coast live oaks (*Quercus agrifolia,* UPL), toyon (*Heteromeles arbutifolia,* UPL), Mexican

elderberry (*Sambucus mexicanus,* FACU), giant wild rye (*Leymus condensatus,* FACU), lemonade berry (*Rhus integrifolia,* UPL), and poison oak (*Toxicodendron diversilobum,* UPL). The oak canopy averaged 80 feet in width. The presence of an OHWM was indicated by destruction of terrestrial vegetation, the presence of litter and debris, change in soil character and shelving.

A tributary drainage originates to the east of the alignment and traverses the disturbance limits to join the main FEM-16 channel. The incised tributary is composed of partially lithified sediments and averages two feet wide. The channel is vegetated with goldenbush (*Isocoma menzesii,* UPL), mustard (*Brassica nigra,* UPL), non-native grasses and cudweed (*Gnathalium canescens).* The presence of an OHWM was indicated by shelving and destruction of terrestrial vegetation.

Corps jurisdiction associated with the FEM-16 drainage system totals 0.22 acre. CDFG jurisdiction associated with the drainage system totals 0.96 acre, of which 0.86 acre consists of riparian habitat.

Gabino Creek

Gabino Creek originates to the east of the Far East Corridor alignment and traverses the disturbance limits to join Cristianitos Creek. The channel varies from 11 to 380 feet in width and is composed of cobbly sand. The majority of the drainage is a broad floodplain with various braids throughout. Some braids supports only annual vegetation. To the east of the disturbance limits there appears to be a 70-foot wide low flow channel that is directed through six four-inch corrugated metal pipes. While in some years water may flow across the road from the northern half of the channel, this does not appear to be an ordinary occurrence. No saturated soil was apparent to the east of the existing road. There were no debris or sediment deposits to indicate ordinary high flows. West of the existing road, the sandy substrate was saturated to the surface from high groundwater. In some locations, the coarse sand substrate contained high chroma mottles and some organic streaking. The lower reach of the channel is vegetated with arroyo willow (*Salix lasiolepis,* FACW), mule fat (*Baccharis salicifolia,* FACW), (*Cyperus erogrostis,* FACW), mugwort (*Artemesia douglasiana,* FAC), poison oak (*Toxicodendron diversilobum,* UPL), coast live oak (*Quercus agrifolia,* UPL), western ragweed (*Ambrosia psilostachya,* FAC), rabbit-foot grass (*Polypogon monspeliensis,* FACW), tamarisk (*Tamarix sp.*, FACW), and (*Gnathalium luteo-album,* FACW-). The upper reach of the channel supports open wash habitat, mule fat scrub and sycamore islands. The vegetation is patchy, covering perhaps 50 percent of the channel bed.

The presence of an OHWM was indicated by the presence of litter and debris, destruction of vegetation, shelving and change in soil character. The riparian vegetation varies from 50 feet to 380 feet in width. Corps jurisdiction associated with the channel totals 4.74 acres, of which 0.19 acre consists of jurisdictional wetlands. CDFG jurisdiction associated with the channel totals 4.32 acres all of which consist of riparian habitat.

Cristianitos Creek

Cristianitos Creek remains west of the Far East Corridor alignment for most of its length. The channel varies from eight to 30 feet in width and is composed of cobbly sand. The sandy substrate was saturated to the surface from high groundwater. Before the confluence with Gabino, vegetation includes arroyo willow (*Salix lasiolepis,* FACW), poison oak (*Toxicodendron diversilobum,* UPL), coast live oak (*Quercus agrifolia,* UPL), stinging nettle (*Urtica dioica,* FACW), narrow leaved cattail (*Typha sp.*, OBL), sedge, toyon (*Heteromeles arbutifolia,* UPL), plantain (*Plantago major*, FACW), Mexican elderberry (*Sambucus mexicana*, FAC), white clover (*Melilotus alba,* FACU*)*, milkweed (*Ascelpisa fascicularis*, FAC), and lemonade berry (*Rhus integrifolia*, UPL). Further south under the proposed bridge, the channel is vegetated with coast live oak (*Quercus agrifolia*, UPL), arroyo willow (*Salix lasiolepis*, FACW), narrow leaved cattail (*Typha sp.*, OBL) Sedge (*Cyperus sp.*, ≥FACW), white clover (*Melilotus alba,* FACU*)*, deerweed (*Lotus scoparius*, UPL), sycamore (*Platanus racemosa*, FACW), cottonwood (*Populus fremontii*, FAC+), wrinkled rush (*Juncus rugulosus*, OBL), watercress (*Rorippa nasturtium-aquatica*, OBL), and willow herb (*Epilobum ciliatum*, FACW), and the soil has a mucky organic layer above the sand. The riparian vegetation, including emergent wetland and oak woodland varies from 60 feet to 150 feet in width.

A small tributary to Cristianitos Creek originates with a concrete V-ditch to the west of the alignment and extends under the road through a four-inch corrugated metal pipe to join the main Cristianitos Creek channel. The tributary channel averages two feet in width and is composed of silty clay loam sediment deposits. The banks of the channel support Mexican elderberry (*Sambucus mexicana*, FACU), coast live oak (*Quercus agrifolia*, UPL), and arroyo willow (*Salix lasiolepis*, FACW) with a poison oak (*Toxicodendron diversilobum*, UPL), wild oat (*Avera sp.*,UPL), and milk thistle (*Silybum marianum*, UPL) understory. The riparian vegetation averages 40 feet in width.

The presence of an OHWM was indicated by destruction of terrestrial vegetation, change in soil character and shelving.

Corps jurisdiction associated with Cristianitos Creek totals 18.06 acres, of which 9.64 acres consists of jurisdictional wetlands. CDFG jurisdiction associated with Cristianitos Creek totals 47.59 acres, of which 47.3 acres consist of riparian habitat.

Drainage FEM-17

Drainage FEM-17 originates to the east of the Far East Corridor alignment and traverses the disturbance limits to join Cristianitos creek. The channel is a relatively well-defined sandy wash that varies from four to five feet in width. The tributaries to Drainage FEM-17 average two feet wide. One tributary is scoured while the other supports riparian vegetation that averages 20 feet in width. The upper reach of the channel is vegetated with California sagebrush (*Artemesia californica,* UPL), coyote brush (*Baccharis pilularis,* UPL), poison oak (*Toxicodendron*

diversilobum, UPL), arroyo willow (*Salix lasiolepis*, FACW), Mexican elderberry (*Sambucus mexicanus*, FACU), monkey flower (*Mimulus aurantiacus*, UPL), deerweed (*Lotus scoparius*, UPL), and cocklebur (*Xanthium strumarium*, FAC+). The lower reach of the channel supports sparse mule fat (*Baccharis salicifolia*, FACW) and black willow (*Salix gooddingii*, OBL) within the banks as well as (*Baccharis pilularis*, UPL) and coast live oaks (*Quercus agrifolia*, UPL) on the banks.

The presence of an OHWM was indicated by change in soil character. The channels willow and mule fat scrub varies from five to 25 feet in width. Corps jurisdiction associated with the channel totals 0.44 acre. CDFG jurisdiction associated with the channel totals 1.29 acres, of which 1.11 acres consists of willow scrub.

Drainage FEM-18

Drainage FEM-18 is an incised channel to the east of the disturbance limits of the Far East Corridor alignment that varies between 1 and 2 feet in width. The lower portion is comprised of ephemeral oak woodland and scrub. The channel connects to Cristianitos Creek.

Corps jurisdiction totals 0.04 acre, none of which are wetlands. CDFG jurisdiction totals 0.12 acre, of which 0.09 acre consists of vegetated riparian habitat.

Drainage FEM-19

Drainage FEM-19 is an incised channel to the east of the disturbance limits of the Far East Corridor alignment and is vegetated with a canopy of oak and upland scrub. The channel connects to Cristianitos Creek.

Corps jurisdiction totals 0.01 acre, none of which is wetland. CDFG jurisdiction totals 0.01 acre, none of which consist of vegetated riparian habitat.

Drainage FEM-20

Drainage FEM-20 is an incised channel to the east of the Far East Corridor alignment that is vegetated with a canopy of oak and upland scrub. The channel connects to Cristianitos Creek. Corps jurisdiction totals 0.02 acre. CDFG jurisdiction totals 0.02 acre, none of which consist of vegetated riparian habitat.

F. FAR EAST CORRIDOR – WEST STUDY AREA

Several jurisdictional areas associated with Far East Corridor – West Alternative (FEC-W) study area were delineated independently for Rancho Mission Viejo. These areas have been verified by both Corps and CDFG and are indicated on the delineation maps as verified. For all other areas, the jurisdictional totals were mapped in 2001 and 2003. Exhibit 1 depicts the location and extent

of Corps jurisdictional areas. Exhibit 2 depicts the location and extent of CDFG jurisdictional areas.

Corps jurisdiction associated with the FEC-W Alternative study area totals approximately 178.16 acres, of which 109.76 acres consist of jurisdictional wetlands. CDFG jurisdiction associated with the FEC-W Alternative study area totals 315.90 acres, of which 307.86 acres consists of vegetated riparian or wetland habitat. CCC jurisdiction associated with the FEC-W Alternative study area totals approximately 184.36 acres, all of which consist of vegetated riparian habitat and 134.01 acres, of which consist of jurisdictional wetlands. CCC jurisdiction associated with the FEC-W Alternative study area totals approximately 115.06 acres, all of which consist of one-parameter wetlands.

TABLE A-8
JURISDICTIONAL AREAS
FAR EAST CORRIDOR – WEST STUDY AREA
(in acres)

	CORPS[2]		CDFG	
Jurisdictional Feature[1]	**Total**	**Wetlands**	**Total**	**Vegetated**
FE/C/7 WETLAND 1	12.62	12.62	12.62	12.62
FE/C/7-1	0.09	0.00	0.73	0.66
FE/C/7 WETLAND 2	0.00	0.00	0.00	0.00
FEC/7-2	0.00	0.00	0.02	0.00
FE/C/7-3	0.00	0.00	0.01	0.00
FE/C/7-4	0.00	0.00	0.02	0.00
FE/7-1	0.00	0.00	3.27	3.16
FE/7-2	0.00	0.00	0.57	0.48
FE-1	0.00	0.00	1.76	1.70
FE – WETLAND 1	0.00	0.00	0.00	0.00
FE-2	0.00	0.00	5.81	5.81
FE-2A	0.00	0.00	1.48	1.44
FE-2B	0.14	0.00	0.14	0.00
FE – POND 1	0.00	0.00	0.00	0.00
FE-3 CANADA GOBANADORA	1.91	1.85	6.72	6.72
FE-4	0.00	0.00	4.82	4.82
FE-5	0.63	0.15	5.46	5.20
FE – WETLAND 2	0.00	0.00	0.00	0.00
FE-6	0.00	0.00	1.12	1.07
FEW –1	0.00	0.00	0.12	0.00
FE-7	4.52	2.26	12.27	10.79
FEW – SAN JUAN CREEK	8.10	2.85	18.66	18.66
FEW-2	0.16	0.00	1.31	1.31
FEW-3	0.00	0.00	0.07	0.07
FE/7-3	4.14	0.03	11.97	10.01
FE/7-4	0.00	0.00	2.47	2.38
FE/7-5	0.00	0.00	0.02	0.00
FE/7-6	0.36		2.17	1.95
FE/7-7	1.35	0.09	11.55	11.19
CRISTIANITOS CREEK	18.06	9.64	47.59	47.30
FE/7-8	0.43	0.00	2.91	2.62
FE/7-8A	0.05	0.00	0.05	0.00

	CORPS[2]		CDFG	
Jurisdictional Feature[1]	**Total**	**Wetlands**	**Total**	**Vegetated**
FE/7-8B	0.01	0.00	0.01	0.00
FE/7-9	0.18	0.00	0.18	0.00
FE/7-10	0.31	0.00	2.90	2.76
FE/7-11	1.09	0.12	1.35	1.35
FE/7-12	1.39	0.68	3.06	3.04
FE/7-13	0.02	0.00	0.02	0.00
FE/7-14	0.34	0.00	0.38	0.23
FE/7-VM 16	0.05	0.05	0.00	0.00
FE/7-VM 17	0.05	0.05	0.00	0.00
FE/7-VM 18	0.04	0.04	0.00	0.00
FE/7-VM 19	0.06	0.06	0.00	0.00
FE/7-15	0.40	0.03	0.88	0.64
FE/7-16	0.23	0.00	0.23	0.00
FE/7-17	0.21	0.00	0.21	0.00
FE/7-18	1.10	0.00	1.72	0.95
FE/7-19	0.03	0.00	0.03	0.00
FE/7-20	0.03	0.00	0.03	0.00
FE/7-21	0.28	0.00	1.68	1.68
FE/7-22	0.63	0.00	1.38	1.23
FE/7-23	0.02	0.00	0.02	0.00
FE/7-24	0.04	0.00	0.04	0.00
FE/7-25	0.05	0.00	0.05	0.00
SAN MATEO CREEK	35.33	15.25	47.71	47.71
SAN MATEO MARSH	68.55	68.55	68.55	68.55
SAN MATEO MARSH – EAST OF I5	13.60	13.60	24.46	24.46
FE/7-VM 20	0.05	0.05	0.00	0.00
FE/7-VP 3	0.18	0.18	0.00	0.00
FE/7-VP 4	0.03	0.03	0.00	0.00
SAN ONOFRE CREEK	1.39	1.39	5.30	5.30
TOTAL	**178.25**	**109.81**	**315.90**	**307.86**

[1] These features are depicted on Exhibits 1 and 2.

[2] Refer to Appendix B for isolated features totals

F.1 DRAINAGE DESCRIPTIONS – FEC-W STUDY AREA

Portions of the FEC-W Alternative overlap with the CC, CC-ALPV, A7C-ALPV, A7C-FEC-M and FEC-M Alternatives. Please see drainage descriptions above for features that have been previously addressed.

FEW-San Juan Creek

San Juan Creek traverses the alignment at a proposed bridge site. The channel bed varies from eight to 480 feet in width and contains perennial flows. The creek is a wide riparian area with one main wetland channel that begins to the east of the study area and terminates to the west of the proposed bridge. Some reaches are restricted within deeply incised bedrock, while others form braided channels in a broad floodplain. A second wetland channel originates at the freshwater marsh/pond approximately 650 feet to the east of the proposed bridge and flows on the south side of the broad channel bed. This channel extends west after the initial channel disappears. The creek is vegetated in part with arroyo willow (*Salix lasiolepis,* FACW), black willow (*Salix gooddingii,* OBL), yellow willow (*Salix lucida,* FACW), red willow (*Salix laevigata,* FACW), cattail (*Typha domingensis and Typha latifolia,* OBL), mule fat (*Baccharis salicifolia,* FACW), western sycamore (*Platanus racemosa,* FACW), giant reed (*Arundo donax,* FACW), monkey flower (*Mimulus cardinalis,* OBL), rabbitfoot grass (*Polypogon monspeliensis,* FACW), plantain (*Plantago major,* FACW), cocklebur (*Xanthium strumarium,* FAC+), white clover (*Melilotus alba,* FACU *albus*), duckweed (*Lemna sp.*, OBL), tamarisk (*Tamarix ramosissima.*, FACW), sow thistle (*Sonchus oleraceus, NI*), northern willow herb (*Epilobium ciliatum,* FACW), mugwort (*Artemesia douglasiana,* FAC), stinging nettles (*Urtica dioica,* FACW), African umbrella sedge (*Cyperus involucratus,* OBL), Mexican rush (*Juncus mexicanus,* FACW), and bulrush (*Scirpus microcarpus,* OBL). Within the channel bed, slightly raised gravel bars support some upland vegetation, such as prickly pear (*Opuntia littoralis* sp., UPL), but also exhibit very large debris racks. Several low flow channels, some with hydric soils and flowing water or saturated soil, characterize the section of creek under the bridge crossing. There are also several pockets wetlands in depressional areas. The channel bed is primarily cobble and clean sand. The sandy soils at the fringe of the pond are saturated and have low chroma colors and evidence of redox. Standing water in soil pits may indicate high ground water though shelving, litter and debris also indicate surface flow. This ponding area is vegetated with similar species. There is an elevated portion of the streambed with no hydric characteristics that appears to separate the west end of the ponding area from the San Juan Creek except for at the southern most side of creek bed where the wetland channel flows.

The presence of an OHWM was indicated by shelving, lines impressed upon the banks, destruction of terrestrial vegetation, change in soil character and the presence of litter and debris. Corps jurisdiction totals 8.10 acres, of which 2.85 acres are wetlands. CDFG jurisdiction totals 18.66 acres, all of which consists of vegetated riparian habitat.

Drainage FEW-2

Drainage FEW-2 consists of an incised channel with a sandy loam bed. The presence of an OHWM was indicated by sediment deposits, litter and debris. The channel banks are vegetated with coast live oak (*Quercus agrifolia*, UPL).

Corps jurisdiction totals 0.16 acres, none of which are wetlands. CDFG jurisdiction totals 1.31 acres, all of which consists of vegetated riparian habitat.

Drainage FEW-3

Drainage FEW-3 consists of an marked incision. CDFG jurisdiction totals 0.07 acres, all of which consists of vegetated riparian habitat.

APPENDIX B

I. SUMMARY OF IMPACTS TO ISOLATED FEATURES BASED ON OHWM

Tables B-1 through B-12 summarize permanent impacts to isolated features based on the initial and ultimate disturbance limits.

TABLE B - 1
PERMANENT IMPACTS TO ISOLATED FEATURES
CENTRAL CORRIDOR COMPLETE – INITIAL ALTERNATIVE
(in acres)

Feature Name[1]	Wetland Area	Non-Wetland Waters	Total Area	Total Length (linear feet)
C-WETLAND 1	0.40	0.00	0.40	NA
C-2	0.13	0.11	0.24	1,013
C-3	0.28	0.01	0.29	743
C-4	0.00	0.04	0.04	742
TOTAL	**0.81**	**0.16**	**0.97**	**2,498**

[1] These features are depicted on Exhibit 1.

TABLE B-2
PERMANENT IMPACTS TO ISOLATED FEATURES
CENTRAL CORRIDOR – COMPLETE – ULTIMATE ALTERNATIVE
(in acres)

Feature Name[1]	Wetland Area	Non-Wetland Waters	Total Area	Total Length (linear feet)
C-WETLAND 1	0.40	0.00	0.40	NA
FE/C/7-2	0.00	0.02	0.02	64
C-2	0.13	0.11	0.24	1,013
C-3	0.28	0.01	0.29	743
C-4	0.00	0.04	0.04	767
TOTAL	**0.81**	**0.18**	**0.99**	**2,587**

[1] These features are depicted on Exhibit 1.

TABLE B-3
PERMANENT IMPACTS TO ISOLATED FEATURES
CENTRAL CORRIDOR – AVENIDA LA PATA VARIATION – INITIAL ALTERNATIVE
(in acres)

Feature Name[1]	Wetland Area	Non-Wetland Waters	Total Area	Total Length (linear feet)
C-WETLAND 1	0.40	0.00	0.40	NA
C-2	0.13	0.11	0.24	1,013
C-3	0.28	0.01	0.29	743
C-4	0.00	0.04	0.04	742
TOTAL	**0.81**	**0.16**	**0.97**	**2,498**

[1] These features are depicted on Exhibit 1.

TABLE B-4
PERMANENT IMPACTS TO ISOLATED FEATURES
CENTRAL CORRIDOR - AVENIDA LA PATA VARIATION – ULTIMATE ALTERNATIVE
(in acres)

Feature Name[1]	Wetland Area	Non-Wetland Waters	Total Area	Total Length (linear feet)
C-WETLAND 1	0.40	0.00	0.40	NA
FE/C/7-2	0.00	0.02	0.02	64
C-2	0.13	0.11	0.24	1,013
C-3	0.28	0.01	0.29	743
C-4	0.00	0.04	0.04	767
TOTAL	**0.81**	**0.18**	**0.99**	**2,587**

[1] These features are depicted on Exhibit 1.

TABLE B-5
PERMANENT IMPACTS TO ISOLATED FEATURES
ALIGNMENT 7 CORRIDOR – AVENIDA LA PATA VARIATION – INITIAL ALTERNATIVE
(in acres)

Feature Name[1]	Wetland Area	Non-Wetland Waters	Total Area	Total Length (linear feet)
FE/7-1	0.00	0.09	0.09	1,108
FE/7-2	0.29	0.06	0.35	2,265
FE/C/7-2	0.00	0.01	0.01	404
FE/C/7-4	0.00	0.001	0.001	40
FE-1	0.00	0.004	0.004	78
7-3	0.00	0.01	0.01	283
7-9	0.00	0.13	0.13	1,576
7-10	0.00	0.03	0.03	452
TOTAL	**0.29**	**0.34**	**0.63**	**6,206**

[1] These features are depicted on Exhibit 1.

TABLE B-6
PERMANENT IMPACTS TO ISOLATED FEATURES
ALIGNMENT 7 CORRIDOR – AVENIDA LA PATA VARIATION – ULTIMATE ALTERNATIVE
(in acres)

Feature Name[1]	Wetland Area	Non - Wetland Waters	Total Area	Total Length (linear feet)
FE/C/7-2	0.00	0.02	0.02	658
FE/7-1	0.00	0.10	0.10	1,138
FE/7-2	0.32	0.06	0.38	2,416
FE/C/7-4	0.00	0.002	0.002	77
FE-1	0.00	0.004	0.004	78
7-3	0.00	0.01	0.01	283
7-9	0.00	0.13	0.13	1,576
7-10	0.00	0.04	0.04	495
TOTAL	**0.32**	**.37**	**0.69**	**6,721**

[1] These features are depicted on Exhibit 1.

TABLE B-7
PERMANENT IMPACTS TO ISOLATED FEATURES
ALIGNMENT 7 CORRIDOR – FAR EAST CROSSOVER – MODIFIED – INITIAL ALTERNATIVE
(in acres)

Feature Name[1]	Wetland Area	Non- Wetland Waters	Total Area	Total Length (linear feet)
FE/C/7-WETLAND 2	0.07	0.00	0.07	NA
FE/7-1	0.00	0.01	0.01	140
FE/7-2	0.06	0.02	0.08	895
FE/7-3	0.54	0.07	0.61	912
7-2	0.00	0.04	0.04	1,137
7-3	0.00	0.02	0.02	484
7-10	0.00	0.03	0.03	240
7-11	0.00	0.02	0.02	412
7-13	0.00	0.05	0.05	885
FE/7-4	0.82	0.01	0.83	708
TOTAL	**1.49**	**0.27**	**1.76**	**5,813**

[1] These features are depicted on Exhibit 1.

TABLE B-8
PERMANENT IMPACTS TO ISOLATED FEATURES
ALIGNMENT 7 CORRIDOR – FAR EAST CROSSOVER – MODIFIED – ULTIMATE ALTERNATIVE
(in acres)

Feature Name[1]	Wetland Area	Non-Wetland Waters	Total Area	Total Length (linear feet)
FE/C/7-WETLAND 2	0.10	0.00	0.10	NA
FE/7-1	0.00	0.01	0.01	140
FE/7-2	0.06	0.03	0.09	896
FE/7-3	0.54	0.07	0.61	912
7-2	0.00	0.04	0.04	1,137
7-3	0.00	0.02	0.02	555
7-10	0.00	0.03	0.03	275
7-11	0.00	0.02	0.02	412
7-11	0.00	0.05	0.05	911
FE/7-4	0.81	0.01	0.82	697
TOTAL	**1.51**	**0.28**	**1.79**	**5,935**

[1] These features are depicted on Exhibit 1.

TABLE B-9
PERMANENT IMPACTS TO ISOLATED FEATURES
FAR EAST CORRIDOR – WEST – INITIAL ALTERNATIVE
(in acres)

Feature Name[1]	Wetland Area	Non-Wetland Waters	Total Area	Total Length (linear feet)
FE/C/7-WETLAND 2	0.07	0.00	0.07	NA
FE/7-1	0.00	0.06	0.06	812
FE/7-2	0.29	0.01	0.30	1,043
FE-1	0.00	0.03	0.03	351
FE-2A	0.00	0.02	0.02	480
FE-6	0.00	0.04	0.04	899
FE/7-4	0.00	0.05	0.05	1,124
TOTAL	**0.36**	**0.21**	**0.57**	**4,709**

[1] These features are depicted on Exhibit 1.

TABLE B-10
PERMANENT IMPACTS TO ISOLATED FEATURES
FAR EAST CORRIDOR – WEST – ULTIMATE ALTERNATIVE
(in acres)

Feature Name[1]	Wetland Area	Non- Wetland Waters	Total Area	Total Length (linear feet)
FE/C/7-WETLAND 2	0.11	0.00	0.11	NA
FE/7-1	0.00	0.07	0.07	837
FE/7-2	0.29	0.01	0.30	1,043
FE-1	0.00	0.03	0.03	351
FE-2A	0.00	0.02	0.02	480
FE-6	0.00	0.05	0.05	912
FE/7-4	0.00	0.05	0.05	1,124
TOTAL	**0.40**	**0.23**	**0.63**	**4,747**

[1] These features are depicted on Exhibit 1.

TABLE B-11
PERMANENT IMPACTS TO ISOLATED FEATURES
FAR EAST CORRIDOR – MODIFIED – INITIAL ALTERNATIVE
(in acres)

Feature Name[1]	Wetland Area	Non-Wetland Waters	Total Area	Total Length (linear feet)
FE/C/7-WETLAND 2	0.07	0.00	0.07	NA
FE/7-1	0.00	0.06	0.06	812
FE/7-2	0.29	0.01	0.30	1,043
FE-1	0.00	0.03	0.03	351
FE-2A	0.00	0.02	0.02	480
FE-6	0.00	0.04	0.04	899
FEM-3	0.00	0.12	0.12	465
FEM-POND 1	0.02	0.00	0.02	NA
TOTAL	**0.38**	**0.28**	**0.66**	**4,050**

[1] These features are depicted on Exhibit 1.

TABLE B-12
PERMANENT IMPACTS TO ISOLATED FEATURES
FAR EAST CORRIDOR – MODIFIED – UTLIMATE ALTERNATIVE
(in acres)

Feature Name[1]	Wetland Area	Non- Wetland Waters	Total Area	Total Length (linear feet)
FE/C/7-WETLAND 2	0.11	0.00	0.11	NA
FE/7-1	0.00	0.07	0.07	837
FE/7-2	0.29	0.01	0.30	1,043
FE-1	0.00	0.03	0.03	351
FE-6	0.00	0.04	0.04	899
FE-2A	0.00	0.02	0.02	480
FEM-3	0.00	0.15	0.15	562
FEM-POND 1	0.02	0.00	0.02	NA
TOTAL	**0.42**	**0.32**	**0.74**	**4,172**

[1] These features are depicted on Exhibit 1.

II. SUMMARY OF TOTAL AREA (BASED ON OHWM) ASSOCIATED WITH ISOLATED FEATURES WITHIN THE STUDY AREAS

Tables B-13 through B-18 summarize the total acreage of isolated feature impacts located within the total study areas.

TABLE B-13
ISOLATED FEATURES – TOTAL STUDY AREA
CENTRAL CORRIDOR – COMPLETE STUDY AREA
(in acres)

Feature Name[1]	Total Area	Wetland Area	Non- Wetland Waters
FE/C/7-2	0.02	0.00	0.02
FE/C/7-3	0.01	0.00	0.01
FE/C/7-4	0.02	0.00	0.02
FE/C/7-WETLAND 2	0.11	0.11	0.00
C-1	0.02	0.00	0.02
C-WETLAND 1	0.40	0.40	0.00
C-2	0.38	0.13	0.25
C-3	0.70	0.68	0.02
C-4	0.04	0.00	0.04
C-POND 1	0.12	0.00	0.12
TOTAL	**1.82**	**1.32**	**0.50**

[1] These features are depicted on Exhibit 1.

TABLE B-14
ISOLATED FEATURES – TOTAL STUDY AREA
CENTRAL CORRIDOR-AVENIDA LA PATA VARIATION STUDY AREA
(in acres)

Feature Name[1]	Total Area	Wetland Area	Non-Wetland Waters
FE/C/7-2	0.02	0.00	0.02
FE/C/7-3	0.01	0.00	0.01
FE/C/7-4	0.02	0.00	0.02
FE/C/7-WETLAND 2	0.11	0.11	0.00
C-1	0.02	0.00	0.02
C-WETLAND 1	0.40	0.40	0.00
C-2	0.38	0.13	0.25
C-3	0.70	0.68	0.02
C-4	0.04	0.00	0.04
C-POND 1	0.12	0.00	0.12
TOTAL	**1.82**	**1.32**	**0.50**

[1] These features are depicted on Exhibit 1.

TABLE B-15
ISOLATED FEATURES – TOTAL STUDY AREA
ALIGNMENT 7 CORRIDOR – AVENIDA LA PATA VARIATION STUDY AREA
(in acres)

Feature Name[1]	Total Area	Wetland Area	Non-Wetland Waters
FE/C/7 WETLAND 2	0.11	0.11	0.00
FE/C/7-2	0.02	0.00	0.02
FE/C/7-3	0.01	0.00	0.02
FE/C/7-4	0.02	0.00	0.02
FE/7-1	0.20	0.00	0.20
FE/7-2	0.50	0.36	0.14
FE-1	0.16	0.00	0.16
7-9	0.09	0.00	0.09
7-10	0.19	0.00	0.19
TOTAL	**1.30**	**0.47**	**0.84**

[1] These features are depicted on Exhibit 1.

TABLE B-16
ISOLATED FEATURES – TOTAL STUDY AREA
ALIGNMENT 7 CORRIDOR – FAR EAST CROSSOVER – MODIFIED STUDY AREA
(in acres)

Feature Name[1]	Total Area	Wetland Area	Non-Wetland Waters
FE/C/7 WETLAND 2	0.11	0.11	0.00
FE/C/7-2	0.02	0.00	0.02
FE/C/7-3	0.01	0.00	0.01
FE/C/7-4	0.02	0.00	0.02
FE/7-1	0.20	0.00	0.20
FE/7-2	0.50	0.36	0.14
7-9	0.09	0.00	0.09
7-10	0.19	0.00	0.19
7-11	0.02	0.00	0.02
FE/7-4	1.32	1.10	0.22
FE/7-5	0.02	0.00	0.02
TOTAL	**2.5**	**1.57**	**0.93**

[1] These features are depicted on Exhibit 1.

TABLE B-17
ISOLATED FEATURES – TOTAL STUDY AREA
FAR EAST CORRIDOR – MODIFIED STUDY AREA
(in acres)

Feature Name[1]	Total Area	Wetland Area	Non-Wetland Waters
FE/C/7 WETLAND 2	0.11	0.11	0.00
FEC/7-2	0.02	0.00	0.02
FE/C/7-3	0.01	0.00	0.01
FE/C/7-4	0.02	0.00	0.02
FE/7-1	0.20	0.00	0.20
FE/7-2	0.50	0.36	0.14
FE-1	0.16	0.00	0.16
FE – WETLAND 1	0.16	0.16	0.00
FE-2	1.40	1.32	0.08
FE-2A	0.08	0.00	0.08
FE-4	2.65	2.65	0.00
FE – WETLAND 2	0.23	0.23	0.00
FE-6	0.11	0.11	0.00
FEW -1	0.12	0.00	0.12
FEM-2	0.01	0.00	0.01
FEM-3	0.43	0.00	0.43
FEM-POND 1	3.61	3.61	0.00
FEM-VM 7	0.19	0.19	0.00
FEM-VM 8	0.48	0.48	0.00
TOTAL	**10.49**	**9.22**	**1.270**

[1] These features are depicted on Exhibit 1.

TABLE B-18
ISOLATED FEATURES – TOTAL STUDY AREA
FAR EAST CORRIDOR – WEST STUDY AREA
(in acres)

Feature Name[1]	Total Area	Wetland Area	Non-Wetland Waters
FE/C/7 WETLAND 2	0.11	0.11	0.00
FEC/7-2	0.02	0.00	0.02
FE/C/7-3	0.01	0.00	0.01
FE/C/7-4	0.02	0.00	0.02
FE/7-1	0.20	0.00	0.20
FE/7-2	0.50	0.36	0.14
FE-1	0.16	0.00	0.16
FE – WETLAND 1	0.16	0.16	0.00
FE-2	1.40	1.32	0.08
FE-2A	0.08	0.00	0.08
FE-4	2.65	2.65	0.00
FE – WETLAND 2	0.23	0.23	0.00
FE-6	0.11	0.11	0.00
FEW –1	0.12	0.00	0.12
FE/7-4	1.32	1.10	0.22
FE/7-5	0.02	0.00	0.02
TOTAL	**7.11**	**6.04**	**1.07**

[1] These features are depicted on Exhibit 1.

Not for Public Distribution

WETLANDS DELINEATION TECHNICAL ASSESSMENT

FOR IMPACTS ASSOCIATED WITH THE SOUTH ORANGE COUNTY TRANSPORTATION INFRASTRUCTURE IMPROVEMENT PROJECT

CENTRAL CORRIDOR - COMPLETE
CENTRAL CORRIDOR – AVENIDA LA PATA VARIATION
ALIGNMENT 7 CORRIDOR – AVENIDA LA PATA VARIATION
ALIGNMENT 7 CORRIDOR - FAR EAST MODIFIED
FAR EAST CORRIDOR – WEST and
FAR EAST CORRIDOR - MODIFIED

August 9, 2004

Prepared for:

Foothill/Eastern Transportation Corridor Agency
Contacts: Macie Cleary-Milan
125 Pacifica, Suite 100
Irvine California 92618-3304
Telephone: (949) 754-3481

Prepared by:

PA1 #3

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: PA1	Date: 4/15/03
Applicant/Owner: PMV	County:
Investigator: TL CJC	State:

Do Normal Circumstances exist on the site?	Yes	No	Community ID:
Is the site significantly disturbed (Atypical Situation)?	Yes	No	Transect ID:
Is the area a potential Problem Area? (If needed, explain on reverse.)	Yes	No	Plot ID: ~~1~~ 2

paddock side swale

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. mulefat	S	FACW	9.		
2. fennel	H	UPL	10.		
3. acacia redolens	S	UPL	11.		
4. picris echoides	H	FAC	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 50%

Remarks: does not meet

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: ___ (in.)

Depth to Free Water in Pit: ___ (in.)

Depth to Saturated Soil: ___ (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ✓ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: debris, no signs of saturation

146

SOILS

Map Unit Name (Series and Phase): Corralitos loamy sand

Drainage Class: somewhat excessively drained

Taxonomy (Subgroup): Typic Xerorthents

Field Observations Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-10		2.5Y 4/3			
10+		2.5Y 4/3	5Y 5/6		loam
0-4					sand

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: does not meet

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes No (Circle)	
Wetland Hydrology Present?	Yes No	
Hydric Soils Present?	Yes No	
Is this Sampling Point Within a Wetland?		(Circle) Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Ortega Gateway	Date: 3/5/03
Applicant/Owner: RMW	County: OR
Investigator: TC/TB	State: CA
Do Normal Circumstances exist on the site? Yes (Yes) No	Community ID:
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID:
Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Plot ID: 19

equestrian pond

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Mulefat	shrub	FACW	9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: meets

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: ___ (in.)

Depth to Free Water in Pit: ___ (in.)

Depth to Saturated Soil: ___ (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- X Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: depression, however, even though within 4 days of storm event — no signs of saturation
marginal

1-16

SOILS

Map Unit Name (Series and Phase): Corraltes Sandy loam

Drainage Class: somewhat excessively drained

Taxonomy (Subgroup): Typic Xerorthents

Field Observations Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-16		10YR3/2	None		loamy

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: does not meet

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes No (Circle)	
Wetland Hydrology Present?	Yes No	
Hydric Soils Present?	Yes No	
Is this Sampling Point Within a Wetland?	Yes No (Circle)	

Remarks: only as a topographic feature that could pond water however - no obstruction the bottom is sloping

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Chunuta Planning area	Date: 11/25/2002
Applicant/Owner: RMV	County: CA
Investigator: JC/TL	State: OR
Do Normal Circumstances exist on the site? Yes ~~No~~	Community ID: 2-1
Is the site significantly disturbed (Atypical Situation)? Yes ~~No~~	Transect ID:
Is the area a potential Problem Area? Yes ~~No~~ (If needed, explain on reverse.)	Plot ID:

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. mulefat	shrub	FACW	9.		
2. arroyo willow	tree	FACW	10.		
3. bromus sp. same as mad	herb	UPL	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 66%

Remarks: meets

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: ___ (in.)

Depth to Free Water in Pit: ___ (in.)

Depth to Saturated Soil: ___ (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- X Sediment Deposits
- X Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: terrace adj to creek, ~15 feet wide (wide) indudg terrace ~ 4ft wide adj perennial meets

Rest vegetated wet

135

SOILS

Map Unit Name (Series and Phase): Capistrano Sandy loam 2 to 9% slopes

Drainage Class: Well drained

Field Observations Confirm Mapped Type? (Yes) No

Taxonomy (Subgroup): Entic Haploxerolls

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-10		2.5Y 5/3	10YR 5/6		Sand
10-12		Gley 1 5GY 4/0			Sand

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: meets

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes) No	(Circle)
Wetland Hydrology Present?	(Yes) No	
Hydric Soils Present?	(Yes) No	

(Circle)

Is this Sampling Point Within a Wetland? (Yes) No

Remarks: meets

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Chiquita Applicant/Owner: RMV Investigator: ICAL	Date: 11/25/2002 County: CA State: OR
Do Normal Circumstances exist on the site? Yes No Is the site significantly disturbed (Atypical Situation)? Yes No Is the area a potential Problem Area? Yes No (If needed, explain on reverse.)	Community ID: Transect ID: 2-2 Plot ID:

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. watercress	herb	OBL	9.		
2. eleocharis macrostachya	herb	OBL	10.		
3. Jerbamansa	herb	OBL	11.		
4. Wildcatchy	herb	FAW	12.		
5. Cyperus niger	herb	FAW+	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: none

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
X No Recorded Data Available

Field Observations:

Depth of Surface Water: — (in.)

Depth to Free Water in Pit: — (in.)

Depth to Saturated Soil: 4" (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
X Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
X Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: ~12ft wide - perennial stream margin (~5-7ft wet

135

SOILS

Map Unit Name (Series and Phase): Capistrano Sandy Loam 2-9% slope

Drainage Class: welldrained

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): Entic Haploxerolls

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-8		10YR 2/5	none		Sandy loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: meets

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No (Circle)
Wetland Hydrology Present?	Yes	No
Hydric Soils Present?	Yes	No

(Circle)

Is this Sampling Point Within a Wetland? Yes No

Remarks: meets

Approved by HQUSACE 3/92

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DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CHIQUITA Applicant/Owner: KMV Investigator: TCTL	Date: 11/25/02 County: CA State: OR
Do Normal Circumstances exist on the site? **Yes** No Is the site significantly disturbed (Atypical Situation)? Yes **No** Is the area a potential Problem Area? Yes **No** (If needed, explain on reverse.)	Community ID: Transect ID: 2-3 Plot ID:

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. alnus (black)	tree	OBL	9.		
2. bromus sp	herb	UPL	10.		
3. mulefat	shrub	FACW	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 66%

Remarks: meets

HYDROLOGY

___ Recorded Data (Describe in Remarks): ___ Stream, Lake, or Tide Gauge ___ Aerial Photographs ___ Other X No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: ___ Inundated ___ Saturated in Upper 12 Inches ___ Water Marks ___ Drift Lines ___ Sediment Deposits ___ Drainage Patterns in Wetlands Secondary Indicators (2 or more required): ___ Oxidized Root Channels in Upper 12 Inches ___ Water-Stained Leaves ___ Local Soil Survey Data ___ FAC-Neutral Test ___ Other (Explain in Remarks)
Field Observations: Depth of Surface Water: — (in.) Depth to Free Water in Pit: — (in.) Depth to Saturated Soil: — (in.)	

Remarks: Hydrology - 1ft up creek from last data point
does not meet

135

SOILS

Map Unit Name (Series and Phase): Constman Sandy Loam

Drainage Class: Well drained

Field Observations Confirm Mapped Type? (Yes) No

Taxonomy (Subgroup): Entic Haplaquolls

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-10		2.5Y 5/3	10YR 5/6	few	sandy
10-12		2.5Y 5/3	7.5YR 4/8	few	loamy sand

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: does not meet

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes) No	(Circle)
Wetland Hydrology Present?	Yes (No)	
Hydric Soils Present?	Yes (No)	

(Circle)

Is this Sampling Point Within a Wetland? Yes (No)

Remarks:

Approved by HQUSACE 3/92

#4

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Chinuta	Date: 11/25/2002
Applicant/Owner: FRMV	County: OR
Investigator: TCTL	State: CA
Do Normal Circumstances exist on the site? Yes (Yes) No	Community ID:
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID: 2-P
Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Plot ID:

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. arroyo willow	tree	FACW	9.		
2. Watercress	H	OBL	10.		
3. spikerush	H	OBL	11.		
4. celery	H	FACW	12.		
5. cattails	H	OBL	13.		
6. bulrush	H	OBL	14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: Yellow marks are invasive and not dom meets

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: 6 (in.)

Depth to Free Water in Pit: 6 (in.)

Depth to Saturated Soil: 6 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ✓ Drift Lines
- ✓ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: meets

SOILS

Map Unit Name (Series and Phase): Ruewusl

Drainage Class: WW

Field Observations Confirm Mapped Type? Yes (No)

Taxonomy (Subgroup):

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-6		2.5Y 5/2	[illegible]		Sandy loam
10-12		5Y 5/2	[illegible]		Sandy loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: meets / marginal on boundary

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes) No	(Circle)
Wetland Hydrology Present?	(Yes) No	
Hydric Soils Present?	(Yes) No	

Is this Sampling Point Within a Wetland? (Yes) No (Circle)

Remarks: meets

Approved by HQUSACE 3/92

#5

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Chiquita	Date: 11/25/02
Applicant/Owner: KMW	County: CA
Investigator: IC/TL	State: OR
Do Normal Circumstances exist on the site? Yes (No)	Community ID:
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID: 2-5
Is the area a potential Problem Area? Yes (No)	Plot ID:
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. rumex crispus	herb	FACW	9.		
2. Saltgrass	herb	FACW	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100 %

Remarks: meets

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: — (in.)

Depth to Free Water in Pit: — (in.)

Depth to Saturated Soil: — (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- X Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- X FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: lowlying terrace adj to stream,

SOILS

Map Unit Name (Series and Phase): Riverwash

Drainage Class: Well

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup):

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-7		5Y 2.5/1			clay loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No (Circle)
Wetland Hydrology Present? Yes No
Hydric Soils Present? Yes No

(Circle)
Is this Sampling Point Within a Wetland? Yes No

Remarks: marginal

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CHIQUITA	Date: 11/25/02
Applicant/Owner: RMV	County: OR
Investigator: TCTL	State: CA
Do Normal Circumstances exist on the site? Yes (No)	Community ID:
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID: 6
Is the area a potential Problem Area? Yes (No)	Plot ID:
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. beet Beta vulgaris	herb	FACU	9.		
2. ambrosia psilostachya	H	FAC	10.		
3. bindweed polygonum convolvulus	H	NI	11.		
4. bromus sp.?	H	UPL	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 25%

Remarks: dver not meet

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
X No Recorded Data Available

Field Observations:

Depth of Surface Water: _____ (in.)

Depth to Free Water in Pit: _____ (in.)

Depth to Saturated Soil: _____ (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
X Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: adj to creek/lowlying groundwater fed perenn N Stream

19

SOILS

Map Unit Name (Series and Phase): Riverwash

Drainage Class: Wet

Field Observations Confirm Mapped Type? Yes (No)

Taxonomy (Subgroup):

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-7			5Y 2.5/1		clay loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? (Yes) No

(Circle)
Is this Sampling Point Within a Wetland? Yes (No)

Remarks:

Approved by HQUSACE 3/92

#7

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CHIQUITA	Date: 11/25/02
Applicant/Owner: RMV	County: OR
Investigator: TC/TL	State: CA
Do Normal Circumstances exist on the site? Yes No	Community ID:
Is the site significantly disturbed (Atypical Situation)? Yes No	Transect ID: 2 7
Is the area a potential Problem Area? Yes No (If needed, explain on reverse.)	Plot ID:

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. bermuda grass	Herb	Fac	9.		
2. ragweed	Herb	Fac	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: meets

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: ___ (in.)

Depth to Free Water in Pit: ___ (in.)

Depth to Saturated Soil: ___ (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- X Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: low lying terrace adj to guad water derived perennial stream

SOILS

Map Unit Name (Series and Phase): Riverwash

Drainage Class: well

Field Observations Confirm Mapped Type? Yes (No)

Taxonomy (Subgroup):

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-7			5Y 2.5/1		clayloam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: little inclusion

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No (Circle)
Wetland Hydrology Present? Yes No
Hydric Soils Present? Yes No

(Circle)
Is this Sampling Point Within a Wetland? Yes No

Remarks: moist

Approved by HQUSACE 3/92

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DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CHIAWITA Applicant/Owner: RMV Investigator: TC/TL	Date: 11/25/02 County: OR State: CA
Do Normal Circumstances exist on the site? Yes ~~No~~ Is the site significantly disturbed (Atypical Situation)? Yes ~~No~~ Is the area a potential Problem Area? Yes ~~No~~ (If needed, explain on reverse.)	Community ID: Transect ID: 2-19 Plot ID:

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Saltgrass	herb	FACW	9.		
2. Verbena marina	↓	OBL	10.		
3. ryegrass	↓	FAC	11.		
4. brome		UPL	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 66%

Remarks: mets

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: ___ (in.)

Depth to Free Water in Pit: ___ (in.)

Depth to Saturated Soil: ___ (in.)

NONE

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

NONE

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: Now- up on a bank even though adjacent to bank

191

SOILS

Map Unit Name (Series and Phase): Riverwash

Drainage Class: Well

Field Observations Confirm Mapped Type? Yes (No)

Taxonomy (Subgroup):

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12		10YR 3/2	none		loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: does not meet

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)

Wetland Hydrology Present? Yes (No)

Hydric Soils Present? Yes (No)

(Circle)

Is this Sampling Point Within a Wetland? Yes (No)

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CHIQUITA Applicant/Owner: KMV Investigator: TC/MR	Date: 11/26/02 County: OR State: CA
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: 29 Plot ID:

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. mulefat	shrub	FACW	9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: mud

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: — (in.)

Depth to Free Water in Pit: — (in.)

Depth to Saturated Soil: — (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- X Sediment Deposits sand
- X Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: damp, lowlying area connected to adj groundwater-driven perennial stream

191

SOILS

Map Unit Name (Series and Phase): Riverwash

Drainage Class: very well

Field Observations Confirm Mapped Type? Yes (No)

Taxonomy (Subgroup):

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-10					Sand
10-12		10YR4/2	faint white/oxidized Rhizosphere		sandy loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: none

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? (Yes) No

(Circle)
Is this Sampling Point Within a Wetland? (Yes) No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Chiquita	Date: 11/26/2002
Applicant/Owner: RMV	County: DR
Investigator: TC/MK	State: CO
Do Normal Circumstances exist on the site? Yes (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: 2 Plot ID: 10

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. mulefat	shrub	FACW	9.		
2. ambrosia	herb	OBL	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: mud s

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
X No Recorded Data Available

Field Observations:

Depth of Surface Water: ___ (in.)

Depth to Free Water in Pit: ___ (in.)

Depth to Saturated Soil: ___ (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits no rounded sediment deposits
___ Drainage Patterns in Wetlands topographical low feature w/no other
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

several feet above water level in adj creek.

Remarks: no primary indicators

191

SOILS

Map Unit Name (Series and Phase): Riverwash

Drainage Class: _____

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): _____

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12		7.5YR 4/1			loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: Soils similar to dark well upland areas

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No (Circle)
Wetland Hydrology Present? Yes No
Hydric Soils Present? Yes No

(Circle)
Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CHIQUITA	Date: 11/26/2002
Applicant/Owner: RMV	County: OR
Investigator: TC/MR	State: CA
Do Normal Circumstances exist on the site? (Yes) No	Community ID:
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID:
Is the area a potential Problem Area? Yes (No)	Plot ID: (1)
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. distichlis		FACW	9.		
2. juncus americanus		FACW	10.		
3. tamarix parviflora		FAC	11.		
4. lolium multiflorum		UPL	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 75%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: _____ (in.)

Depth to Free Water in Pit: _____ (in.)

Depth to Saturated Soil: _____ (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- X Drainage Patterns in Wetlands — lowlying terrace adj to stream

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- X FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: adj to stream but elevated – no oxidized rhizospheres

191

SOILS

Map Unit Name (Series and Phase): Riverwash

Drainage Class: Well

Field Observations Confirm Mapped Type? Yes (No)

Taxonomy (Subgroup):

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12		7.5 YR 2.5/1			loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: meet

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes) No	(Circle)
Wetland Hydrology Present?	(Yes) No	
Hydric Soils Present?	(Yes) No	

(Circle)

Is this Sampling Point Within a Wetland? (Yes) No

Remarks: marginal hydrology

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CHIQUITA Applicant/Owner: RMV Investigator: TC/TM	Date: 12/6/02 County: OR State: CA
Do Normal Circumstances exist on the site? Yes (circled) No Is the site significantly disturbed (Atypical Situation)? Yes No (circled) Is the area a potential Problem Area? Yes No (circled) (If needed, explain on reverse.)	Community ID: Transect ID: 42 Plot ID:

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. mulefat	Shrub	FACW	9.		
2. distichlis spicata	herb	FACW	10.		
3. hornes	herb	upl	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 66% %

Remarks: met

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: — (in.)

Depth to Free Water in Pit: — (in.)

Depth to Saturated Soil: — (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- X Drainage Patterns in Wetlands windrowing

Secondary Indicators (2 or more required):
- X Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: met

28

SOILS

Map Unit Name (Series and Phase): Bosanko clay 30-50% slopes

Drainage Class: well drained

Field Observations Confirm Mapped Type? (Yes) No

Taxonomy (Subgroup): Chromic Pellixerults

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
7-12		10R 2.5/1			clay loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: mud

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes) No	(Circle)	(Circle)
Wetland Hydrology Present?	(Yes) No		
Hydric Soils Present?	(Yes) No		Is this Sampling Point Within a Wetland? (Yes) No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CHIQUITA Applicant/Owner: RMV Investigator: KC/JM	Date: 12/6/02 County: OR State: CA
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: 2 (3) Plot ID:

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. mulefat	shrub	FACW	9.		
2. grasses	herb	upl	10.		
3. sandwillow	tree	FACW	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 66% / 100% impersistent layer

Remarks: meets

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: — (in.)

Depth to Free Water in Pit: — (in.)

Depth to Saturated Soil: — (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- X Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- X Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: meets

SOILS

Map Unit Name (Series and Phase): Cienega Sandy loam, 15 to 30% slopes

Drainage Class: somewhat excessively drained

Field Observations Confirm Mapped Type? Yes (No)

Taxonomy (Subgroup): Typic Xerorthents

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12		10YR 3/2	w/mottles		silty loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: meets

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No	(Circle)
Wetland Hydrology Present?	Yes	No	
Hydric Soils Present?	Yes	No	

Is this Sampling Point Within a Wetland? (Circle) Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Chiquita Applicant/Owner: BMU Investigator: Tyson	Date: 12/102 County: OR State: CA
Do Normal Circumstances exist on the site? Yes (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: 2-14 Plot ID:

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. distichlis spicata	herb	FACW	9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks: meets

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: ___ (in.)

Depth to Free Water in Pit: ___ (in.)

Depth to Saturated Soil: ___ (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- X Drainage Patterns in Wetlands Minimal

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: on shelf adj to drainage

128

SOILS

Map Unit Name (Series and Phase): Bosanko Clay 30-50% Slopes

Drainage Class: Well drained

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): Chromic Palexerults

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12"		10YR4/3	nomottle		Clay loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: does not meet

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No (Circle)
Wetland Hydrology Present? Yes No
Hydric Soils Present? Yes No

(Circle)
Is this Sampling Point Within a Wetland? Yes No

Remarks: does not meet

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Chowita Applicant/Owner: RMV Investigator: TC/AM	Date: 3/8/03 County: CL State: OR
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: 75

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. grayowillow	T	FACW	9.		
2. Juncus xiphioides	H	OBL	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: meet

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: ___ (in.)

Depth to Free Water in Pit: ___ (in.)

Depth to Saturated Soil: to surface (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- X Inundated
- X Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: just below head cut, appears to cut past water table

135

SOILS

Map Unit Name (Series and Phase): Canisteo Sandy Loam 2-9% slope

Drainage Class: Well drained

Field Observations Confirm Mapped Type? (Yes) No

Taxonomy (Subgroup): Entic Haplaquolls

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-4		5BG 2.5/N			Sandy loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: meets

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes) No	(Circle)
Wetland Hydrology Present?	(Yes) No	
Hydric Soils Present?	(Yes) No	

(Circle)

Is this Sampling Point Within a Wetland? (Yes) No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Chiquita Applicant/Owner: FRMV Investigator: IC/AM	Date: 3/8/03 County: OR State: CA
Do Normal Circumstances exist on the site? Yes (No) Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: 16

upstream of headcut

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. arroyo willow	T	FACW	9.		
2. Bromus diandrus	H	UPL	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 50%

Remarks: does not meet

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: — (in.)

Depth to Free Water in Pit: — (in.)

Depth to Saturated Soil: — (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required): none
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: above headcut swale, no evidence of sat even after rain event (w/in one week)

135

SOILS

Map Unit Name (Series and Phase): Capistrano Sandy Loam 2 to 9% slope

Drainage Class: well drained

Field Observations Confirm Mapped Type? (Yes) No

Taxonomy (Subgroup): Entic Haploxerolls

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12		2.5Y 2.5/1	none	—	loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: low chroma, but less than 1 week after rain event — no saturat. in upper 16"

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes) No	(Circle)
Wetland Hydrology Present?	Yes (No)	
Hydric Soils Present?	(Yes) No	

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Chiquita Applicant/Owner: RMW Investigator: JC/KM	Date: 3/8/03 County: OK State: CA
Do Normal Circumstances exist on the site? Yes (No) Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: (17) Plot ID:

W/in Incision on upper bank

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Carex praegracilis		FACW	9.		
2. Mulgat		FACW	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: meets

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
X No Recorded Data Available

Field Observations:

Depth of Surface Water: — (in.)

Depth to Free Water in Pit: — (in.)

Depth to Saturated Soil: — (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
X Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
X FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: W/in drainage bottom

134

SOILS

Map Unit Name (Series and Phase): Calleguas clay loam 50-75% slopes eroded

Drainage Class: well drained

Field Observations Confirm Mapped Type? Yes (No)

Taxonomy (Subgroup): Typic Haploxerorthents

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12		2.5Y 3/2	none		loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: does not meet

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No	(Circle)
Wetland Hydrology Present?	Yes	No	
Hydric Soils Present?	Yes	No	

(Circle)

Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Chiquita Applicant/Owner: & RMV Investigator: Tc/DM	Date: 10/6/03 County: OK State: OK
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: ____ Transect ID: ____ Plot ID: 2-18

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. distichlis spicata	herb	FACW	9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: meets

HYDROLOGY

__ Recorded Data (Describe in Remarks):
- __ Stream, Lake, or Tide Gauge
- __ Aerial Photographs
- __ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: ____ (in.)

Depth to Free Water in Pit: ____ (in.)

Depth to Saturated Soil: ____ (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- __ Inundated
- __ Saturated in Upper 12 Inches
- __ Water Marks
- __ Drift Lines
- __ Sediment Deposits
- __ Drainage Patterns in Wetlands

None

Secondary Indicators (2 or more required):
- __ Oxidized Root Channels in Upper 12 Inches
- __ Water-Stained Leaves
- __ Local Soil Survey Data
- __ FAC-Neutral Test
- __ Other (Explain in Remarks)

Remarks: no indicators present (located within an erosional feature w/no recent signs of flow)

171

SOILS

Map Unit Name (Series and Phase): Riverwash

Drainage Class: Well

Field Observations Confirm Mapped Type? Yes (No)

Taxonomy (Subgroup):

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12		10YR3/2	No mottle		Sand

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: does not meet

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes)	No	(Circle)
Wetland Hydrology Present?	Yes	(No)	
Hydric Soils Present?	Yes	(No)	

(Circle)

Is this Sampling Point Within a Wetland? Yes (No)

Remarks: does not meet

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Chiquita Applicant/Owner: RMW Investigator: JC/DM	Date: 10/6/03 County: OR State: OR
Do Normal Circumstances exist on the site? Yes No Is the site significantly disturbed (Atypical Situation)? Yes No Is the area a potential Problem Area? Yes No (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: 2-19 (S)

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Iolium multiflorum	herb	NL	9.		
2. Lisperatia	herb	FACW	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 50%

Remarks: (Based on personal observation – Iolium multiflorum appears to persist equally in wet/dry environments) so we will treat it as fac. – meets

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
X No Recorded Data Available

Field Observations:

Depth of Surface Water: ___ (in.)

Depth to Free Water in Pit: ___ (in.)

Depth to Saturated Soil: ___ (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

None

none (only fac)

Remarks: does not meet

135

SOILS

Map Unit Name (Series and Phase): Capistrano Sandy loam

Drainage Class: well drained

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): Entic Haploxeroll

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12		10YR 3/2	none		

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: pit north of mf (south of mulefat w/ anemopsis
Soils 10YR 3/1 w/ oxidized Rhizosphere)

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No (Circle)
Wetland Hydrology Present?	Yes	No
Hydric Soils Present?	Yes	No

(Circle)
Is this Sampling Point Within a Wetland? Yes No

Remarks: does not meet

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Chauta Applicant/Owner: RMW Investigator: TC/DM	Date: 10/7/03 County: OK State: CA
Do Normal Circumstances exist on the site? Yes (No) Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: 2-20

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. bro hordeaceus	herb	upl	9.		
2. lolium multiflorum		NI	10.		
3. displicata		facw	11.		
4. juncus tenuis		facwt	12.		
5. Hordeum depressum/		≥fac	13.		
6. intercedens			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 260%

Remarks: pit 6 on margin w/ upland veg (did not include grasses primarily bro hordeaceus
see note on 2-19 re lolium

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
X No Recorded Data Available

Field Observations:

Depth of Surface Water: ___ (in.)

Depth to Free Water in Pit: ___ (in.)

Depth to Saturated Soil: ___ (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
X FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: does not meet
saturation of drainage

135

SOILS

Map Unit Name (Series and Phase): Capistrano Sandy loam 2-9% slope

Drainage Class: well drained

Field Observations Confirm Mapped Type? (Yes) No

Taxonomy (Subgroup): Entic Haploxerolls

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
		10YR3/2	none		Sandy

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: does not meet

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes) No	(Circle)
Wetland Hydrology Present?	Yes (No)	
Hydric Soils Present?	Yes (No)	

(Circle)

Is this Sampling Point Within a Wetland? Yes (No)

Remarks: does not meet

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Chyuta	Date: 10/6/03
Applicant/Owner: RAV	County: OR
Investigator: TCADM	State: CA
Do Normal Circumstances exist on the site? Yes (No)	Community ID:
Is the site significantly disturbed (Atypical Situation)? ~~Yes~~ (No)	Transect ID:
Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Plot ID: 2-21

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. avena sp	herb	upl	9.		
2. brassica nigra	herb	upl	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 0%

Remarks: does not meet

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
X No Recorded Data Available

Field Observations:

Depth of Surface Water: — (in.)

Depth to Free Water in Pit: — (in.)

Depth to Saturated Soil: — (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
none
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: does not meet

135

SOILS

Map Unit Name (Series and Phase): Capistrano Sandy Loam 2to9% slope

Drainage Class: Well drained

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): Entic Haploxerolls

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12		10YR 3/2	none		Sandy loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: does not meet

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes (No) (Circle)	
Wetland Hydrology Present?	Yes (No)	
Hydric Soils Present?	Yes (No)	
Is this Sampling Point Within a Wetland?	Yes (No) (Circle)	

Remarks: does not meet

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Chauta Applicant/Owner: KMV Investigator: TC/DM	Date: 10/6/03 County: OK State: OK
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: 2-22

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. hordeum (introdens or depressum)		≥fac	9.		
2. lolum multiflorum		NL	10.		
3. dispicata		FACW	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). ≥66%

Remarks: meet, see sheet 2-14 Regardy lolum

HYDROLOGY

___ Recorded Data (Describe in Remarks): ___ Stream, Lake, or Tide Gauge ___ Aerial Photographs ___ Other X No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: ___ Inundated ___ Saturated in Upper 12 Inches ___ Water Marks ___ Drift Lines ___ Sediment Deposits ___ Drainage Patterns in Wetlands Secondary Indicators (2 or more required): ___ Oxidized Root Channels in Upper 12 Inches ___ Water-Stained Leaves ___ Local Soil Survey Data X FAC-Neutral Test ___ Other (Explain in Remarks)
Field Observations: Depth of Surface Water: — (in.) Depth to Free Water in Pit: — (in.) Depth to Saturated Soil: — (in.)	none very fluctuating deep

Remarks: doesnot have 2 secondary indicator

135

SOILS

Map Unit Name (Series and Phase): Capistrano Sandy Loam 2 to 9% Slope

Drainage Class: Well Drained

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): Entic Haploxeralfs

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
		10YR3/2	none		

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: does not meet

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes (Yes circled)	No (Circle)
Wetland Hydrology Present?	Yes	No (No circled)
Hydric Soils Present?	Yes	No (No circled)

(Circle)

Is this Sampling Point Within a Wetland? Yes No (No circled)

Remarks: does not meet

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Chiquita Applicant/Owner: RMV Investigator: IC/DM	Date: 10/7/03 County: OR State: CA
Do Normal Circumstances exist on the site? **Yes** No Is the site significantly disturbed (Atypical Situation)? Yes **No** Is the area a potential Problem Area? Yes **No** (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: Slope wetland ~~SP~~ 23

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. dispicata		FACW	9.		
2. j. mexicanus		FACW	10.		
3. S. pungens		OBL	11.		
4. anemopsis californica		OBL	12.		
5. Iolium multiflorum		NI	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). ≥ 80%

Remarks: see notes & Iolium on sheet 2-19

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
X No Recorded Data Available

Field Observations:

Depth of Surface Water: — (in.)

Depth to Free Water in Pit: — (in.)

Depth to Saturated Soil: — (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
none ___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
X Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
X FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: meets

135

SOILS

Map Unit Name (Series and Phase): Capistrano Sandy Loam 2 to 9% Slopes

Drainage Class: well drained

Field Observations Confirm Mapped Type? (Yes) No

Taxonomy (Subgroup): Entic Haploxerolls

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12		10YR 2/1	w/mottle		

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: meets

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No (Circle)
Wetland Hydrology Present?	Yes	No
Hydric Soils Present?	Yes	No

(Circle)

Is this Sampling Point Within a Wetland? Yes No

Remarks: meets

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Chaguita	Date: 10/6/03
Applicant/Owner: & RMW	County: OR
Investigator: DM/TC	State: CA
Do Normal Circumstances exist on the site? (Yes) No	Community ID:
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID:
Is the area a potential Problem Area? Yes (No)	Plot ID: 2-24
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. dispicata	herb	facW	9.		
2. lolum multiflorum		NI	10.		
3. dock Rumex crispus		facW	11.		
4. cocklebur Xanthium strumarium		fac+	12.		
5. hordeum depressum		≥fac	13.		
6. intercedens			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). _____

Remarks: Some polypogon, juncus concentrated in areas small patches

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
X No Recorded Data Available

Field Observations:

Depth of Surface Water: — (in.)

Depth to Free Water in Pit: — (in.)

Depth to Saturated Soil: — (in.)

Wetland Hydrology Indicators:
Primary Indicators: None
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
X FAC-Neutral Test
___ Other (Explain in Remarks)
none

Remarks: No indicator of hydrology

135

SOILS

Map Unit Name (Series and Phase): Capistrano sandy loam 2-9% slope

Drainage Class: well drained

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): Entic Haploxerolls

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12		10YR3/2	none		silt loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No (Circle)
Wetland Hydrology Present?	Yes	No
Hydric Soils Present?	Yes	No

(Circle)

Is this Sampling Point Within a Wetland? Yes No

Remarks: doesnot meet

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Chanita Applicant/Owner: RMV Investigator: TC/TB	Date: 3/14/03 County: OR State: CA
Do Normal Circumstances exist on the site? Yes No Is the site significantly disturbed (Atypical Situation)? Yes No Is the area a potential Problem Area? Yes No (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: 2-28

drainage ditch adjacent to water treatment plant

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. blackwillow	tree	obl	9.		
2. mulefat	shrub	facW	10.		
3. Juncus balticus	herb	OBL	11.		
4. Ju mexicanus	herb	facW	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: meets

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
X No Recorded Data Available

Field Observations:

Depth of Surface Water: ___ (in.)

Depth to Free Water in Pit: ___ (in.)

Depth to Saturated Soil: ___ (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: no saturation in upper 12" even w/in days of a 10yr storm event does not meet

134

SOILS

Map Unit Name (Series and Phase): Callegus daylam 30 to 75% slope eroded

Drainage Class: well drained

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): Typic Xerorthents

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12		10YR 4/1	none		loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: meet

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No (Circle)
Wetland Hydrology Present? Yes No
Hydric Soils Present? Yes No

(Circle)
Is this Sampling Point Within a Wetland? Yes No

Remarks: Soils were observed w/in 1 week of a rainevent
No Saturation in upper 12" was evident —
does not meet.

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Chiquita Applicant/Owner: RMW Investigator: FC/TB	Date: 11/5/03 County: OB State: CA
Do Normal Circumstances exist on the site? Yes (circled) No Is the site significantly disturbed (Atypical Situation)? Yes No (circled) Is the area a potential Problem Area? Yes No (circled) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: E-26

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. distichlis spicata	herb	facW	9.		
2. anemopsis californica	herb	OBL	10.		
3. carex praegracilis	herb	facW	11.		
4. ambrosia psilostachya	herb	fac	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: meets

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
X No Recorded Data Available

Field Observations:

Depth of Surface Water: ___ (in.)

Depth to Free Water in Pit: ___ (in.)

Depth to Saturated Soil: ___ (in.)

Wetland Hydrology Indicators:
Primary Indicators:
None
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
X Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
X FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: meets

SOILS

Map Unit Name (Series and Phase): Riverwash

Drainage Class: Well

Field Observations Confirm Mapped Type? Yes (No)

Taxonomy (Subgroup):

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12		10YR 3/2	with mottles		loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: pit just upslope of amenopsis 10YR 3/3 no mottle

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes) No	(Circle)
Wetland Hydrology Present?	(Yes) No	
Hydric Soils Present?	(Yes) No	

Is this Sampling Point Within a Wetland? (Circle) (Yes) No

Remarks: met

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Chinquita	Date: 8/3/01
Applicant/Owner: RHV	County: OR
Investigator: PS/TC	State: CA
Do Normal Circumstances exist on the site? Yes (circled) No	Community ID:
Is the site significantly disturbed (Atypical Situation)? Yes No (circled)	Transect ID:
Is the area a potential Problem Area? Yes No (circled) (If needed, explain on reverse.)	Plot ID: 27

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. anemopsis californica	herb	OBL	9.		
2. scirpus americanus	↓	OBL	10.		
3. juncus mexicanus	↓	FACW	11.		
4. lambisia psilostachya	↓	FAC	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: met

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
X No Recorded Data Available

Field Observations:

Depth of Surface Water: to surface (in.)

Depth to Free Water in Pit: ↓ (in.)

Depth to Saturated Soil: ↓ (in.)

Wetland Hydrology Indicators:
Primary Indicators:
X Inundated
X Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
X Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name (Series and Phase): Capistrano Sandy Loam 2-9% slp

Drainage Class: Well drained

Field Observations Confirm Mapped Type? (Yes) No

Taxonomy (Subgroup): Entic Haploxerolls

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-16		5Y 3/2	w/mottle		Sandy loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes)	No	(Circle)
Wetland Hydrology Present?	(Yes)	No	
Hydric Soils Present?	(Yes)	No	

(Circle)

Is this Sampling Point Within a Wetland? (Yes) No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Planning area 3 Gobernadora Applicant/Owner: Rancho Mission Viejo Investigator: TC/JM	Date: 11/7/02 County: OR State: CA
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: 3-1

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. ★ pcris echoides	herb	FAC	9.		
2. ★ cynodon dactylon	herb	FAC	10.		
3. ★ eleocharis macrostachya	herb	OBL	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: not dominant but present: juncus xiphioides + bromus diandrus

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: — (in.)

Depth to Free Water in Pit: — (in.)

Depth to Saturated Soil: — (in.)

Wetland Hydrology Indicators:

Primary Indicators: None
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches → very few if any. majority of living roots did not exhibit oxidized rhizosphere
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- X FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: see back
does not meet

135

SOILS

Map Unit Name (Series and Phase): Capistrano Sandy Loam 2-9% slope

Drainage Class: Well drained

Field Observations Confirm Mapped Type? Yes (No)

Taxonomy (Subgroup): Entic Haploxerolls

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12"		2.5/N (Gley1 page	none		clay

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: meets

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes) No	(Circle)
Wetland Hydrology Present?	Yes (No)	
Hydric Soils Present?	(Yes) No	

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: No apparent hydrology at present, dry year → may exhibit signs at a wetter part of wetter year, however lack of oxidized rhizospheres makes this unlikely.

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Planning area 3 Gobernadora
Applicant/Owner: RMV
Investigator: JC/JM

Date: 11/7/02
County: OR
State: CA

Do Normal Circumstances exist on the site? Yes (circled) No
Is the site significantly disturbed (Atypical Situation)? Yes No (circled)
Is the area a potential Problem Area? Yes No (circled)
(If needed, explain on reverse.)

Community ID:
Transect ID:
Plot ID: 3 (2)

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Salix goodingii	tree	OBL	9.		
2. Xanthium strumarium	herb	FACU	10.		
3. Glinus lotoides	groundcover	OBL	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: meets

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
___ No Recorded Data Available

Field Observations:

Depth of Surface Water: ___ (in.)

Depth to Free Water in Pit: ___ (in.)

Depth to Saturated Soil: ___ (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
X Drainage Patterns in Wetlands basin/lag
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

cracks evidence of wetting & drying

Remarks: water observed at 4 feet below ground surface in recently dug pit

SOILS

Map Unit Name (Series and Phase): Riverwash

Drainage Class: Well

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup):

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12		10YR 4/2	w/ mottle	abundant distinct	loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: meets

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No (Circle)
Wetland Hydrology Present? Yes No
Hydric Soils Present? Yes No

(Circle)
Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Planning area 3 Gobernador Applicant/Owner: RMV Investigator: IC/JM	Date: 11/7/02 County: OR State: CA
Do Normal Circumstances exist on the site? Yes (circled) No Is the site significantly disturbed (Atypical Situation)? Yes No (circled) Is the area a potential Problem Area? Yes No (circled) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: 3

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Polygonum lapathifolium	herb	OBL	9.		
2. Glinus lotoides	groundcover	OBL	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100 %

Remarks: meets

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: ___ (in.)

Depth to Free Water in Pit: ___ (in.)

Depth to Saturated Soil: ___ (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- X Drainage Patterns in Wetlands basin/large cracks - evidence of wetting & drying

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: water observed at 4 feet below ground surface in Recently dug pit

SOILS

Map Unit Name (Series and Phase): River wash

Drainage Class: _____

Field Observations Confirm Mapped Type? (Yes) No

Taxonomy (Subgroup): _____

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12		10YR4/2	w/mottle	abundant distinct	loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: meets

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes)	No (Circle)
Wetland Hydrology Present?	(Yes)	No
Hydric Soils Present?	(Yes)	No

(Circle)

Is this Sampling Point Within a Wetland? (Yes) No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: PA 3 Gobernadora Applicant/Owner: RMV Investigator: IC/JM	Date: 1/4/02 County: OR State: CA
Do Normal Circumstances exist on the site? Yes (No) Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: ~~3~~ 4

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. xanthium strumarium	herb	FACT	9.		
2. typha (sp) dead	herb	OBL	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: neat

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: — (in.)

Depth to Free Water in Pit: — (in.)

Depth to Saturated Soil: — (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- X Drainage Patterns in Wetlands basin/large cracks evidence of wetty & drying

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: water observed at 4 feet below groundsurface in recently dug pit

SOILS

Map Unit Name (Series and Phase): Riverwash

Drainage Class: Well

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup):

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12		10YR 4/2	w/mottles	abundant distinct	loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- X Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: meet

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No (Circle)
Wetland Hydrology Present? Yes No
Hydric Soils Present? Yes No

(Circle)
Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: HA 3 Gdernadora Applicant/Owner: RMV Investigator: tc/JM	Date: 11/7/02 County: OR State: CA
Do Normal Circumstances exist on the site? Yes (No) Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: 3 (5)

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Scirpus californica	herb	OBL	9.		
2. Conyza canadensis	herb	FAC	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: meets

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: _____ (in.)

Depth to Free Water in Pit: _____ (in.)

Depth to Saturated Soil: _____ (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- X Drainage Patterns in Wetlands basin

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: source of water is unclear

SOILS

Map Unit Name (Series and Phase): Riverwash

Drainage Class: Well

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup):

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12		10 YR 4/2	w/mottles	abundant	

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: meets

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No (Circle)
Wetland Hydrology Present?	Yes	No
Hydric Soils Present?	Yes	No

(Circle)

Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: PA 3 Gobernador Applicant/Owner: RMV Investigator: JC/TM	Date: 11/7/02 County: OR State: CA
Do Normal Circumstances exist on the site? Yes No Is the site significantly disturbed (Atypical Situation)? Yes No Is the area a potential Problem Area? Yes No (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: 6

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. unvegetated			9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). Ø

Remarks: does not meet

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
X No Recorded Data Available

Field Observations:

Depth of Surface Water: ___ (in.)

Depth to Free Water in Pit: ___ (in.)

Depth to Saturated Soil: ___ (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

NONE

Remarks: top of berm does not meet

101

SOILS

Map Unit Name (Series and Phase): Riverwash

Drainage Class: Well

Field Observations Confirm Mapped Type? (Yes) No

Taxonomy (Subgroup):

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12		10YR 4/2	w/mottle	abundant	

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: meet

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes (No) (Circle)	
Wetland Hydrology Present?	Yes (No)	
Hydric Soils Present?	(Yes) No	

(Circle)
Is this Sampling Point Within a Wetland? Yes (No)

Remarks:
- indicate that soils may be historic

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: PA 3 Gobernadora Applicant/Owner: RMV Investigator: TC/JM	Date: 11/11/02 County: OR State: CA
Do Normal Circumstances exist on the site? Yes (No) Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: 3-21

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Polypogon monspeliensis	herb	FACW+	9.		
2. Bromus diandrus	herb	UPL	10.		
3. Baccharis salicifolia	shrub	FACW	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 66%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: ___ (in.)

Depth to Free Water in Pit: 4 (in.)

Depth to Saturated Soil: to surface (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- X Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: meets

142

SOILS

Map Unit Name (Series and Phase): Rockoutcrop-Clendaco complex 30to75% Slope

Drainage Class: Somewhat Excessively drained

Field Observations Confirm Mapped Type? (Yes) No

Taxonomy (Subgroup): Typic Xerorthents

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-4		10YR4/1		with mottles	sand
4-12			mottled sand		

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- X Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? (Yes) No

(Circle)
Is this Sampling Point Within a Wetland? (Yes) No

Remarks: meet

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: DA 3 Gobernadora Applicant/Owner: RMV Investigator: IC/JM	Date: 11/1/02 County: OR State: CA
Do Normal Circumstances exist on the site? Yes (circled) No Is the site significantly disturbed (Atypical Situation)? Yes (circled) No Is the area a potential Problem Area? Yes (circled) No (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: 3-22

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Mulefat	Shrub	FACW	9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-).

Remarks: most of terrace also supports herb layer include ambrosia pilulsachya (FACW) Raphanus sativa (UPL) Polygonum persicaria (FACW) and Bromus sp (UPL)

HYDROLOGY

___ Recorded Data (Describe in Remarks): ___ Stream, Lake, or Tide Gauge ___ Aerial Photographs ___ Other X No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: ___ Inundated X Saturated in Upper 12 Inches ___ Water Marks ___ Drift Lines ___ Sediment Deposits ___ Drainage Patterns in Wetlands
Field Observations: Depth of Surface Water: ___ (in.) Depth to Free Water in Pit: ___ (in.) Depth to Saturated Soil: 4 (in.)	Secondary Indicators (2 or more required): ___ Oxidized Root Channels in Upper 12 Inches ___ Water-Stained Leaves ___ Local Soil Survey Data ___ FAC-Neutral Test ___ Other (Explain in Remarks)

Remarks: terrace adj to stream

1a2

SOILS

Map Unit Name (Series and Phase): Rockaway-Geneva complex 30-75% slope

Drainage Class: Somewhat Excessively drained

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): Typic Xerorthents

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12		10YR 5/2		no mottle	sand w/some silt

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: sediment too fresh to develop indicators, chroma appears Reduced

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No (Circle)
Wetland Hydrology Present?	Yes	No
Hydric Soils Present?	Yes	No

(Circle)

Is this Sampling Point Within a Wetland? Yes No

Remarks: NWS

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: PA3 Gobernadora Applicant/Owner: RMV Investigator: JC/JTM	Date: 11/1/02 County: OR State: CA
Do Normal Circumstances exist on the site? Yes (circled) No Is the site significantly disturbed (Atypical Situation)? Yes No (circled) Is the area a potential Problem Area? Yes No (circled) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: F23

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. baccharis salicifolia	shrub	FACW	9.		
2. Salix lasiolepis	tree	FACW	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100 %

Remarks: meets

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: — (in.)

Depth to Free Water in Pit: — (in.)

Depth to Saturated Soil: to surface (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: meets

142

SOILS

Map Unit Name (Series and Phase): Clenego sandy loam 30-75% slopes eroded

Drainage Class: somewhat excessively drained

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): Typic Xerorthents

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- X Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: meets

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No (Circle)
Wetland Hydrology Present? Yes No
Hydric Soils Present? Yes No

(Circle)
Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: PA3 Gobernadora Applicant/Owner: RMV Investigator: TC/TM	Date: 11/11/02 County: OR State: CA
Do Normal Circumstances exist on the site? Yes (No) Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: 3-24

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Salix lasiolepis			9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-).

Remarks: Ragweed Eupland Brome to east of Salix

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: ___ (in.)

Depth to Free Water in Pit: ___ (in.)

Depth to Saturated Soil: ___ (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- X Drainage Patterns in Wetlands adj to west

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: 10 feet west of DS # 23

1-12

SOILS

Map Unit Name (Series and Phase): Clenela Sandy Loam 30 to 75% slopes eroded

Drainage Class: Somewhat poorly drained

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): Typic Xerorthents

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-3		10YR4/1			Sandy Loam
3-12		10YR5/3	w/mottle		Sandy Loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: meets

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No (Circle)
Wetland Hydrology Present? Yes No
Hydric Soils Present? Yes No

(Circle)
Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: PA 3 Gobernador Applicant/Owner: RMV Investigator: IC/JM	Date: 11/11/02 County: OB State: CA
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: 3-25

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Ambrosia psilostachya	herb	FACW	9.		
2. Nassella pulchra	herb	UPL	10.		
3. Helenium microcephalum	herb	UPL	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 33%

Remarks: Ragweed terrace North of pond / does not meet

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: ___ (in.)

Depth to Free Water in Pit: ___ (in.)

Depth to Saturated Soil: ___ (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: does not meet

142

SOILS

Map Unit Name (Series and Phase): Cuneba Sandy Loam 30-75% slopes eroded

Drainage Class: Somewhat excessively drained

Taxonomy (Subgroup): Typic Xerorthents

Field Observations Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12		2.5Y 6/3	w/mottle		Sandy loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: does not meet

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes ~~No~~ (Circle)	
Wetland Hydrology Present?	Yes ~~No~~	
Hydric Soils Present?	Yes ~~No~~	
Is this Sampling Point Within a Wetland?		(Circle) Yes ~~No~~

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: PA3 Gobernadora Applicant/Owner: RMV Investigator: TCATM	Date: 11/11/02 County: OB State: CA
Do Normal Circumstances exist on the site? Yes (No) Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: 3-26

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. epilobium ciliatum		OBL	9.		
2. salix lasiolepis		FACW	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: meets

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: — (in.)

Depth to Free Water in Pit: 4 (in.)

Depth to Saturated Soil: ___ (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: meets

142

SOILS

Map Unit Name (Series and Phase): Cienega Sandy Loam 30 to 75% slopes eroded

Drainage Class: somewhat poorly drained

Taxonomy (Subgroup): Typic Xerorthents

Field Observations Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-10		brown	no mottle		Sand
10-12		2.5 Y 4/1			

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: meets

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes No	(Circle)
Wetland Hydrology Present?	Yes No	
Hydric Soils Present?	Yes No	

(Circle)

Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: PA 3 Gobernador Applicant/Owner: RMV Investigator: T.C./JW	Date: 11/11/02 County: OR State: CA
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: 3-27

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Salix lasiolepis	tree	FACW	9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: meets

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: — (in.)

Depth to Free Water in Pit: — (in.)

Depth to Saturated Soil: +2 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- X Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: just east of DS #26/meets

142

SOILS

Map Unit Name (Series and Phase): Cleneba Sandy Loam 30-75% Slopes eroded

Drainage Class: somewhat poorly drained

Field Observations Confirm Mapped Type? (Yes) No

Taxonomy (Subgroup): Typic Xerorthents

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12		10YR 4/2			Sand
		hyR chroma no mottle			

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- X Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes) No	(Circle)
Wetland Hydrology Present?	(Yes) No	
Hydric Soils Present?	(Yes) No	

(Circle)

Is this Sampling Point Within a Wetland? (Yes) No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: PA 3 Gdermadon	Date: 11/11/02
Applicant/Owner: RMV	County: OR
Investigator: TC/JM	State: [illegible]
Do Normal Circumstances exist on the site? Yes (No)	Community ID:
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID:
Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Plot ID: 3-28

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Toxicodendron diversilobum	herb	UPL	9.		
2. Salix lasiolepis	tree	FACW	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 50%

Remarks: does not meet

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: ___ (in.)

Depth to Free Water in Pit: ___ (in.)

Depth to Saturated Soil: ___ (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- X Drainage Patterns in Wetlands

terrace adj to Rainy Stream

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:

175

SOILS

Map Unit Name (Series and Phase): Mylford sandy loam 0-15% slope

Drainage Class: moderately well drained

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): Typic Haploxeralfs

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12		hydchroma	sand		
12-16		2.5Y5/2	nomottle		Sandyloam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: does not meet

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes No (Circle)	
Wetland Hydrology Present?	Yes No	
Hydric Soils Present?	Yes No	
Is this Sampling Point Within a Wetland?	Yes No (Circle)	

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: PA 3 Gdermodam Applicant/Owner: RMV Investigator: TC/TM	Date: 11/11/02 County: OR State: CA
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: 3-29

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Salix lasiolepis	tree	FACW	9.		
2. bromus diandrus	herb	UPL	10.		
3. Cyperus inudiviratus	herb	FACW+	11.		
4. Juncus rugulosus	herb	OBL	12.		
5. Raphanus sativa	herb	UPL	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 60%

Remarks: meets

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: ___ (in.)

Depth to Free Water in Pit: ___ (in.)

Depth to Saturated Soil: ___ (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- X Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: low lying area ready to flow into creek

175

SOILS

Map Unit Name (Series and Phase): Myford Sandy loams 2-5% slopes

Drainage Class: moderately well drained

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): Typic Palexeralfs

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-6		light brown 5YR			
6-14		5YR 5/1			Sandy loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- X Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: met

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No (Circle)
Wetland Hydrology Present? Yes No
Hydric Soils Present? Yes No

(Circle)
Is this Sampling Point Within a Wetland? Yes No

Remarks:

met

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: RMV, Goleinodora	Date: 3-8-03
Applicant/Owner: RMV	County: OR
Investigator: T Bonkamp	State: CA
Do Normal Circumstances exist on the site? (Yes) No	Community ID: Disturbed Mulefat
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID:
Is the area a potential Problem Area? Yes (No)	Plot ID: WR 1 (30)
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Baccharis salicifolius	S	FACW	9.		
2. Lotus Scoparius	S	UPL	10.		
3. Bromus rubens	H	UPL	11.		
4. Ambrosia psilostachya	H	FAC	12.		
5. Hypochaeris glabrata	H	UPL	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 40%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: — (in.)

Depth to Free Water in Pit: — (in.)

Depth to Saturated Soil: — (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

NONE

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

NONE

Remarks: Dry Sandy Area — Mulefat very stressed even w/ recent rains

146

SOILS

Map Unit Name (Series and Phase): NA - Very Sandy

Drainage Class: Well

Field Observations Confirm Mapped Type? (Yes) No

Taxonomy (Subgroup):

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
		Sand to 12"			
		Barely MOIST			
		Within 10 days of significant rainfall			(>3")

Hydric Soil Indicators:

None
- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors

None
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes (No)	(Circle)
Wetland Hydrology Present?	Yes (No)	
Hydric Soils Present?	Yes (No)	

(Circle)

Is this Sampling Point Within a Wetland? Yes (No)

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: RMV Gobernadora	Date: 3-8-03
Applicant/Owner: RMV	County: OR
Investigator: T Bom Kamp	State: CA
Do Normal Circumstances exist on the site? **Yes** No	Community ID:
Is the site significantly disturbed (Atypical Situation)? Yes **No**	Transect ID:
Is the area a potential Problem Area? Yes **No** (If needed, explain on reverse.)	Plot ID: WR 23 (31)

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Baccharis Salicifolia	H	FACW	9.		
2. Cyperus eragrostis	H	FACW	10.		
3. Juncus mexicanus	H	FACW	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: — (in.)

Depth to Free Water in Pit: — (in.)

Depth to Saturated Soil: — (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

NONE

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

NONE

Remarks: Well drained sand with no saturation in upper 12" ≈ 10 days after 3" rainfall that ponded vernal pools and other seasonal ponds throughout so. California.

146

SOILS

Map Unit Name (Series and Phase): N/A

Drainage Class: well drained

Field Observations Confirm Mapped Type? Yes (No)

Taxonomy (Subgroup):

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-2	CLAY	10YR 3/3	NONE		
2-4	Clayey Sand	10YR 3/3	7.5YR 4/6	Some/Distinct	
4-12	Sand	10YR 3/3	NONE		

Hydric Soil Indicators:

NONE

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors

NONE

- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: weak redox in clayey sand beneath upper 2" clay layer; however, soil has high chroma matrix + is not hydric

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? Yes (No)

(Circle)
Is this Sampling Point Within a Wetland? Yes (No)

Remarks: This is artificial basin that is not connected hydrologically to nearby drainage ≈ 4'-5' higher in elevation w/ additional 4-5' berm
NO OHWM - No wetlands + isolated

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gobernadora Applicant/Owner: RMV Investigator: TBonkamp	Date: 3-8-03 County: OR State: CA
Do Normal Circumstances exist on the site? **Yes** No Is the site significantly disturbed (Atypical Situation)? Yes **No** Is the area a potential Problem Area? Yes **No** (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: TB 3 B-34

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Scirpus americanus	H	OBL	9.		
2. Rorippa nasturtium-aquaticum	H	OBL	10.		
3. Juncus mexicanus	H	FACW	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
X No Recorded Data Available

Field Observations:

Depth of Surface Water: — (in.)

Depth to Free Water in Pit: 1"-2" (in.)

Depth to Saturated Soil: Surface (in.)

Wetland Hydrology Indicators:
Primary Indicators:
X Inundated
X Saturated in Upper 12 Inches
X Water Marks
X Drift Lines
X Sediment Deposits
X Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks:

146

SOILS

Map Unit Name (Series and Phase): Riverwash

Drainage Class: Well Drained

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup):

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-2		Sand - no colors Taken			
2-12"		Gleyed	Sand		

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- X Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No (Circle)
Wetland Hydrology Present? Yes No
Hydric Soils Present? Yes No

(Circle)
Is this Sampling Point Within a Wetland? Yes No

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gobernador	Date: 3-8-03
Applicant/Owner: RMV	County: OR
Investigator: TBonkamp	State: CA
Do Normal Circumstances exist on the site? Yes (No)	Community ID: Sulfur Canyon
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID:
Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Plot ID: TB4 S-35

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Eleocharis Acicularis	H	OBL	9.		
2. Salix lasiolepis	S	FACW	10.		
3. Mimulus guttatus	H	OBL	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: 1" (in.)

Depth to Free Water in Pit: Surface (in.)

Depth to Saturated Soil: Surface (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- X Inundated
- X Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- X Sediment Deposits
- X Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- X FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:

146

SOILS

Map Unit Name (Series and Phase): Corralitos Loamy Sand

Drainage Class: Somewhat Excessively drained

Field Observations Confirm Mapped Type? (Yes) No

Taxonomy (Subgroup): Typic Xerofpsamments

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-2		10yr 3/1			
2-12		10yr 3/1	7.5y 4/6		

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- X Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No (Circle)
Wetland Hydrology Present? Yes No
Hydric Soils Present? Yes No

(Circle)
Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: TRAMPAS
Applicant/Owner: RMV
Investigator: J. Chlup - S. Asgari

Date: June 13/03
County: OR
State: CA

Do Normal Circumstances exist on the site? Yes (No)
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID:
Transect ID:
Plot ID: 5-12

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Xanthium strumarium	H	FAC	9.		
2. ~~Ho~~ Cynodon dactylon	H	FAC	10.		
3. Hirschfeldia incana	H	UPL	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 66%

Remarks: meets

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
X No Recorded Data Available

Field Observations:

Depth of Surface Water: — (in.)
Depth to Free Water in Pit: — (in.)
Depth to Saturated Soil: — (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands margin of depression
Secondary Indicators (2 or more required):
✓ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: meets

133

SOILS

Map Unit Name (Series and Phase): Botella clay loam 9-15% slope

Drainage Class: Well drained

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): Pachic Argixerolls

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12		10yr 2/2	10 yr 5/8	many	Sandy loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: meet

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No (Circle)
Wetland Hydrology Present? Yes No
Hydric Soils Present? Yes No

(Circle)
Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Trampas Applicant/Owner: RNW Investigator: IC/SA	Date: 6/13/03 County: OV State: CA
Do Normal Circumstances exist on the site? Yes No Is the site significantly disturbed (Atypical Situation)? Yes No Is the area a potential Problem Area? Yes No (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: 5-13

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Lolium multiflorum		NI	9.		
2. Medicago		UPL	10.		
3. Erodium ~~sp~~ sp.		UPL	11.		
4. Ambrosia psylostachya		Fac	12.		
5. Hirshfeldia incana		UPL	13.		
6. Cynodon dactylon		Fac	14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 50% at most

Remarks: does not meet

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: — (in.)

Depth to Free Water in Pit: — (in.)

Depth to Saturated Soil: — (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ✓ Oxidized Root Channels in Upper 12 Inches — greater than 6" depth
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test — does not pass
- ___ Other (Explain in Remarks)

slightly higher elevation than pit (12)

Remarks: does not meet

1337

SOILS

Map Unit Name (Series and Phase): Botella clay loam 9-15 % slope

Drainage Class: well drained

Field Observations Confirm Mapped Type? Yes (No)

Taxonomy (Subgroup): Pachic Argixerolls

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-6		10YR 3/2	—	no mottles	Sandy loam
6+		10YR 2/2	10YR 5/8	many	Sandy loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: meet

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? (Yes) No

(Circle)
Is this Sampling Point Within a Wetland? Yes (No)

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Tramper Applicant/Owner: RMU Investigator: IC/SA	Date: 6/13/03 County: OR State: CA
Do Normal Circumstances exist on the site? Yes No Is the site significantly disturbed (Atypical Situation)? Yes No Is the area a potential Problem Area? Yes No (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: S-14

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. lotus purshianus		UPL	9.		
2. lolium multiflorum		NI	10.		
3. catsear hypochaeris glabra		UPL	11.		
4. Scarlet pimpernel		UPL	12.		
5. spike rush		OBL	13.		
6. bermudagrass		FAC	14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 50%

Remarks: upslope from wetland even if lolium wetland status

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: — (in.)

Depth to Free Water in Pit: — (in.)

Depth to Saturated Soil: — (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- X Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test — does not
- ___ Other (Explain in Remarks)

Remarks:

133

SOILS

Map Unit Name (Series and Phase): Botella clay loam 9-15% Slopes

Drainage Class: welldrained

Field Observations Confirm Mapped Type? Yes (No)

Taxonomy (Subgroup): Pachic Argixerolls

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12		10YR2/1	w/mottle		loamy

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: Neil

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes (No)	(Circle)
Wetland Hydrology Present?	Yes (No)	
Hydric Soils Present?	(Yes) No	

(Circle)

Is this Sampling Point Within a Wetland? Yes (No)

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Trampas	Date: 6/13/03
Applicant/Owner: RNV	County: OR
Investigator: JC/SA	State: CA
Do Normal Circumstances exist on the site? (Yes) No	Community ID:
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID:
Is the area a potential Problem Area? Yes (No)	Plot ID: S-16
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Xanthium strumarium		FAC	9.		
2. Polypogon monspeliensis		FACW	10.		
3. ~~? Sporobolus~~ Muhlenbergia		FACW	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: meets

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: ___ (in.)

Depth to Free Water in Pit: ___ (in.)

Depth to Saturated Soil: ___ (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ✓ Drainage Patterns in Wetlands depression

Secondary Indicators (2 or more required):
- faint ✓ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: meets

131

SOILS

Map Unit Name (Series and Phase): Botella loam 2 to 9 % slops

Drainage Class: Well drained

Field Observations Confirm Mapped Type? Yes (No)

Taxonomy (Subgroup): Pachic Argixeroll

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12		2.5Y 4/1		few / faint	clay

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: hutt

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes) No	(Circle)
Wetland Hydrology Present?	(Yes) No	
Hydric Soils Present?	(Yes) No	

(Circle)

Is this Sampling Point Within a Wetland? (Yes) No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: trampas	Date: 7/14/03
Applicant/Owner: RMW	County: OR
Investigator: TC/TB	State: CA
Do Normal Circumstances exist on the site? Yes No	Community ID:
Is the site significantly disturbed (Atypical Situation)? Yes No	Transect ID:
Is the area a potential Problem Area? Yes No (If needed, explain on reverse.)	Plot ID: 5-17

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Juncus mexicanus		FACW	9.		
2. Baccharis pilularis		UPL	10.		
3. Baccharis pilularis		UPL	11.		
4. Amsinckia		FACW	12.		
5. Br rubens		UPL	13.		
6. Br diandrus		UPL	14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 50%

Remarks: does not meet

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: — (in.)

Depth to Free Water in Pit: — (in.)

Depth to Saturated Soil: — (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

None

Remarks: does not meet — soil too porous to maintain saturation near surface

142

SOILS

Map Unit Name (Series and Phase): Cieneba Sandy loam 30-75% Slopes eroded Somewhat excessively drained

Drainage Class:

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): Typic Xerorthents

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-18		hyfchrom	no mottle		Sand

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: does not meet

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes No (Circle)	
Wetland Hydrology Present?	Yes No	
Hydric Soils Present?	Yes No	
Is this Sampling Point Within a Wetland?		(Circle) Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Cristianitos meadows Applicant/Owner: KMV Investigator: IC	Date: 8/28/01 County: OR State: CA
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: 6-1

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. baccharis salicifolia	shrub	FACW	9.		
2. ambrosia psilostachya	herb	FAC	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100 %

Remarks: very little vegetated cover <30%

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
X No Recorded Data Available

Field Observations:

Depth of Surface Water: ___ (in.)

Depth to Free Water in Pit: ___ (in.)

Depth to Saturated Soil: ___ (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
X Sediment Deposits
X Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: undrainge

175

SOILS

Map Unit Name (Series and Phase): Myford sandy loam, 9-15% slopes

Drainage Class: moderately well drained

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): thermic typic Palexeralfs

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12		high chroma			sand

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: clean sand deposit / no mottle / no gleying / no odor

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes No	(Circle)
Wetland Hydrology Present?	Yes No	
Hydric Soils Present?	Yes No	

Is this Sampling Point Within a Wetland? (Circle) Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Cristanto's Meadows Applicant/Owner: RMV Investigator: TC	Date: 8/30/01 County: [illegible] State: [illegible]
Do Normal Circumstances exist on the site? **Yes** No Is the site significantly disturbed (Atypical Situation)? Yes **No** Is the area a potential Problem Area? Yes **No** (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: 6-2

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Apium prorepens	H	FacW	9.		
2. T. mexicanus	H	FacW	10.		
3. Salix lasiolepis	T	FacW	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: moss

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: ___ (in.)

Depth to Free Water in Pit: ___ (in.)

Depth to Saturated Soil: 7 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- X Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- X Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: Windrange

175

SOILS

Map Unit Name (Series and Phase): Myford sandy loam, 9-15% slopes

Drainage Class: moderately well drained

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): Typic Palexeralfs

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-2		10YR5/2	w/mottle		Sandy
2-12		N4	none		Sand

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No (Circle)
Wetland Hydrology Present? Yes No
Hydric Soils Present? Yes No

(Circle)
Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Cristianitos meadows	Date: 8/30/01
Applicant/Owner: KMV	County: OR
Investigator: IC	State: CA
Do Normal Circumstances exist on the site? (Yes) No	Community ID:
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID:
Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Plot ID: 6-3

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Iva neglecta mexicanus	H	facW	9.		
2. Juncus Rugulosis	H	OBL	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: confined to allium

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: ___ (in.)

Depth to Free Water in Pit: ___ (in.)

Depth to Saturated Soil: ___ (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- X Sediment Deposits
- X Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- X Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- X FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: Standing damp ~ qu

175

SOILS

Map Unit Name (Series and Phase): Myford sandy loam, 9-18% slopes

Drainage Class: moderately well drained

Taxonomy (Subgroup): thermic typic Palexeralfs

Field Observations Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12					sandy clay

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: Soil is sandy diffuse mottles clear clay at 9" - gleyed colors observed dry from assessment 7/16/01

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes No	(Circle)
Wetland Hydrology Present?	Yes No	
Hydric Soils Present?	Yes No	

(Circle)

Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Cristianitos meadows	Date: 8/15/01
Applicant/Owner: RMV	County: OR
Investigator: JC/KS	State: CA
Do Normal Circumstances exist on the site? (Yes) No	Community ID:
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID:
Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Plot ID: b-4

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. paspalum distichum		OBL	9.		
2. Eleocharis acicularis		OBL	10.		
3. Scirpus californicus		OBL	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:
mtb

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: — (in.)

Depth to Free Water in Pit: 10 (in.)

Depth to Saturated Soil: to surface (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- X Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:

SOILS

17a

Map Unit Name (Series and Phase): Myford Sandy loam, thick surface, 2 to 9%

Drainage Class: Moderately well drained

Field Observations Confirm Mapped Type? (Yes) No

Taxonomy (Subgroup): typic Palexeralfs

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-5		2.5YR	w/mottle		Sandy loam
5-16		4/5 GY Gley pal	nonstile		

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: meet

WETLAND DETERMINATION

		(Circle)
Hydrophytic Vegetation Present?	(Yes) No	
Wetland Hydrology Present?	(Yes) No	
Hydric Soils Present?	(Yes) No	
Is this Sampling Point Within a Wetland?	(Yes) No	

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Cristianitos Meadow	Date: 8/30/01
Applicant/Owner: RMV	County: OR
Investigator: TCHW	State: CA
Do Normal Circumstances exist on the site? (Yes) No	Community ID:
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID:
Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Plot ID: 6-5

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. cynodon dactylon	H	FAC	9.		
2. polypogon monspeliensis	H	FACW	10.		
3. bromus hordeaceus	H	FACU-	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 66%

Remarks: meets

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
X No Recorded Data Available

Field Observations:

Depth of Surface Water: — (in.)

Depth to Free Water in Pit: — (in.)

Depth to Saturated Soil: — (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
X Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
X Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
X FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: depression in landscape + signs of pond at least
→ observed to pond 2-13-01 + 2-21-01

177

SOILS

Map Unit Name (Series and Phase): Mulford sandy loam, 9-30% slopes

Drainage Class: moderately well drained

Field Observations Confirm Mapped Type? (Yes) No

Taxonomy (Subgroup): thermic Typic Palexeralfs

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12		2.5YR 5/3	w/ mottles		Sandy loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: pondel 2-13-01 - 2-21-01 ↳ 4" water pondel 7 2 weeks

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes) No	(Circle)
Wetland Hydrology Present?	(Yes) No	
Hydric Soils Present?	(Yes) No	

(Circle)

Is this Sampling Point Within a Wetland? (Yes) No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Cristianitos Meadow Applicant/Owner: RMV Investigator: PS/SY/TC	Date: 7/10/01 County: OR State: CA
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: 6-6

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. baccharis salicifolia	S	FacW	9.		
2. ambrosia psilostachya	H	FAC	10.		
3. polypogon monspeliensis	H	FacW	11.		
4. juncus maximus	H	FacW	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100 %

Remarks: meets

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: — (in.)

Depth to Free Water in Pit: — (in.)

Depth to Saturated Soil: — (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- X Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- X Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- X FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: meets/very compacted

177

SOILS

Map Unit Name (Series and Phase): Myford sandy loam 9-30%

Drainage Class: moderately well drained

Field Observations Confirm Mapped Type? (Yes) No

Taxonomy (Subgroup): typic palexeralfs

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-6		2.5Y 5/4	w/mottle		loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: highly aparent / does not meet. Reexamined in field during site visit identified low chroma (10YR 5/2 w/ mottles)

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes) No	(Circle)
Wetland Hydrology Present?	(Yes) No	
Hydric Soils Present?	(Yes) No	

(Circle)

Is this Sampling Point Within a Wetland? (Yes) No

Remarks: Reversed to yes after site visit by agencies. Soils contained mottle and were not identified in previous pit.

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Constantino Meadows Applicant/Owner: RNW Investigator: DSKF/CY	Date: 7/10/01 County: OR State: CA
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: T-7

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. black willow	T	OBL	9.		
2. mulefat	S	FACW	10.		
3. Rabbitsfoot grass	H	FACW	11.		
4. Saltgrass	H	FACW	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: mod

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: — (in.)

Depth to Free Water in Pit: — (in.)

Depth to Saturated Soil: — (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- X Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- X Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- X FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: within drainage bottom

177

SOILS

Map Unit Name (Series and Phase): myford sandy loam 9-30%

Drainage Class: moderately well drained

Field Observations Confirm Mapped Type? (Yes) No

Taxonomy (Subgroup): typic pal exeralfs

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-4		2.5Y 5/3	with mottles		loam
4-6		2.5Y 5/3	"		
6-9		2.5Y 5/1	"		
9-16		2.5Y 5/3	"		

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: mottles

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes) No	(Circle)
Wetland Hydrology Present?	(Yes) No	
Hydric Soils Present?	(Yes) No	

(Circle)

Is this Sampling Point Within a Wetland? (Yes) No

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Cristiandos Meadow	Date: 8/28/01
Applicant/Owner: RMV	County: OR
Investigator: IC	State: CA
Do Normal Circumstances exist on the site? (Yes) No	Community ID:
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID:
Is the area a potential Problem Area? Yes (No)	Plot ID: 6-8
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Juncus mexicanus	H	FACW	9.		
2. Paspalum distichum	H	OBL	10.		
3. typha sp	H	OBL	11.		
4. distichlis spicata	H	FACW	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: trees

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: at surface (in.)

Depth to Free Water in Pit: at surface (in.)

Depth to Saturated Soil: at surface (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- X Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- X Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: throughout channel surface water is visible periodically

177

SOILS

Map Unit Name (Series and Phase): Myford Sandy loam 9-30% slopes

Drainage Class: moderately well drained

Field Observations Confirm Mapped Type? (Yes) No

Taxonomy (Subgroup): thermic Typic Palexeralfs

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12		10YR 4/2	w/mottles		loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: pit at margins in salt grass
channel gravel 10YR 4/1

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes)	No (Circle)
Wetland Hydrology Present?	(Yes)	No
Hydric Soils Present?	(Yes)	No

(Circle)
Is this Sampling Point Within a Wetland? (Yes) No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Cristianitos Meadow	Date: 3/24/03
Applicant/Owner: RMW	County: OR
Investigator: EC/AMA	State: CA
Do Normal Circumstances exist on the site? Yes No	Community ID:
Is the site significantly disturbed (Atypical Situation)? Yes No	Transect ID:
Is the area a potential Problem Area? Yes No (If needed, explain on reverse.)	Plot ID: 6-11

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. distichlis spicata		FACW	9.		
2. juncus mexicanus		FACW	10.		
3.			11.		
4. justiprope			12.		
5. verbena to			13.		
6. upland			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: ___ (in.)

Depth to Free Water in Pit: ___ (in.)

Depth to Saturated Soil: ___ (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- X Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- X FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:

177

SOILS

Map Unit Name (Series and Phase): myford Sandy loam 9/30 %

Drainage Class: moderately well drained

Field Observations Confirm Mapped Type? Yes (No)

Taxonomy (Subgroup): typic Palexeralfs

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-7		10YR 3/2	w/mottles		clay loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No (Circle)
Wetland Hydrology Present? Yes No
Hydric Soils Present? Yes No

(Circle)
Is this Sampling Point Within a Wetland? (Yes) No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Cristianto's Meadow Applicant/Owner: RMV Investigator: tc/AM	Date: 3/24/03 County: State:
Do Normal Circumstances exist on the site? **Yes** No Is the site significantly disturbed (Atypical Situation)? Yes **No** Is the area a potential Problem Area? Yes **No** (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: 6\12

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. sattanss	herb	FACW	9.		
2. medicago	herb	upl	10.		
3. Ragweed	herb	FAC	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-).

Remarks: habitat heterogeneous mix of 3 patch types w/ the above dominant (Area patches include distichlis bromus hordeaceus + medicago polymorpha & distichlis)

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
X No Recorded Data Available

Field Observations:

Depth of Surface Water: — (in.)

Depth to Free Water in Pit: — (in.)

Depth to Saturated Soil: — (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
X Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
X FAC-Neutral Test
___ Other (Explain in Remarks)

none

Remarks: terrace adj to stream

SOILS

177

Map Unit Name (Series and Phase): Myford Sandy loam 9-30%

Drainage Class: moderately well drained

Field Observations Confirm Mapped Type? (Yes) No

Taxonomy (Subgroup): Typic Palexeralfs

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-8		10YR 3/2	winter		loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes) No	(Circle)
Wetland Hydrology Present?	(Yes) No	
Hydric Soils Present?	(Yes) No	

(Circle)

Is this Sampling Point Within a Wetland? (Yes) No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Cristaintos Meadow	Date: 3/24/03
Applicant/Owner: RMV	County:
Investigator: JC/AM	State:
Do Normal Circumstances exist on the site? Yes No	Community ID:
Is the site significantly disturbed (Atypical Situation)? Yes No	Transect ID:
Is the area a potential Problem Area? Yes No (If needed, explain on reverse.)	Plot ID: 6-13

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. eleocharis macrostana	H	OBL	9.		
2. distichlis spicata	H	FACW	10.		
3. bro hordeaceus	H	upl	11.		
4. mulefat	S	facw	12.		
5. medicago	H	upl	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 60%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: ___ (in.)

Depth to Free Water in Pit: ___ (in.)

Depth to Saturated Soil: to surface (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- X Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: Saturated in channel

177

SOILS

Map Unit Name (Series and Phase): Myford sandy loam 9-30%

Drainage Class: moderately drained

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): typic Palexeralfs

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
		10YR 3/2	few/faint	mottles	

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes No	(Circle)
Wetland Hydrology Present?	Yes No	
Hydric Soils Present?	Yes No	

(Circle)

Is this Sampling Point Within a Wetland? Yes No

Remarks: meets

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Cristantos meadows	Date: 3/29/03
Applicant/Owner: RMV	County: CA
Investigator: RC/AM	State: OR
Do Normal Circumstances exist on the site? Yes No	Community ID:
Is the site significantly disturbed (Atypical Situation)? Yes No	Transect ID:
Is the area a potential Problem Area? Yes No (If needed, explain on reverse.)	Plot ID: 6-W6

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. mustard		FacW	9.		
2. medusa		upl	10.		
3. homus discus		upl	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 33%

Remarks: does not meet

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: — (in.)

Depth to Free Water in Pit: — (in.)

Depth to Saturated Soil: — (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- X Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: Windrange

SOILS

Map Unit Name (Series and Phase): Myford Sandy loam, 9-30%

Drainage Class: moderately well drained

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): Typic Palexeralfs

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
		2.5Y 5/2	w/mottle		Sandy loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes No (Circle)	
Wetland Hydrology Present?	Yes No	
Hydric Soils Present?	Yes No	
Is this Sampling Point Within a Wetland?	Yes No (Circle)	

Remarks: see note on sheet 15

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Cristianitos meadows	Date: 3/24/03
Applicant/Owner: RMV	County: 01
Investigator: JC/AM	State: CA
Do Normal Circumstances exist on the site? (Yes) No	Community ID:
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID:
Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Plot ID: 6-14

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. eleocharis	H	OBL	9.		
2. medicago	H	upl	10.		
3. rotc cor	H	upl	11.		
4. bromus hordeaceus	H	upl	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 25%

Remarks: No persistent hydrophytic veg

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: — (in.)

Depth to Free Water in Pit: — (in.)

Depth to Saturated Soil: to surface (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- X Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:

142

SOILS

Map Unit Name (Series and Phase): Crenela sandy loam 30-75% slope end

Drainage Class: somewhat excessively drained

Field Observations Confirm Mapped Type? (Yes) No

Taxonomy (Subgroup): typic Xerorthents

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
		10YR 6/N			Sandy loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes (No) (Circle)	
Wetland Hydrology Present?	(Yes) No	
Hydric Soils Present?	(Yes) No	
Is this Sampling Point Within a Wetland?	Yes No	(Circle)

Remarks: visit later is seasonal confirmed, very Remarkable upland

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Cristianitos Meadows	Date: 3/24/03
Applicant/Owner:	County: CA
Investigator:	State: OR
Do Normal Circumstances exist on the site? (Yes) No	Community ID:
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID:
Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Plot ID: 6-17

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. mimulus mexicanus	H	FACW	9.		
2. Veratron's macrostachum	H	OBL	10.		
3. Catsear (Hypochaeris glabra)	H	UPL	11.		
4. Filaree (erodium sp)	H	UPL	12.		
5. bromus hordeaceus	H	UPL	13.		
6. medicago	H	UPL	14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 40%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: ___ (in.)

Depth to Free Water in Pit: ___ (in.)

Depth to Saturated Soil: ___ (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- X Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- X Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:

175

SOILS

Map Unit Name (Series and Phase): Myford sandy loam, 9-15% slopes

Drainage Class: moderately well drained

Field Observations Confirm Mapped Type? (Yes) No

Taxonomy (Subgroup): thermic Typic Palexeralfs

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
		10YR 3/2	w/ mottl		loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes (No)	(Circle)
Wetland Hydrology Present?	(Yes) No	
Hydric Soils Present?	(Yes) No	

Is this Sampling Point Within a Wetland? Yes (No) (Circle)

Remarks: visit late in season confirms that veg removed/damaged by upl species

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Constantys Meadows Applicant/Owner: PNV Investigator: JC/AM	Date: 3/21/03 County: State:
Do Normal Circumstances exist on the site? Yes No Is the site significantly disturbed (Atypical Situation)? Yes No Is the area a potential Problem Area? Yes No (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: 6-18

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. medicago		UPL	9.		
2. bromus hordeaceus		UPL	10.		
3. Multiflorum		FACW	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 33%

Remarks: veg on banks only

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: — (in.)

Depth to Free Water in Pit: — (in.)

Depth to Saturated Soil: — (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- X Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- X Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: unvegetated channel - not saturated

175

SOILS

Map Unit Name (Series and Phase): mytford sandy loam 9-15% slopes

Drainage Class: moderately well drained

Field Observations Confirm Mapped Type? (Yes) No

Taxonomy (Subgroup): thermic typic Palexeralfs

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12		10YR 3/3	no mottles		clay loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: soil not saturated even though recent storm event has saturated downstream portion

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes (No)	(Circle)
Wetland Hydrology Present?	(Yes) No	
Hydric Soils Present?	(Yes) No	

Is this Sampling Point Within a Wetland? Yes (No) (Circle)

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Cristianitos canyon	Date: 3/3/03
Applicant/Owner: RMV	County: OR
Investigator: TC/AM	State: CA
Do Normal Circumstances exist on the site? **Yes** No	Community ID:
Is the site significantly disturbed (Atypical Situation)? Yes **No**	Transect ID:
Is the area a potential Problem Area? Yes **No** (If needed, explain on reverse.)	Plot ID: F-4

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. mulefat	S	facw	9.		
2. bromus rubens	H	Upl	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 50%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: — (in.)

Depth to Free Water in Pit: — (in.)

Depth to Saturated Soil: — (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- X Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- X Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: vegetated margin of pond w/ standing water, depression created by berms

142

SOILS

Map Unit Name (Series and Phase): Geneba Sandy loam 30-75% slope eroded

Drainage Class: Somewhat excessively drained

Field Observations Confirm Mapped Type? Yes (No)

Taxonomy (Subgroup): Typic Xerorthents

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-2		5YR 5/3	w/few mottles		clay
2-16		7.5YR 6/3	w/mottles		Sand

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: does not meet, significantly disturbed by mining

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes (No)	(Circle)
Wetland Hydrology Present?	(Yes) No	
Hydric Soils Present?	Yes (No)	

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: does not meet.

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Cristianitos Canyon	Date: 2/19/03
Applicant/Owner: RMV	County: OR
Investigator: LC/TM	State: CA
Do Normal Circumstances exist on the site? **Yes** No	Community ID:
Is the site significantly disturbed (Atypical Situation)? Yes **No**	Transect ID:
Is the area a potential Problem Area? Yes **No** (If needed, explain on reverse.)	Plot ID: 7-11

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. malefat	S	FACW	9.		
2. medicago polymorpha	H	UPL	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 50%

Remarks: does not meet

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: — (in.)

Depth to Free Water in Pit: — (in.)

Depth to Saturated Soil: — (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- X Sediment Deposits
- X Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: although w/in drainage, no saturat. in upper 18" even though recent storm event

134

SOILS

Map Unit Name (Series and Phase): Calleguas clay loam 50-75%

Drainage Class: Well drained

Field Observations Confirm Mapped Type? Yes (No)

Taxonomy (Subgroup): Typic Xerorthents

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12		2.5YR5/2	mottle		loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: lots of fresh sediment

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)

Wetland Hydrology Present? Yes (No)

Hydric Soils Present? (Yes) No

(Circle)

Is this Sampling Point Within a Wetland? Yes (No)

Remarks: does not meet

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Cristianitos Canyon Applic t/Owner: RMV Investigator: TC AM	Date: 2/19/03 County: OR State: CA
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: F12

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Baccharis pilularis	S	upl	9.		
2. Juncus mexicanus	H	FACW	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 50%

Remarks: does not meet

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: — (in.)

Depth to Free Water in Pit: — (in.)

Depth to Saturated Soil: — (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

none

Secondary Indicators (2 or more required):
- X Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: on slump of bank / does not meet

102

SOILS

Map Unit Name (Series and Phase): Alo clay 30-50% slopes

Drainage Class: well drained

Field Observations Confirm Mapped Type? (Yes) No

Taxonomy (Subgroup): Typic Chromoxerepts

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
		10YR 2/1	w/ mottles		clay loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: meets

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? (Yes) No

(Circle)
Is this Sampling Point Within a Wetland? Yes (No)

Remarks: does not meet

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Proje[illegible]: Cristianitos Canyon Appli[illegible]ner: RMV Invest[illegible]: JCJM	Date: 2/19/03 County: OR State: CA
Do N[illegible]al Circumstances e[illegible]? Yes No Is the site significantly disturbe[illegible]ituation)? Yes No Is the area a potential Problem Ar[illegible] Yes No (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: E13

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Juncus mexicanus	H	FACW	9.		
2. Nasella pulchra	H	upl	10.		
3. Scarlet pimpernel	H	upl	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 30%

Remarks: does not meet

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: ___ (in.)

Depth to Free Water in Pit: ___ (in.)

Depth to Saturated Soil: ___ (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

none

Secondary Indicators (2 or more required):
- X Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: on slump in bank

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SOILS

Map Unit Name (Series and Phase): Alocla 30-80% Slope

Class: wetland

Taxonomy (Subgroup): Typic Chromoxerepts

Mapped Type? Yes

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretio Structure, etc.
0-12		10YR 2/1	unmottled		clayey

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- X Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy So
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: none

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No (Circle)

Wetland Hydrology Present? Yes No

Hydric Soils Present? Yes No

Is this Sampling Point Within a Wetland? Yes No (Circle)

Remarks: does not meet

Approved by HQUSACE 3/93

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Cristianitos Canyon Applicant/Owner: RMD Investigator: JG	Date: 8/28/01 County: OR State: CA
Do Normal Circumstances exist on the site? **Yes** No Is the site significantly disturbed (Atypical Situation)? Yes **No** Is the area a potential Problem Area? Yes **No** (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: 7-14

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. [illegible]	H	FACW	9.		
2. [illegible]	H	FACW	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: meets

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: ___ (in.)

Depth to Free Water in Pit: ___ (in.)

Depth to Saturated Soil: ___ (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- X Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- X Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: meets for hydrology (some ponds)

SOILS

Map Unit Name (Series and Phase): Mufood sandy loam 9-30% slope

Drainage Class: moderately well drained

Field Observations Confirm Mapped Type? (Yes) No

Taxonomy (Subgroup): Typic Paleraults

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12		10YR4/6	w/ mottles		

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: met

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes)	No	(Circle)
Wetland Hydrology Present?	(Yes)	No	
Hydric Soils Present?	(Yes)	No	

Is this Sampling Point Within a Wetland? (Circle) (Yes) No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Roadgap Applicant/Owner: RMV Investigator: JC/SY	Date: 11/9/01 County: Orange State: CA
Do Normal Circumstances exist on the site? Yes (circled) No Is the site significantly disturbed (Atypical Situation)? Yes (circled) No Is the area a potential Problem Area? Yes (circled) No (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: R10-1

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. mulefat	S	FACW	9.		
2. blackwillow	T	OBL	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks: meets

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: — (in.)

Depth to Free Water in Pit: 13 (in.)

Depth to Saturated Soil: 10 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- X Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: depressional area adj to creek

SOILS

Map Unit Name (Series and Phase): Chino silty clay loam, drained

Drainage Class: somewhat poorly drained

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): aquic Haploxerolls

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
1-0	O	litter layer			
0-9				many distinct	med sand
9-16					gleyed sand

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

		(Circle)
Hydrophytic Vegetation Present?	Yes	No
Wetland Hydrology Present?	Yes	No
Hydric Soils Present?	Yes	No

Is this Sampling Point Within a Wetland? (Circle) Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Beadgap Applicant/Owner: RMW Investigator: TC/SY	Date: 11/9/01 County: OR State: CA
Do Normal Circumstances exist on the site? Yes (No) Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: P-10-2

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Bromus diandrus	H	upl	9.		
2. Ambrosia psilostachya	H	fac	10.		
3. picris echoides	H	fac	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 66%

Remarks: meet

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
X No Recorded Data Available

Field Observations:

Depth of Surface Water: ___ (in.)

Depth to Free Water in Pit: ___ (in.)

Depth to Saturated Soil: ___ (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
X Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: adj to Gelk

SOILS

Map Unit Name (Series and Phase): Chino silty clay loam drained

Drainage Class: somewhat poorly drained

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): aquic Haploxerolls

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: compact fill - nonhydric

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No (Circle)
Wetland Hydrology Present?	Yes	No
Hydric Soils Present?	Yes	No

(Circle)

Is this Sampling Point Within a Wetland? Yes No

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Roodgap Applicant/Owner: RMW Investigator: TC/SF	Date: 11/9/01 County: OR State: CT
Do Normal Circumstances exist on the site? Yes (circled) No Is the site significantly disturbed (Atypical Situation)? Yes No (circled) Is the area a potential Problem Area? Yes No (circled) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: RW-3

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Cattail (Typha angustifolia)	H	OBL	9.		
2. Salix lasiolepis	T	FACW	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: Meet

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: ___ (in.)

Depth to Free Water in Pit: ___ (in.)

Depth to Saturated Soil: ___ (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- X Sediment Deposits
- X Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: adj to creek

SOILS

Map Unit Name (Series and Phase): Chino Silty clay loam drained

Drainage Class: somewhat poorly drained

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): aquic Haploxerolls

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-4		2.5Y 4/2	10YR5/8	Common prominent	fine Granular loam medium sand

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No (Circle)
Wetland Hydrology Present? Yes No
Hydric Soils Present? Yes No

(Circle)
Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Roadgaps	Date: 11/9/01
Applicant/Owner: RMP	County: OR
Investigator: ICS/SK	State: CA
Do Normal Circumstances exist on the site? Yes ~~No~~	Community ID:
Is the site significantly disturbed (Atypical Situation)? Yes No	Transect ID:
Is the area a potential Problem Area? Yes No (If needed, explain on reverse.)	Plot ID: P-10-11

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Lolium multiflorum	H	fac	9.		
2. Persicaria	H	fac	10.		
3. Cynodon dactylon	H	fac	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: met

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
X No Recorded Data Available

Field Observations:

Depth of Surface Water: ___ (in.)

Depth to Free Water in Pit: ___ (in.)

Depth to Saturated Soil: ___ (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
X Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: dry to wet

SOILS

Map Unit Name (Series and Phase): Chino silty clay loam drained

Drainage Class: somewhat poorly drained

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): aquic Haploxerolls

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-6		2.5Y4/2	none		
6-12	compact				

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: does not meet

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No	(Circle)
Wetland Hydrology Present?	Yes	No	
Hydric Soils Present?	Yes	No	

(Circle)

Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Rood gaps Applicant/Owner: RMV Investigator: TC/SP	Date: 11/9/01 County: Ma State: CA
Do Normal Circumstances exist on the site? Yes No Is the site significantly disturbed (Atypical Situation)? Yes No Is the area a potential Problem Area? Yes No (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: P10-5

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. baccharis salicifolia	S	facW	9.		
2. salix lasiolepis	T	FacW	10.		
3. typha domingensis	H	OBL	11.		
4. ambrosia psilostachya	H	fac	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: meet

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: ___ (in.)

Depth to Free Water in Pit: ___ (in.)

Depth to Saturated Soil: ___ (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- X Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: adj to creek

SOILS

Map Unit Name (Series and Phase): Chinosilty clay loam, drained

Drainage Class: somewhat poorly drained

Field Observations Confirm Mapped Type? (Yes) No

Taxonomy (Subgroup): aquic Hapludolls

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-3		2.5Y 5/3			silt loam
3-12				common faint	med sand
12-16		5Y 4/1		few prominent	silt loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes) No	(Circle)
Wetland Hydrology Present?	(Yes) No	
Hydric Soils Present?	(Yes) No	

(Circle)

Is this Sampling Point Within a Wetland? (Yes) No

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Roodgap Applicant/Owner: RMV Investigator: TC/SP	Date: 11/9/01 County: GR State: CA
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: RW-6

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Carex praegracilis	H	facW	9.		
2. Juncus xiphioides	H	OBL	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: meet

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
X No Recorded Data Available

Field Observations:

Depth of Surface Water: — (in.)

Depth to Free Water in Pit: — (in.)

Depth to Saturated Soil: — (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
X Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: adj/within creek

SOILS

Map Unit Name (Series and Phase): Chino silty clay loam, drained

Drainage Class: somewhat poorly drained

Field Observations Confirm Mapped Type? (Yes) No

Taxonomy (Subgroup): Aquic Haploxerolls

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-11		2.5Y 3/1		Common faint	Sandy loam
11-16		2.5Y 5/1		Common distinct	Sandy loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or (Low-Chroma) Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? (Yes) No

(Circle)
Is this Sampling Point Within a Wetland? (Yes) No

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Road gaps Applicant/Owner: RMV Investigator: IC/SF	Date: 11/9/01 County: OR State: CA
Do Normal Circumstances exist on the site? Yes ~~No~~ Is the site significantly disturbed (Atypical Situation)? Yes ~~No~~ Is the area a potential Problem Area? Yes ~~No~~ (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: R10-7

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Ambrosia psilostachya	H	fac	9.		
2. Carex praecacilis	H	facw	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: meets

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: ___ (in.)

Depth to Free Water in Pit: ___ (in.)

Depth to Saturated Soil: ___ (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- X Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: adj to creek

SOILS

Map Unit Name (Series and Phase): Chino Silty clay loam, drained

Drainage Class: somewhat poorly drained

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): aquic Haploxerolls

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12		2.5Y 3/1		Common faint	Sandy loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ✓ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No (Circle)
Wetland Hydrology Present?	Yes	No
Hydric Soils Present?	Yes	No

(Circle)

Is this Sampling Point Within a Wetland? Yes No

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Koodgaps	Date: 11/9/01
Applicant/Owner: RMV J1	County: OR
Investigator: TC/SY	State: CA
Do Normal Circumstances exist on the site? Yes (circled) No	Community ID:
Is the site significantly disturbed (Atypical Situation)? Yes No (circled)	Transect ID:
Is the area a potential Problem Area? Yes No (circled) (If needed, explain on reverse.)	Plot ID: R10-8

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. bromus diandrus	H	upl	9.		
2. ambrosia psilostachya	H	fac	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 50%

Remarks: does not meet

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: ___ (in.)

Depth to Free Water in Pit: ___ (in.)

Depth to Saturated Soil: ___ (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- X Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: adj to creek

SOILS

Map Unit Name (Series and Phase): Chino silty clay loam, drained

Drainage Class: somewhat poorly drained

Field Observations Confirm Mapped Type? (Yes) No

Taxonomy (Subgroup): Aquic Haploxerolls

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-6		2.5 Y 4/2	none		
6-12		Compact			

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: does not meet

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? Yes (No)

(Circle)
Is this Sampling Point Within a Wetland? Yes (No)

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Roadgaps Applicant/Owner: RMV Investigator: TC/SY	Date: 11/9/01 County: OR State: CA
Do Normal Circumstances exist on the site? **Yes** No Is the site significantly disturbed (Atypical Situation)? Yes **No** Is the area a potential Problem Area? Yes **No** (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: R10-9

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. cynodondactylon	H	fac	9.		
2. juncus xiphioides	↑	OBL	10.		
3. eleocharis macrostachya		OBL	11.		
4. juncus mexicanus	Y	facW	12.		
5. picris echioides	H	fac	13.		
6. baccharis salicifolia	S	facW	14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: meet

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
X No Recorded Data Available

Field Observations:

Depth of Surface Water: 1/2 (in.)

Depth to Free Water in Pit: — (in.)

Depth to Saturated Soil: 6 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
X Inundated
X Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name (Series and Phase): Chino Silty clay loam, drained

Drainage Class: Somewhat poorly drained

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): aquic Haploxerolls

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.

Hydric Soil Indicators:

- ___ Histosol
- X Histic Epipedon
- X Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: gley sandy soil

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No	(Circle)
Wetland Hydrology Present?	Yes	No	
Hydric Soils Present?	Yes	No	

(Circle)

Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Road gaps Applicant/Owner: RMT Investigator: TC/SY	Date: 11/9/01 County: OR State: CA
Do Normal Circumstances exist on the site? Yes (circled) No Is the site significantly disturbed (Atypical Situation)? Yes No (circled) Is the area a potential Problem Area? Yes No (circled) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: R10-10

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. baccharis salicifolia	S	FACW	9.		
2. Phragmites australis		OBL	10.		
3. Salix lasiolepis		FACW	11.		
4. Carex praegracilis		FACW	12.		
5. Cirsium vulgare		FAC	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: meets

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
X No Recorded Data Available

Field Observations:

Depth of Surface Water: — (in.)

Depth to Free Water in Pit: — (in.)

Depth to Saturated Soil: — (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
X Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: w/in drainage floodplain

SOILS

Map Unit Name (Series and Phase): Chino Silty clay loam, drained

Drainage Class: somewhat poorly drained

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): Aquic Haploxerolls

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-9		2.5Y 5/2		faint	fine sandy loam
9-16		2.5Y 3/1			loamy sand

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: met

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes No	(Circle)
Wetland Hydrology Present?	Yes No	
Hydric Soils Present?	Yes No	

(Circle)

Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Road Gap Applicant/Owner: RMV Investigator: TC/SY	Date: 11/9/01 County: [illegible] State: PA
Do Normal Circumstances exist on the site? Yes (No) Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: R10-11

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. polypodium polypodioides	H	FACW	9.		
2. baccharis salicifolia	S	FACW	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: meet

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: ___ (in.)

Depth to Free Water in Pit: ___ (in.)

Depth to Saturated Soil: ___ (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- X Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: adj to creek

SOILS

Map Unit Name (Series and Phase): Chinosilty clay loam, drained

Drainage Class: somewhat poorly drained

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): aquic halpoxeralfs

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-4		2.5Y 4/2	none		
4-6					med sand

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: does not meet

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No (Circle)
Wetland Hydrology Present? Yes No
Hydric Soils Present? Yes No

(Circle)
Is this Sampling Point Within a Wetland? Yes No

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: RMV/ GOBernadora Applicant/Owner: RMV Investigator: TTSonKamp	Date: 3-8-03 County: State:
Do Normal Circumstances exist on the site? Yes (circled) No Is the site significantly disturbed (Atypical Situation)? Yes (circled) No Is the area a potential Problem Area? Yes (circled) No (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: TB6

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Salix lasiolepis	T	FACW	9.		
2. Picris echioides	H	FAC*	10.		
3. Eleocharis Macro.	H	OBL	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
X No Recorded Data Available

Field Observations:

Depth of Surface Water: — (in.)
Depth to Free Water in Pit: 8" (in.)
Depth to Saturated Soil: 7" (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
X Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
X Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks:

1/6

SOILS

Map Unit Name (Series and Phase): Capistrano Sandy loam, 9615 2 slops

Drainage Class: well drained

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): Entic Haploxeroll

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-2		Sandy			
2-10		10YR 3/1	7.5YR 4/6		

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: meets

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No (Circle)
Wetland Hydrology Present? Yes No
Hydric Soils Present? Yes No

(Circle)
Is this Sampling Point Within a Wetland? Yes No

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

outside study area

Project/Site: RMV Gridermadora	Date: 3-8-03
Applicant/Owner: RMV	County: ~~OR~~ CA
Investigator: TBlomkamp	State:
Do Normal Circumstances exist on the site? **Yes** No	Community ID: Slope wetland
Is the site significantly disturbed (Atypical Situation)? Yes **No**	Transect ID:
Is the area a potential Problem Area? Yes **No**	Plot ID: ~~TB-15~~ PO-17
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Berula erecta	H	OBL	9.		
2. Rorippa nasturtium-aquaticum	H	OBL	10.		
3. Scirpus americanus	H		11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). _____

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: at surface (in.)

Depth to Free Water in Pit: 1' (in.)

Depth to Saturated Soil: 1' (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- X Inundated
- X Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:

146

SOILS

Map Unit Name (Series and Phase): Conralitos loamy sand

Drainage Class: somewhat poorly drained

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): Typic Xerofluvents

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
strong Sulfidic odor					
		no	Pit		

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- X Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes No (Circle)	
Wetland Hydrology Present?	Yes No	
Hydric Soils Present?	Yes No	
Is this Sampling Point Within a Wetland?	Yes No (Circle)	

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Roadgap's	Date: 8/15/01
Applicant/Owner: RMV	County: OR
Investigator: PS/TC	State: CA
Do Normal Circumstances exist on the site? (Yes) No	Community ID:
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID:
Is the area a potential Problem Area? Yes (No)	Plot ID: P-18
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Typha dominensis	H	OBL	9.		
2. Paspalum distichum	H	OBL	10.		
3. Ludwigia peploides	H	OBL	11.		
4. Veronica arvensis	H	OBL	12.		
5. Salix laseolepis	S	FACW	13.		
6. Rorippa nasturtium-aquatic	H	OBL	14.		
7. Bidens laevis	H	OBL	15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: meets

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: 0 (in.)

Depth to Free Water in Pit: 3 (in.)

Depth to Saturated Soil: to surface (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- X Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- X Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: meet

SOILS

Map Unit Name (Series and Phase): Riverwash

Drainage Class: Well

Field Observations Confirm Mapped Type? (Yes) No

Taxonomy (Subgroup):

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-16		Gley 1 pg 3/N			Coarse Sand

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- X Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: meets

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? (Yes) No

(Circle)
Is this Sampling Point Within a Wetland? (Yes) No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Road Gap	Date: 8/30/03
Applicant/Owner: BMV	County: OR
Investigator: ICYDM	State: CA
Do Normal Circumstances exist on the site? (Yes) No	Community ID:
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID:
Is the area a potential Problem Area? Yes (No)	Plot ID:
(If needed, explain on reverse.)	

10-26

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. arroyo willow	S	FACW	9.		
2. mulefat	S	FACW	10.		
3. cattails	H	OBL	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: Rotalin inundated channel

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: 1" (in.)

Depth to Free Water in Pit: — (in.)

Depth to Saturated Soil: 4" (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- X Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: Restricted to immediate banks + channel - well incised 1-2'

287

SOILS

Map Unit Name (Series and Phase): Sorrento Loam 2 to 9% Slopes

Drainage Class: well drained

Taxonomy (Subgroup): Calcic Haploxerolls

Field Observations Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- X Other (Explain in Remarks)

Remarks: observed to be ponded 7 2 weeks

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No	(Circle)
Wetland Hydrology Present?	Yes	No	
Hydric Soils Present?	Yes	No	

(Circle)

Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Road Gaps Applicant/Owner: RMV Investigator: IC/DM	Date: May 30, 2003 County: OR State: CA
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: P27

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. picris echoides	H	Fac	9.		
2. baccharis pilularis	S	UPL	10.		
3. baccharis sarcofolia	S	FACW	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 66%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: ___ (in.)

Depth to Free Water in Pit: ___ (in.)

Depth to Saturated Soil: ___ (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- X Drift Lines
- X Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: signs of surface flow, however soil in pit was not damp and was very loamy — seems well drained — terrace adj to incised low flow channel w/ flowing water / only margins are saturated in upper 12"

SOILS

Map Unit Name (Series and Phase): Callegus Clay loam 50-75% slope Eroded

Drainage Class: well drained

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): Typic Xerorthents

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-16		10YR 6/3	none		loamy
16+		2.5YR 3/2	none		loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No (Circle)
Wetland Hydrology Present?	Yes	No
Hydric Soils Present?	Yes	No

(Circle)

Is this Sampling Point Within a Wetland? Yes No

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Road gaps
Applicant/Owner: RMV
Investigator: TC/CS

Date: 7/9/03
County:
State:

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID: 28
Transect ID:
Plot ID: 10

10-28

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. cottonwillow	T	FACW	9.		
2. Red willow	T	FACW	10.		
3. mugwort	H	FACW	11.		
4. cattail	H	OBL	12.		
5. epilobium ciliatum	H	FACW	13.		
6. Deschampsia cespitosa	H	OBL	14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
X No Recorded Data Available

Field Observations:

Depth of Surface Water: 1.0 (in.)
Depth to Free Water in Pit: to surface (in.)
Depth to Saturated Soil: to surface (in.)

Wetland Hydrology Indicators:
Primary Indicators:
X Inundated
X Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: wet

SOILS

Map Unit Name (Series and Phase): Riverwash

Drainage Class: Well

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup):

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- X Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: Inundated > 7 days

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No (Circle)
Wetland Hydrology Present?	Yes	No
Hydric Soils Present?	Yes	No

(Circle)

Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Roadapple Applicant/Owner: RWQ Investigator: TC/CS	Date: 7/9/03 County: OR State: CA
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: 29 Transect ID: 10-F Plot ID:

10-29

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Arroyo willow	T	facW	9.		
2. Red willow	T	facW	10.		
3. Toxicodendron diversilobum	H	upl	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 66%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
X No Recorded Data Available

Field Observations:

Depth of Surface Water: ___ (in.)

Depth to Free Water in Pit: ___ (in.)

Depth to Saturated Soil: ___ (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

→ none

Remarks: none

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SOILS

Map Unit Name (Series and Phase): Coma Hot loamy sand, moderately fine substratum somewhat excessively drained

Drainage Class:

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): Typic Xerorthents

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-18	hyl chroma sand				

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: Sandy soils, with enough silt to color but no mottle (hyl chroma)

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No (Circle)
Wetland Hydrology Present?	Yes	No
Hydric Soils Present?	Yes	No

(Circle)

Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: FTC South tributary to drainage
Applicant/Owner: TCA
Investigator: T Bimkamp / L Chiu

Date: 7/9/01
County: Orange
State: CA

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? Yes No
(If needed, explain on reverse.)

Community ID: 7-Seep 1
Transect ID:
Plot ID: 7001

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. Distichlis spicata	h	FACW
2. ambrosia psilostachya	h	Fac
3. lolium multiflorum	h	UPL
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 66%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
X No Recorded Data Available

Field Observations:

Depth of Surface Water: 0 (in.)

Depth to Free Water in Pit: 0 (in.)

Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
X Sediment Deposits
X Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
X Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name (Series and Phase): Calleguas clay loam

Drainage Class: well drained

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): Entic Haploxerolls

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
		10YR 3/2	10YR 4/6	Many	

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors w/Redox features
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soil
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No (Circle)
Wetland Hydrology Present?	Yes	No
Hydric Soils Present?	Yes	No

(Circ

Is this Sampling Point Within a Wetland? Yes

Remarks:

Approved by HQUSACE 3/

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Foothill Corridor FTC South – Drainage plant
Applicant/Owner: TCA
Investigator: T Bomkamp / T. Chiwo

Date: 7/9/01
County: Orange
State: CA

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID: 7-1
Transect ID:
Plot ID: 3DP2

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Salix lasiolepis	tree	FACW	9.		
2. bromus diandrus	herb	UPL	10.		
3. Carduus pycnocephalus	herb	UPL	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 33%

Remarks: does not meet for vegetation

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
X No Recorded Data Available

Field Observations:

Depth of Surface Water: 0 (in.)
Depth to Free Water in Pit: 0 (in.)
Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
X Sediment Deposits
X Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name (Series and Phase): Botella loam 2-9% slopes

Drainage Class: well drained

Taxonomy (Subgroup): Pachic Argixerolls

Field Observations Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12		10YR 2/1	10YR 5/6	many/distinct	

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors w/redox features
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: predominantly mottles in sandy layers

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? (Yes) No

(Circle)
Is this Sampling Point Within a Wetland? Yes (No)

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: San Juan Creek (Stop 2)	Date: 8/15/01
Applicant/Owner:	County:
Investigator: PSAIC	State:

Do Normal Circumstances exist on the site?	Yes	No	Community ID: San Juan creek
Is the site significantly disturbed (Atypical Situation)?	Yes	No	Transect ID:
Is the area a potential Problem Area? (If needed, explain on reverse.)	Yes	No	Plot ID: 70P3

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. typha domingensis	H	OBL	9.		
2. paspalum distichum	H	OBL	10.		
3. ludwigia peploides	H	OBL	11.		
4. veronica anagallis aquatica	H	OBL	12.		
5. Salix lasiolepis	S	FACW	13.		
6. Rorippa nasturtium-aquaticum	H	OBL	14.		
7. Bidens laevis	H	OBL	15.		
8.			16.		

yellow water speedwell watercress

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: meets for hydrophytic vegetation

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: 0 (in.)

Depth to Free Water in Pit: 3 (in.)

Depth to Saturated Soil: 4 surface (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- X Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- X Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: meets for hydrology

SOILS

Map Unit Name (Series and Phase): Riverwash

Drainage Class: _____

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): _____

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-16	A	3/N	0	0	Sand

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- X Sulfidic Odor
- X Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: mud flat soils

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No (Circle)
Wetland Hydrology Present?	Yes	No
Hydric Soils Present?	Yes	No

Is this Sampling Point Within a Wetland? Yes No (Circle)

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: FTC-S 7(4)(6)
Applicant/Owner: TCA
Investigator: JC, JC, SFA

Date: 7/26/01
County: Orange
State: CA

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID: 7-Sep 3
Transect ID:
Plot ID: 7OPS

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Polypogon monspeliensis	H	FACW+	9.		
2. Picris echioides	H	FAC	10.		
3. Juncus mexicanus	H	FACW	11.		
4. ~~Isocoma menziesii~~	~~S~~		12.		
5. Cynodon dactylon	H	FAC	13.		
6. Baccharis salicifolia	S	FACW-	14.		
7. ~~[illegible]~~			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: Isocoma occurs right on edge of bank, so questionable if w/in wetlands.

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
X No Recorded Data Available

Field Observations:

Depth of Surface Water: none (in.)
Depth to Free Water in Pit: none (in.)
Depth to Saturated Soil: none (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits possibly
X Drainage Patterns in Wetlands (in drainage)
Secondary Indicators (2 or more required):
X Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: occurs w/in a drainage

SOILS

Map Unit Name (Series and Phase): A10 clay 30 to 50% slope

Drainage Class: well drained

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): typic Chromoxererts

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
1-12"	A	5Y 2.5/1 (wet)	2.5YR 4/6 (wet)	5% mottles	silty clay

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- [X] Gleyed or Low-Chroma Colors w/Redox features
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: No discernible O horizon

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No (Circle)
Wetland Hydrology Present?	Yes	No
Hydric Soils Present?	Yes	No

(Circle)

Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: ~~FTC~~ FTC-S Applicant/Owner: JCA 7(4)7 Investigator: JC, JC, SFA	Date: 7/26/01 County: Orange State: CA
Do Normal Circumstances exist on the site? **Yes** No Is the site significantly disturbed (Atypical Situation)? Yes **No** Is the area a potential Problem Area? Yes **No** (If needed, explain on reverse.)	Community ID: 7-11 Transect ID: Plot ID: 7OP6

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Polypogon monspeliensis	H	FACWH	9.		
2. Baccharis salicifolia	S (present only)	FACW-	10.		
3. Paspalum distichum	H	OBL	11.		
4. Veronica sp. (<20% cover)	H	OBL	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: 1 (in.)

Depth to Free Water in Pit: ___ (in.)

Depth to Saturated Soil: Ø (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- X Inundated
- X Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- X Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name (Series and Phase): Alo clay 30 to 50% slope

Drainage Class: well drained

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): typic Chromoxerents

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-10"	A	5Y 4/1 (wet)	5YR 4/6 (wet)	15%	silty clay gleying
10-12"	B?				silty clay gleying oxidized root channel
	↳ looks sandier, but may be same layer				

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No	(Circle)
Wetland Hydrology Present?	Yes	No	
Hydric Soils Present?	Yes	No	

Is this Sampling Point Within a Wetland? (Circle) Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: FTC South
Applicant/Owner: FTA
Investigator: TCJ/TCP

Date: 7-24-01
County:
State:

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? Yes No
(If needed, explain on reverse.)

Community ID: 7(4)3 (a) 7-13 Wetland W3a
Transect ID:
Plot ID: TOP7

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1.			9.		
2. Lolium multiflorum	Fac		10.		
3. Cocklebur xanthium strumarium	fac		11.		
4. Sattans satiuts spicata	FacW		12.		
5. Ragweed Ambrosia psilostachya	fac		13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: meets for veg

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
X No Recorded Data Available

Field Observations:

Depth of Surface Water: 0 (in.)
Depth to Free Water in Pit: 0 (in.)
Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
X Drainage Patterns in Wetlands
None
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: meets for hydrology

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____
Field Observations
Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
~~1-12"~~	~~A~~	~~5YR 2.5/1~~ (wet)	~~2.5YR 4/6~~	~~5% mottles~~	

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: ~~No discernible O horizon~~ hyd chroma no mottles nonhydric soils high chroma

mapping soil Rock outcrop

unpt 30-75% field does not confirm map type

taxonomy Typic Aquiralfs

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No (Circle)
Wetland Hydrology Present? Yes No
Hydric Soils Present? Yes No

Is this Sampling Point Within a Wetland? (Circle) Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: FTC
Applicant/Owner: TCA
Investigator: Chling, Austin

Date: 7/31
County: OR
State: CA

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID: 7(6)1 [7-14]
Transect ID:
Plot ID: TOP 8

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Salt grass distichlis spicata	FACW		9.		
2. Polygonum multiflorum	FAC		10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-).

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: 0 (in.)

Depth to Free Water in Pit: 0 (in.)

Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- X Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: w/in a drainage

SOILS

Map Unit Name (Series and Phase): Sopper Rock outcrop complex 30-75% slope

Drainage Class: _____

Field Observations Confirm Mapped Type? Yes (No)

Taxonomy (Subgroup): Typic Aquiturbels

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
12"		2.5Y 3/1	none		silty clay

Hydric Soil Indicators:

borderline

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: some oxidized ~~not~~ channels in upper layers, possible gleying – 5Y 2.5/1

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes) No	(Circle)
Wetland Hydrology Present?	(Yes) No	
Hydric Soils Present?	(Yes) No	

(Circle)

Is this Sampling Point Within a Wetland? (Yes) No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: 7(6)-4-FPC Applicant/Owner: TCA Investigator: JC/EG	Date: 8/6/01 County: OR State: CA
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: 7(6)4 7-17 Transect ID: mp6 Plot ID: 7-OP-12

on slide area south of

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Salix lasiolepis	Shrub	FACW	9.		
2. Baccharis salicifolia	Shrub	FACW	10.		
3. Artemisia californica	Shrub	Upland	11.		
4. Avena sp.	Herb	Upland	12.		
5. Bromus hordeaceus	Herb	Upland	13.		
6. Salix goddingi	Tree	OBL	14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 50%

Remarks: does not meet for hydrophytic plants

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: 0 (in.)

Depth to Free Water in Pit: 0 (in.)

Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ✓ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name (Series and Phase): Soper-Rock outcrop complex 30 to 85% slope

Drainage Class: _____

Field Observations Confirm Mapped Type? Yes (No)

Taxonomy (Subgroup): Typic Aquarents

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-4	A	10R-3/2	10R 4/4	30%	Clay loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes (No)	(Circle)
Wetland Hydrology Present?	Yes (No)	
Hydric Soils Present?	(Yes) No	

(Circle)

Is this Sampling Point Within a Wetland? Yes (No)

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: FTG
Applicant/Owner: TCA
Investigator: PS, JC

Date: 8/3/01
County: OR
State: OR

Do Normal Circumstances exist on the site? Yes (No)
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID: alkali sie
Transect ID: mapl
Plot ID: FEOP-1

FEOP 1 / FEF

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. ambrosia psilostachya	herb	Fac	9.		
2. distichalis	herb	FacW	10.		
3. mustard brassica nigra	herb	upl	11.		
4. prickly pear opuntia	herb	upl	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 50%

Remarks: does not meet for hydrophytes

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
X No Recorded Data Available

Field Observations:

Depth of Surface Water: 0 (in.)
Depth to Free Water in Pit: 0 (in.)
Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
X Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name (Series and Phase): Capistrano Sandy Loam 2-9% slopes

Drainage Class: well drained

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): Entic Haploxerols

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-8	A	10YR 3/2	none		sandy loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: does not meet for hydric soils

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No (Circle)
Wetland Hydrology Present?	Yes	No
Hydric Soils Present?	Yes	No

(Circle)

Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: FTC
Applicant/Owner: TCA
Investigator: JCDS

Date: 8/3/01
County: OR
State: ORB

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID: 2 FE Seep 1 FE7-2
Transect ID: map 1 alkali seep 7b
Plot ID: 7/FEOR2

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. mule fat	shrub	FACW	9.		
2. Cornus sericea	shrub	UPL	10.		
3. Scirpus americanus	herb	OBL	11.		
4. Juncus mexicanus	herb	FACW	12.		
5. Yerba mansa (Anemopsis californica)	herb	OBL	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 60%

Remarks: hydrophytic veg present

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
___ No Recorded Data Available

Field Observations:

Depth of Surface Water: at surface (in.)
Depth to Free Water in Pit: 0 (in.)
Depth to Saturated Soil: 12 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
X Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: hydrology present

SOILS

Map Unit Name (Series and Phase): Capistrano Sandy Loam 2-9% slope

Drainage Class: well drained

Field Observations Confirm Mapped Type? (Yes) No

Taxonomy (Subgroup): Entic Haploxerolls

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-4	A	2.5Y 2.5/1	none	none	Sandy loam
4-12	B	5Y 4/2	none	none	sandy loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors (upper horizon)
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes) No	(Circle)
Wetland Hydrology Present?	(Yes) No	
Hydric Soils Present?	(Yes) No	

Is this Sampling Point Within a Wetland? (Circle) (Yes) No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: FTC South tributary to drainage
Applicant/Owner: TCA
Investigator: T Bumkamp, L Chiup

Date: 7/9/01
County: Orange
State: CA

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? Yes No
(If needed, explain on reverse.)

Community ID: 7-Seep 1
Transect ID:
Plot ID: 7001

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Distichlis spicata	h	FACW	9.		
2. ambrosia psilostachya	h	Fac	10.		
3. lolium multiflorum	h	UPL	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 61%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
X No Recorded Data Available

Field Observations:

Depth of Surface Water: 0 (in.)

Depth to Free Water in Pit: 0 (in.)

Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
X Sediment Deposits
X Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
X Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name (Series and Phase): Calleguas clay loam

Drainage Class: well drained

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): Entic Haploxerolls

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
		10YR 3/2	10YR 4/6	Many	

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors w/Redox features
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soil
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No (Circle)
Wetland Hydrology Present? Yes No
Hydric Soils Present? Yes No

(Circ

Is this Sampling Point Within a Wetland? Yes

Remarks:

Approved by HQUSACE 3/

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Foothill Corridor FTC South – Drainage above plant
Applicant/Owner: TCA
Investigator: T Bomkamp / T. Chiang

Date: 7/9/01
County: Orange
State: CA

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID: 7-1
Transect ID:
Plot ID: 7DP2

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Salix lasiolepis	tree	FACW	9.		
2. Bromus diandrus	herb	UPL	10.		
3. Cardunus pycnocephalus	herb	UPL	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 33%

Remarks: does not meet for vegetation

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
X No Recorded Data Available

Field Observations:

Depth of Surface Water: 0 (in.)
Depth to Free Water in Pit: 0 (in.)
Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
X Sediment Deposits
X Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name (Series and Phase): Botella loam 2-9% slopes

Drainage Class: Well drained

Taxonomy (Subgroup): Pachic Argixerolls

Field Observations Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12		10YR 2/1	10YR 5/6	many / distinct	

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- X Reducing Conditions
- X Gleyed or Low-Chroma Colors w/ redox features
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: predominantly of mottles in sandy layers

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes (No) (Circle)	
Wetland Hydrology Present?	(Yes) No	
Hydric Soils Present?	(Yes) No	
		Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: San Juan Creek (Stmp 2) Applicant/Owner: Investigator: PSAC	Date: 8/15/01 County: State:
Do Normal Circumstances exist on the site? Yes No Is the site significantly disturbed (Atypical Situation)? Yes No Is the area a potential Problem Area? Yes No (If needed, explain on reverse.)	Community ID: San Juan creek Transect ID: Plot ID: 70P3

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. typha domingensis	H	OBL	9.		
2. paspalum distichum	H	OBL	10.		
3. ludwigia peploides	H	OBL	11.		
4. veronica anagallis-aquatica		OBL	12.		
5. Salix lasiolepis	S	FACW	13.		
6. Rorippa nasturtium-aquaticum	H	OBL	14.		
7. Bidens laevis	H	OBL	15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: meets for hydrophytic vegetation

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: 0 (in.)

Depth to Free Water in Pit: 3 (in.)

Depth to Saturated Soil: 4 surface (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- X Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- X Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: meets for hydrology

SOILS

Map Unit Name (Series and Phase): Riverwash

Drainage Class: _____

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): _____

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-16	A	3/N	0	0	Sand

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- X Sulfidic Odor
- X Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: muck for soils

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No	(Circle)
Wetland Hydrology Present?	Yes	No	
Hydric Soils Present?	Yes	No	

Is this Sampling Point Within a Wetland? (Circle) Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: FTC-S 7(4)6
Applicant/Owner: ICA
Investigator: JC, JC, SFA

Date: 7/26/01
County: Orange
State: CA

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID: 7-Sep 3
Transect ID: 1
Plot ID: 7OPS

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Polygonum monspeliensis	H	FACW+	9.		
2. Picris echioides	H	FAC	10.		
3. Juncus mexicanus	H	FACW	11.		
4. ~~Isocoma menziesii~~	~~S~~		12.		
5. Cynodon dactylon	H	FAC	13.		
6. Baccharis salicifolia	S	FACW-	14.		
7. ~~[illegible]~~			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: Isocoma occurs right on edge of bank, so questionable if w/in wetlands.

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
X No Recorded Data Available

Field Observations:

Depth of Surface Water: none (in.)
Depth to Free Water in Pit: none (in.)
Depth to Saturated Soil: none (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
X Drainage Patterns in Wetlands (possibly in a drainage)
Secondary Indicators (2 or more required):
X Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: occurs w/in a drainage

SOILS

Map Unit Name (Series and Phase): A10 clay 30 to 50% slope

Drainage Class: well drained

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): typic Chromoxererts

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
1-12"	A	5Y 2.5/1 (wet)	2.5YR 4/6 (wet)	5% mottles	silty clay

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors w/Redox features
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: No discernible O horizon

WETLAND DETERMINATION

		(Circle)
Hydrophytic Vegetation Present?	Yes	No
Wetland Hydrology Present?	Yes	No
Hydric Soils Present?	Yes	No

Is this Sampling Point Within a Wetland? (Circle) Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: FTC-S Applicant/Owner: TCA 7(4)7 Investigator: JC, JC, SFA	Date: 7/26/01 County: Orange State: CA
Do Normal Circumstances exist on the site? **Yes** No Is the site significantly disturbed (Atypical Situation)? Yes **No** Is the area a potential Problem Area? Yes **No** (If needed, explain on reverse.)	Community ID: 7-11 Transect ID: Plot ID: 7OP6

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Polypogon monspeliensis	H	FACW+	9.		
2. Baccharis salicifolia	S (project only)	FACW-	10.		
3. Paspalum distichum	H	OBL	11.		
4. Veronica sp. (<20% cover)	H	OBL	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: 1 (in.)

Depth to Free Water in Pit: ___ (in.)

Depth to Saturated Soil: Ø (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- X Inundated
- X Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- X Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name (Series and Phase): alo clay 30 to 50% slope

Drainage Class: well drained

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): typic Chromoxerents

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-10"	A	5Y 4/1 (wet)	5YR 4/6 (wet)	15%	silty clay gleying
10-12"	B?				silty clay gleying oxidized root channels
	↳ looks sandier, but may be same layer				

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No (Circle)
Wetland Hydrology Present?	Yes	No
Hydric Soils Present?	Yes	No

(Circle)

Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: FTC South Applicant/Owner: FTA Investigator: TCJ/CD	Date: 7-24-01 County: State:
Do Normal Circumstances exist on the site? **Yes** No Is the site significantly disturbed (Atypical Situation)? Yes **No** Is the area a potential Problem Area? Yes No (If needed, explain on reverse.)	Community ID: 7(4)3 (7-13 Cypress Gum Swamp W3a) Transect ID: Plot ID: 70P7

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1.			9.		
2. Lolium multiflorum		Fac	10.		
3. Cocklebur Xanthium strumarium		fac	11.		
4. Saltgrass Distichlis spicata		FacW	12.		
5. Ragweed Ambrosia psilostachya		fac	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: meets for veg

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: 0 (in.)

Depth to Free Water in Pit: 0 (in.)

Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- X Drainage Patterns in Wetlands

None

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: meets for hydrology

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____
Field Observations
Confirm Mapped Type? Yes No

Taxonomy (Subgroup): _____

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
~~1-12~~	~~A~~	~~5YR 2.5/1~~ (wet)	~~2.5YR 4/6~~	~~5% mottles~~	

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: ~~No discernible O horizon~~ high chroma no mottles

non hydric soils high chroma

mapping error soil rock outcrop unpt 30-75% field observation does not confirm type

taxonomy typic Aquiralfs

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes No (Circle)	
Wetland Hydrology Present?	Yes No	
Hydric Soils Present?	Yes No	
Is this Sampling Point Within a Wetland?		(Circle) Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: FTC
Applicant/Owner: TCA
Investigator: Chilin, Austin

Date: 7/31
County: OR
State: CA

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID: 7(6)1 [7-14]
Transect ID:
Plot ID: TOP 8

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Salt grass distichlis spicata	FACW		9.		
2. Trifolium multiflorum	FAC		10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-).

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
X No Recorded Data Available

Field Observations:

Depth of Surface Water: 0 (in.)
Depth to Free Water in Pit: 0 (in.)
Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
X Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: w/in a drainage

SOILS

Map Unit Name (Series and Phase): Soper Rock outcrop complex 30-75% slope

Drainage Class: _____

Field Observations Confirm Mapped Type? Yes (No)

Taxonomy (Subgroup): Typic Argiaquolls

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
12"		2.5Y 3/1	none		silty clay

Hydric Soil Indicators:

borderline

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: some oxidized root channels in upper layers, possible gleying – 5Y 2.5/1

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes) No	(Circle)
Wetland Hydrology Present?	(Yes) No	
Hydric Soils Present?	(Yes) No	

(Circle)

Is this Sampling Point Within a Wetland? (Yes) No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: 7(6)-4 FTC	Date: 8/6/01
Applicant/Owner: TCA	County: OR
Investigator: JC/EC	State: CA
Do Normal Circumstances exist on the site? (Yes) No	Community ID: 7(6)4 7-17
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID: map6
Is the area a potential Problem Area? Yes (No)	Plot ID: 7-DP-12
(If needed, explain on reverse.)	

landslide area south of

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Salix lasiolepis	Shrub	FACW	9.		
2. Baccharis salicifolia	Shrub	FACW	10.		
3. Artemisia californica	Shrub	Upland	11.		
4. Avena sp.	Herb	Upland	12.		
5. Bromus hordeaceus	Herb	Upland	13.		
6. Salix goodingii	Tree	OBL	14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 50%

Remarks: does not meet for hydrophytic plants

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: 0 (in.)

Depth to Free Water in Pit: 0 (in.)

Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- X Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ✓ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name (Series and Phase): Soper-Rock outcrop complex 30 to 85% slope

Drainage Class: _____

Field Observations Confirm Mapped Type? Yes (No)

Taxonomy (Subgroup): Typic Argixerolls

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-4	A	10R 3/2	10R 4/4	30%	Clay loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes (No)	(Circle)
Wetland Hydrology Present?	Yes (No)	
Hydric Soils Present?	(Yes) No	

(Circle)

Is this Sampling Point Within a Wetland? Yes (No)

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: FTC
Applicant/Owner: TCA
Investigator: PS, JC

Date: 8/3/01
County: OR
State: CA

Do Normal Circumstances exist on the site? Yes (No)
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID: alkali sio
Transect ID: map 1
Plot ID: FEOP-1

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. ambrosia psilostachya	herb	Fac	9.		
2. distichalis	herb	FacW	10.		
3. mustard brassica	herb	upl	11.		
4. prickly pear opuntia	herb	upl	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 50%

Remarks: does not meet for hydrophytes

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
X No Recorded Data Available

Field Observations:

Depth of Surface Water: 0 (in.)
Depth to Free Water in Pit: 0 (in.)
Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
X Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name (Series and Phase): Capistrano Sandy Loam 2-9% slopes

Drainage Class: well drained

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): Entic Haploxerols

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-8	A	10YR 3/2	none		sandy loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: does not meet for hydric soils

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes No (Circle)	
Wetland Hydrology Present?	Yes No	
Hydric Soils Present?	Yes No	
Is this Sampling Point Within a Wetland?		(Circle) Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: FTC
Applicant/Owner: TCA
Investigator: JCNS

Date: 8/3/01
County: OR
State: CA

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID: 2 FeSeep1 FE7-2
Transect ID: map 1 alkali seep
Plot ID: 7/FEOP2 7b

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Mule fat	Shrub	FacW	9.		
2. Tamarix ramosissima	shrub	UPL	10.		
3. Scirpus americanus	herb	OBL	11.		
4. Juncus mexicanus	herb	FacW	12.		
5. Yerba mansa (Anemopsis californica)	herb	OBL	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 60%

Remarks: hydrophytic veg present

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: at surface (in.)

Depth to Free Water in Pit: 0 (in.)

Depth to Saturated Soil: 12 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- X Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: hydrology present

SOILS

Map Unit Name (Series and Phase): Capistrano Sandy Loam 2-9% slope

Drainage Class: well drained

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): Entic Haploxerolls

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-4	A	2.5Y 2.5/1	none	none	Sandy loam
4-12	B	5Y 4/2	none	none	sandy loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors (in upper horizon)
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No (Circle)
Wetland Hydrology Present?	Yes	No
Hydric Soils Present?	Yes	No

(Circle)

Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: FTC
Applicant/Owner: TCA
Investigator: PS/GC

Date: 8/3/01
County: [illegible]
State: [illegible]

FCF7-2

Do Normal Circumstances exist on the site? Yes (No)
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID: 3 ~~FC Seep 3~~
Transect ID: north alkali slep
Plot ID: 7/FFOP 3

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Lycopus americanus	herb	OBL	9.		
2. Scirpus americanus	herb	OBL	10.		
3. Juncus inpetkanus	herb	FACW	11.		
4. Oragnee Yambosia psilostachya	herb	FAC	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: hydrophytic vegetat

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
X No Recorded Data Available

Field Observations:

Depth of Surface Water: 0 (in.)
Depth to Free Water in Pit: 0 (in.)
Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
none
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: does not meet for hydrology

SOILS

Map Unit Name (Series and Phase): Capistrano Sandy Loam 2-9% slope

Drainage Class: well drained

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): Entic Haploxerolls

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-8	A	10YR 3/2	None		Sandy loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor None
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No (Circle)
Wetland Hydrology Present?	Yes	No
Hydric Soils Present?	Yes	No

(Circle)

Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: ETC Applicant/Owner: TCA Investigator: JC, PC	Date: 8/3/01 County: OK State: Ok
Do Normal Circumstances exist on the site? Yes No Is the site significantly disturbed (Atypical Situation)? Yes No Is the area a potential Problem Area? Yes No (If needed, explain on reverse.)	Community ID: 4 Transect ID: map 1 at fesep Plot ID: 7/FEDP4

FE/7-2
Fesep 1
7b

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Cyperus esculentus		FACW	9.		
2. Eleocharis		OBL	10.		
3. ambrosia psilostachya		FAC	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100 %

Remarks: hydric veg present

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: at surface (in.)

Depth to Free Water in Pit: 0 (in.)

Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- X Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- X Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: hydrology present

SOILS

Map Unit Name (Series and Phase): Capistrano Sandy loam 2-9% slope

Drainage Class: well drained

Field Observations Confirm Mapped Type? (Yes) No

Taxonomy (Subgroup): Entic Haploxerolls

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-16	A	10YR 3/4	no	None	Sandy fine loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor NO
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: no redox or hydric

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No	(Circle)
Wetland Hydrology Present?	Yes	No	
Hydric Soils Present?	Yes	No	

(Circle)

Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: FTC
Applicant/Owner: TCA
Investigator: PS & C

Date: 8/3/06
County: OB
State: CA

FE/7-2 Seep 1

Do Normal Circumstances exist on the site? Yes No
Is the site significantly disturbed (Atypical Situation)? Yes No
Is the area a potential Problem Area? Yes No
(If needed, explain on reverse.)

Community ID: 4a) (2 feet tank center of drainage from A
Transect ID: nap/alkali seep
Plot ID: 2/FEOP5 7b

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Cyperus eschentic		FACW	9.		
2. Schoenoplectus californicus		FAC	10.		
3. eleocharis		OBL	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: hydrophytic veg present

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
X No Recorded Data Available

Field Observations:

Depth of Surface Water: at surface (in.)
Depth to Free Water in Pit: at surface (in.)
Depth to Saturated Soil: at surface (in.)

Wetland Hydrology Indicators:
Primary Indicators:
X Inundated
X Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
X Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
X Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: hydrology present

SOILS

Map Unit Name (Series and Phase): Capistrano Sandy Loam 2-9% slopes

Drainage Class: well drained

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): Entic Haploxerolls

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-16	A	5Y 3/2	n		fine sandy loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: gleyed hydric soils

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No	(Circle)
Wetland Hydrology Present?	Yes	No	
Hydric Soils Present?	Yes	No	

(Circle)

Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: FTC Applicant/Owner: TCA Investigator: I Chlup	Date: 8/28 County: OK State: CA
Do Normal Circumstances exist on the site? Yes No Is the site significantly disturbed (Atypical Situation)? Yes No Is the area a potential Problem Area? Yes No (If needed, explain on reverse.)	Community ID: CP-5a (Fe-2) Transect ID: Plot ID: FEOP1

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. typha sp		OBL	9.		
2. bacharis salicifolia		facw	10.		
3. eleocharis sp		2facw	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

pool grows in wet/dry

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-).

Remarks: meet for veg

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: 1 (in.)

Depth to Free Water in Pit: none (in.)

Depth to Saturated Soil: none (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- X Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- X Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: soil damp but not saturated meet for hydrology

SOILS

Map Unit Name (Series and Phase): Coralitos loamy sand

Drainage Class: Somewhat excessively drained

Field Observations Confirm Mapped Type? Yes (No)

Taxonomy (Subgroup): typic xeropsamments

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12	A	N 4/0 dark gray		None	clay loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- X Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No	(Circle)
Wetland Hydrology Present?	Yes	No	
Hydric Soils Present?	Yes	No	

(Circle)

Is this Sampling Point Within a Wetland? Yes No

Remarks: surface sat w/ flow surface water
channel severely degraded by cattle

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: FTC	Date: 8/28/01
Applicant/Owner: TCA	County: OR
Investigator: Schlup	State: CA
Do Normal Circumstances exist on the site? Yes No	Community ID: wetland area adjacent to CPSA
Is the site significantly disturbed (Atypical Situation)? Yes No	Transect ID:
Is the area a potential Problem Area? Yes No (If needed, explain on reverse.)	Plot ID: FEOP2 FE-2

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. T mexicanus		facW	9.		
2. Rumex sp.		≥ facW	10.		
3. water cress Rorippa nasturtium aquaticum		OBL	11.		
4. cyperus sp.		≥ facW	12.		
5. alnum glutinosa		facW	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). _____

Remarks: meets for hydrophytic veg - all very young - just sprouted very degraded by cattle

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: 1 (in.)

Depth to Free Water in Pit: 4 (in.)

Depth to Saturated Soil: 4 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- X Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: meets for hydrology

SOILS

Map Unit Name (Series and Phase): Corralitos loamy sand

Drainage Class: Somewhat excessively drained

Field Observations Confirm Mapped Type? Yes (No)

Taxonomy (Subgroup): typic xerepsamments

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12	A	10YR 3/1	None		clay loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: meets for soils

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes) No (Circle)		(Circle)
Wetland Hydrology Present?	(Yes) No		
Hydric Soils Present?	(Yes) No	Is this Sampling Point Within a Wetland?	Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Review w/Sara

Project/Site: FTC	Date: 8/28/01
Applicant/Owner: TCA	County: OK
Investigator: Schlup	State: CA
Do Normal Circumstances exist on the site? Yes No	Community ID: DS 6a – Colorado Fe 3
Is the site significantly disturbed (Atypical Situation)? Yes No	Transect ID:
Is the area a potential Problem Area? Yes No (If needed, explain on reverse.)	Plot ID: FEOP3

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. melilotus alba		facup	9.		
2. cynodon dactylon		fac	10.		
3. lolium multiflorum		fac	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-).

Remarks: 66% hydrophytic – others hydrophytic but less common – willow midgrass, etc.

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: 0 (in.)

Depth to Free Water in Pit: 0 (in.)

Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- X Sediment Deposits → fine deposit w/ leaf fragments
- X Drainage Patterns in Wetlands → drainpatterns throughout with hydrophytic veg

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: adjacent to Colorado

SOILS

Map Unit Name (Series and Phase): Corralitos loamy sand

Drainage Class: somewhat excessively drained

Field Observations Confirm Mapped Type? Yes (No)

Taxonomy (Subgroup): typic xerorthents

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12	A	5YR 4/1	None		silty clay loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor None
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

low chroma

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No	(Circle)
Wetland Hydrology Present?	Yes	No	
Hydric Soils Present?	Yes	No	

(Circle)

Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: FTC	Date: 8/28
Applicant/Owner: TCA	County: OR
Investigator: IChalup	State: CA
Do Normal Circumstances exist on the site? Yes No	Community ID: CP6 [FC-3]
Is the site significantly disturbed (Atypical Situation)? Yes No	Transect ID:
Is the area a potential Problem Area? Yes No (If needed, explain on reverse.)	Plot ID: FEOP4

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. xanthium strumarium		FAC+	9.		
2. polygonum lapathifolium		OBL	10.		
3. Cryptocoryne aquatica		OBL	11.		
4. rubus spectabilis		FACW	12.		
5. veronica anagallis aquatica		OBL	13.		
6. paspalum distichum		OBL	14.		
7.			15.		
8.			16.		

7 bm

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). _____

Remarks: meet fwveg

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: 0 (in.)

Depth to Free Water in Pit: 2 (in.)

Depth to Saturated Soil: to surface (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- X Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- X Sediment Deposits
- X Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: meet for hydrology

SOILS

Map Unit Name (Series and Phase): Botella loam 2 to 9% slopes

Drainage Class: well drained

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): Pachic Argixerolls

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12	A	10YR 4/1	7.5YR 5/8	faint/distinct ~10%	sandy loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor None
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No (Circle)
Wetland Hydrology Present? Yes No
Hydric Soils Present? Yes No

(Circle)
Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: FTC	Date: 8/27/01
Applicant/Owner: TCA	County: OR
Investigator: I Chlup	State: CA
Do Normal Circumstances exist on the site? Yes (Yes) No	Community ID: M3a Disturbed
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID:
Is the area a potential Problem Area? Yes (No)	Plot ID: FE005
(If needed, explain on reverse.)	

FE-4

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Rumex crispus		FACW	9.		
2. Brassica nigra		up	10.		
3. Xanthium strumarium		Fact	11.		
4. Lolium multiflorum		Fac	12.		
5. Wild radish Raphanus sativus		Upl	13.		
6. polygonum arenastrum		fac	14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-).

Remarks: 4/6 66% hydrophytic - meet hydrophyte

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: 0 (in.)

Depth to Free Water in Pit: 0 (in.)

Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- X Drainage Patterns in Wetlands

Secondary Indicators (2 or more required): none
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves none
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: pondy area because drainage

SOILS

Map Unit Name (Series and Phase): Capistrano Sandy loam

Drainage Class: well drained

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): Entic Haploxerolls

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12	A	5YR 4/2	None		Sandy loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: Not hydric soil

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No	(Circle)
Wetland Hydrology Present?	Yes	No	
Hydric Soils Present?	Yes	No	

(Circle)

Is this Sampling Point Within a Wetland? Yes No

Remarks: does not have hydric soils indicating saturation for 18 consecutive days

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: FTC Applicant/Owner: TCA Investigator: Tehlup	Date: 8/27 County: OR State: CA
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: CP 9 + dd (wetland) Transect ID: Plot ID: FEOP7

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Salix lasiandra		OBL	9.		
2. Urtica dioica		FACW	10.		
3. Polygonum punctatum		OBL	11.		
4. Ranunculus aquatilis		OBL	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: 100% hydrophytes - all young vegetation (low % cover in some areas)

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: 0 (in.)

Depth to Free Water in Pit: 0 (in.)

Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- X Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: Soil damp at end of August, previous observation indicated standing water

SOILS

Map Unit Name (Series and Phase): Cleneba Sandy loam

Drainage Class: somewhat excessively drained

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): typic xerorthents

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-4	O	5YR 2.5/1		no mottles	sandy loam
4-12	A	5YR 5/1		no mottles.	sandy

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- X Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: appears to have hydrogenic material in top 4 inches (very dark) soil is damp but not saturated, lower sandy layer is low chroma

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No	(Circle)
Wetland Hydrology Present?	Yes	No	
Hydric Soils Present?	Yes	No	

Is this Sampling Point Within a Wetland? Yes No (Circle)

Remarks: channel Bed is nearly unvegetated - sparsely growing nettle + watercress where damp except for fresh sprouts of Band S - sycamore, elderberry, willows poison oak

Approved by HQUSACE 3/92

previous observations found gleyed sandy soils N3/1 + surface water

adjacent bulla- bermudagrass wetland

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: FTC
Applicant/Owner: TCA
Investigator: JC, PSchur

Date: 8/3/01
County: OR
State: CA

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID: Willow Seep
Transect ID:
Plot ID: FEOP6

map 3

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. bristly ox-tongue picris echioides	herb	fac	9.		
2. Kickxia elatine	herb	NI	10.		
3. wild radish Raphanus sativus	herb	UPL	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 33%

Remarks: No hydrophytic veg

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
X No Recorded Data Available

Field Observations:

Depth of Surface Water: 0 (in.)
Depth to Free Water in Pit: 0 (in.)
Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
none

Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)
none

Remarks: no hydrology

SOILS

Map Unit Name (Series and Phase): Capistrano Sandy loam

Drainage Class: well drained

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): Entic Haploxerolls

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12	A	5Y 2.5/1	none		Sandy loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: hydric soils

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes No (Circle)	
Wetland Hydrology Present?	Yes No	
Hydric Soils Present?	Yes No	
Is this Sampling Point Within a Wetland?		Yes No (Circle)

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: FTC Applicant/Owner: TCA Investigator: Ichlup	Date: 8/30/01 County: OR State: CA
Do Normal Circumstances exist on the site? Yes No Is the site significantly disturbed (Atypical Situation)? Yes No Is the area a potential Problem Area? Yes No (If needed, explain on reverse.)	Community ID: CP10 FE-8 Transect ID: Plot ID: FE08

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. epilobium ciliatum		facW	9.		
2. J. nevadensis		OBL	10.		
3. Polypogon monspeliensis		OBL	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: meets for hydrophytic veg

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: 2 (in.)

Depth to Free Water in Pit: 0 (in.)

Depth to Saturated Soil: to surface (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- X Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: receiving runoff from nursery

SOILS

Map Unit Name (Series and Phase): Rockbottom - Glenbacumpo 30-75% slops

Drainage Class: _____

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): typic xerorthents

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-4		10YR 4/2	none		clay loam
4-12		N 4/	none		sandy loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- X Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: meet hydric soils for

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No	(Circle)
Wetland Hydrology Present?	Yes	No	
Hydric Soils Present?	Yes	No	

(Circle)

Is this Sampling Point Within a Wetland? Yes No

Remarks: Stone nursery

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: FTC	Date: 8-16-01
Applicant/Owner: TCA	County: OR
Investigator: SPIEC	State: CA

EEVM9 South DSI concrete plant

Do Normal Circumstances exist on the site?	Yes	No	Community ID: Pond/area
Is the site significantly disturbed (Atypical Situation)?	Yes	No	Transect ID:
Is the area a potential Problem Area?	Yes	No	Plot ID: FEOP9
(If needed, explain on reverse.)			

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Baccharis salicifolia		facw-	9.		
2. xanthium strumarium		fac	10.		
3. plumea crispus		facw-	11.		
4. eleocharis sp		2 facw	12.		
5. salix goodingii		obl	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: 0 (in.)

Depth to Free Water in Pit: 0 (in.)

Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- X Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- X Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: appears to fill w/ runoff from concrete plant, then flows to San Juan Creek
ponded 11-01 to 5-15-01

PWW-7

SOILS

Map Unit Name (Series and Phase): ✓ Riverwash

Drainage Class: _____

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): _____

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-4	A	10YR 4/2		many distinct	loam
below 4					heavy cobble

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- X Other (Explain in Remarks)

Remarks: meet for hydric soils

* ponded 1-11-01 to 5-15-01

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No (Circle)
Wetland Hydrology Present? Yes No
Hydric Soils Present? Yes No

(Circle)
Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: FTC	Date: 8/20/01
Applicant/Owner: TCA	County: OR
Investigator: TCTB	State: CA
Do Normal Circumstances exist on the site? (Yes) No	Community ID: (E) FEOMIO
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID: maps
Is the area a potential Problem Area? Yes (No)	Plot ID: FEOP10C
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Rumex crispus		FacW+	9.		
2. Lythrum hyssopifolia		FacW	10.		
3. Baccharis salicifolia		FacW	11.		
4. Polygonum monspeliensis		FacW+	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

X Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- X Other observations during shrimp surveys
- ___ No Recorded Data Available

Field Observations:

Depth of Surface Water: _____ (in.)

Depth to Free Water in Pit: _____ (in.)

Depth to Saturated Soil: _____ (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- X Drainage Patterns in Wetlands depressional area

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: ponded 1-11-01 to 4-8-01

when ponded does fairy shrimp survey

29x31 feet

noted maps for location + size for fairy shrimp survey

SOILS

Map Unit Name (Series and Phase): ✓ Riverwash

Drainage Class: _____

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): _____

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- X Other (Explain in Remarks)

Remarks: meets definition of hydric soils (add criteria)
Refer to fairy shrimp data ponded 1-11-01 to 4-8-01

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No (Circle)
Wetland Hydrology Present? Yes No
Hydric Soils Present? Yes No

(Circle)
Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: FTC Applicant/Owner: TCA Investigator: LC/SY	Date: 8/16/01 County: OR State: CA
Do Normal Circumstances exist on the site? Yes No Is the site significantly disturbed (Atypical Situation)? Yes No Is the area a potential Problem Area? Yes No (If needed, explain on reverse.)	Community ID: SJG DSH Transect ID: Plot ID: FEOP11

FEVP2 pond area

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. polypogon monspeliensis		facw+	9.		
2. ~~amblyosporilostachys~~		fac	10.		
3. Baccharis salicifolia		facw	11.		
4. ~~unknown plants fungi~~ lythrum hyssopifolia		facw	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: 0 (in.)

Depth to Free Water in Pit: 0 (in.)

Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- X Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- X Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: depressional area ponded 2/13/01 to 2/21/01

SOILS

Map Unit Name (Series and Phase): River wash

Drainage Class: _____

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): _____

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-4	A	10YR 4/2		Common/faint	loamy sandy
below 4	B		compact	below 4½	

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- X Other (Explain in Remarks)

Remarks: Compact layer in profile observed 2-13-01 to 2-21-01

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No (Circle)
Wetland Hydrology Present?	Yes	No
Hydric Soils Present?	Yes	No

(Circle)

Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: FPC Applicant/Owner: TCA Investigator: JC/SY	Date: 8·16·01 County: OR State: CA
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: DS12 ~~FC~~ Seep 2C1 willow scrub Transect ID: Plot ID: FEOP12

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. J. Rugulosus		OBL	9.		
2. Salix goodingii		OBL	10.		
3. Ambrosia psilostachya		FAC	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: / (in.)

Depth to Free Water in Pit: / (in.)

Depth to Saturated Soil: / (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- X Sediment Deposits
- X Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: Profile moist in upper 12".

SOILS

Map Unit Name (Series and Phase): Riverwash

Drainage Class: _____

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): _____

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-6	A	10YR 3/1			SL
6-7	B1	10YR 4/3			Medium Sand
7-12	~~B2~~ Ab	10YR 3/1			SCL
12-16	B2	10YR 4/1		w/common distinct	SC

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: Hydric based on low chroma & Redox Features.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No (Circle)
Wetland Hydrology Present?	Yes	No
Hydric Soils Present?	Yes	No

(Circle)

Is this Sampling Point Within a Wetland? Yes No

Remarks: Depressional area on bench above San Juan Creek. Willow woodland.

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: FTC / San Juan Creek - Feahanna Jordan	Date: 8/16/01
Applicant/Owner: TCA	County: OR
Investigator: TC/SY	State: CA
Do Normal Circumstances exist on the site? Yes No	Community ID: 6 San Juan Creek FE
Is the site significantly disturbed (Atypical Situation)? Yes No	Transect ID:
Is the area a potential Problem Area? Yes No (If needed, explain on reverse.)	Plot ID: FCOP 19

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. cyperus involucratus	H	OBL	9.		
2. baccharis salicifolia	S	facW	10.		
3. platanus racemosa	T	facW	11.		
4. salix spp (red willow)		facW	12.		
5. arundo donax		facW	13.		
6. yellow willow salix lucida ssp lasiandra		OBL	14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks: mature fm

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: 0 (in.)

Depth to Free Water in Pit: 0 (in.)

Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- X Sediment Deposits
- X Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: coarse stream deposits, within fine surface crust, overlayed w/ 2in leaf litter, several small, no moisture in upper 12, no evidence of standing water

SOILS

Map Unit Name (Series and Phase): River wash

Drainage Class: _____

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): _____

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-16	A				coarse sand cobbly sand

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: ~~[illegible]~~ clean coarse sand, little organic matter
no evidence of saturation

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No (Circle)
Wetland Hydrology Present?	Yes	No
Hydric Soils Present?	Yes	No

Is this Sampling Point Within a Wetland? (Circle) Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: San Juan Creek FTC	Date: 8/16/01
Applicant/Owner: TCA	County: OR
Investigator: SP/TC	State: CA
Do Normal Circumstances exist on the site? Yes No	Community ID: San Juan Creek DS7
Is the site significantly disturbed (Atypical Situation)? Yes No	Transect ID:
Is the area a potential Problem Area? Yes No	Plot ID: FeOP20
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. typha sp	H	OBL	9. melilotus alba		FacU
2. cyperus inducratus	H	OBL	10. artemesia douglasiana		FacW
3. anthriscus scandicinum		FacW	11. salix lasiolepis/ lasiandra		FacW+
4. epilobium canens		OBL	12. mint unidentified		
5. arundo donax		FacW	13. unidentified stachys ajugoides		OBL
6. rumex crispus		FacW-	14. salix lucida/alnus rhombifolia		OBL
7. salix gooddingii		OBL	15.		
8. rabbits foot polypogon monspeliensis		FacW+	16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-).

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):	Wetland Hydrology Indicators:
___ Stream, Lake, or Tide Gauge	Primary Indicators:
___ Aerial Photographs	___ Inundated
___ Other	___ Saturated in Upper 12 Inches
___ No Recorded Data Available	___ Water Marks
	___ Drift Lines
Field Observations:	X Sediment Deposits
	X Drainage Patterns in Wetlands depressional area in drainage
Depth of Surface Water: 0 (in.)	Secondary Indicators (2 or more required):
Depth to Free Water in Pit: 0 (in.)	___ Oxidized Root Channels in Upper 12 Inches
Depth to Saturated Soil: 0 (in.)	___ Water-Stained Leaves
	___ Local Soil Survey Data
	___ FAC-Neutral Test
	___ Other (Explain in Remarks)

Remarks: adventitious roots on black willow

SOILS

Map Unit Name (Series and Phase): Riverwash

Drainage Class:

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup):

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-16	A				Cobbly sand

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: stream deposit moist to surface in aug. fine surface crust – hydric soil based on topography + moisture in profile in late summer

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes No	(Circle)
Wetland Hydrology Present?	Yes No	
Hydric Soils Present?	Yes No	

(Circle)

Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: FTC	Date: 8/16/01
Applicant/Owner: TCA	County: OR
Investigator: TC/SY	State: CA
Do Normal Circumstances exist on the site? **Yes** No	Community ID: DS 7a (SC) FE
Is the site significantly disturbed (Atypical Situation)? Yes **No**	Transect ID:
Is the area a potential Problem Area? Yes **No**	Plot ID: FeOP 21
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. arundo donax		FACW	9.		
2. Sambucus mexicana		FACW	10.		
3. DS6 Salix spp. lasiolepis		FACW+	11.		
4. platanus racemosa		FACW	12.		
5. cyperus inundatus		OBL	13.		
6. Salix laevigata		OBL	14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-).

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: 4 (in.)

Depth to Free Water in Pit: ___ (in.)

Depth to Saturated Soil: ___ (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- X Inundated
- X Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: adventitious Roots

SOILS

Map Unit Name (Series and Phase): Riverwash

Drainage Class: _____

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): _____

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-6	A	10YR4/2	none		coppy w/high organics loamy

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: inundated w/ flowing water & mucky organic layer

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No (Circle)
Wetland Hydrology Present?	Yes	No
Hydric Soils Present?	Yes	No

(Circle)

Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: FTC	Date: 8/16/01
Applicant/Owner: TMA	County: OR
Investigator: BCSY	State: CA
Do Normal Circumstances exist on the site? Yes No	Community ID: DSB San Juan Creek-Fr
Is the site significantly disturbed (Atypical Situation)? Yes No	Transect ID:
Is the area a potential Problem Area? Yes No	Plot ID: Map 5 FCOP 22
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. cyperus niolucratus		OBL	9.		
2. artemesia douglasiana		facW	10.		
3. freewill pilead amorphia fruticosa		fac	11.		
4. Salix spp lacvitiga		≥ facW	12.		
5. eleocharis		≥ facW	13.		
6. alder Alnus phombifolia		facW	14.		
7. horsetail equisetum sp		≥ fac	15.		
8. Salix lucida ssp lasandra		OBL	16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-).

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: / (in.)

Depth to Free Water in Pit: 7 (in.)

Depth to Saturated Soil: 5 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- X Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- X Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: Series of depressional Pocket WLs in braided Stream channel. Most to Surface in channel.

SOILS

Map Unit Name (Series and Phase): River Wash

Drainage Class: _____

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): _____

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-2	O	—		—	Fibrous organics
2-16+	A	individual grains		Common/distinct	gr Sand

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: Saturated @ 5" in August. Redox in Sandy Soil = hydric

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No	(Circle)
Wetland Hydrology Present?	Yes	No	
Hydric Soils Present?	Yes	No	

(Circle)

Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: FTC Applicant/Owner: TCA Investigator: J L/SP	Date: 8-16-01 County: OA State: CA
Do Normal Circumstances exist on the site? Yes No Is the site significantly disturbed (Atypical Situation)? Yes No Is the area a potential Problem Area? Yes No (If needed, explain on reverse.)	Community ID: DS 9 SJC fe Transect ID: SJC map 8 Plot ID: FGOP 23

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. cyperus involucratus		OBL	9. mulefat Baccharis salicifolia		facw
2. artemesia douglasiana		facw	10. willowherb/gln Oenothera elata		facw
3. watercress Rorippa nasturtium-aquatica		OBL	11. Salix laevigata spp		≥ facw
4. duckweed Lemna spp		OBL	12. cocklebur Xanthium strumarium		facu
5. stinging nettle Urtica dioica		facw	13. sycamore Platanus Racemosa		facw
6. Epilobium canum		facw	14. Juncus vaseyi		OBL
7. mimulus cardinalis		OBL	15. Salix lucida		OBL
8. Scirpus microcarpus		OBL	16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-).

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: 7" (in.)

Depth to Free Water in Pit: surface (in.)

Depth to Saturated Soil: surface (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- X Inundated
- X Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:

A 15 feet open wetland flowing water

SOILS

Map Unit Name (Series and Phase): River Wash

Drainage Class: _____

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): _____

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: clean sand, inundated in Aug.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No	(Circle)
Wetland Hydrology Present?	Yes	No	
Hydric Soils Present?	Yes	No	

(Circle)

Is this Sampling Point Within a Wetland? Yes No

Remarks: 15 feet from water (indicated by plants & wet), additional 55 feet to South saturated upper 12" & vegetated by cyperus, Salix, Baccharis, Baccharis (abuts an agricultural stripe)

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: FTC	Date: 8/15/01
Applicant/Owner: TGA	County: GB
Investigator: TTUS	State: GA
Do Normal Circumstances exist on the site? Yes No	Community ID: Hydric Seep
Is the site significantly disturbed (Atypical Situation)? Yes No	Transect ID:
Is the area a potential Problem Area? Yes No	Plot ID: FCOP 25
(If needed, explain on reverse.)	

FE 16c Yellow Orange 16d wap 8

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Juncus mexicanus	H	FACW	9.		
2. Ambrosia psilostachya	H	FAC	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: meets for hydrophytic vegetation

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: 0 (in.)

Depth to Free Water in Pit: 0 (in.)

Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- X Drainage Patterns in Wetlands

Secondary Indicators (2 or more required): ↓ In Attachment
- X Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: meets for hydrology

SOILS

Map Unit Name (Series and Phase): Geneba sandy loam 30-75% slope

Drainage Class: somewhat excessively drained

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): Typic Xerorthents

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-4	A	2.5Y 5/3	10YR 6/8	abundant/prominent	silty clay
4-12	B	2.5Y 5/3	none	none	silty clay

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: does not meet for hydric soils

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes No (Circle)	
Wetland Hydrology Present?	Yes No	
Hydric Soils Present?	Yes No	
Is this Sampling Point Within a Wetland?		Yes No (Circle)

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: FTC	Date: 8/15/01
Applicant/Owner: TCA	County: OR
Investigator: TCIPS	State: CA
Do Normal Circumstances exist on the site? (Yes) No	Community ID: Isolated pond/mp 5 FE-wetland
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID:
Is the area a potential Problem Area? Yes (No)	Plot ID: FCOP 24
(If needed, explain on reverse.)	

VEGETATION

140X20 → pond fringe

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. bassgium distichum	H	OBL	9.		
2. typha dominingis	H	OBL	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100 %

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):	Wetland Hydrology Indicators:
___ Stream, Lake, or Tide Gauge	Primary Indicators:
___ Aerial Photographs	X Inundated
___ Other	X Saturated in Upper 12 Inches
X No Recorded Data Available	___ Water Marks
	___ Drift Lines
Field Observations: contringe of pond	___ Sediment Deposits
	___ Drainage Patterns in Wetlands
Depth of Surface Water: 0 (in.)	Secondary Indicators (2 or more required):
Depth to Free Water in Pit: 5 (in.)	X Oxidized Root Channels in Upper 12 Inches
Depth to Saturated Soil: at surface (in.)	___ Water-Stained Leaves
	___ Local Soil Survey Data
	___ FAC-Neutral Test
	___ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name (Series and Phase): Alo clay

Drainage Class:

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): Typic Chromoxerepts

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-16	A	Chart 1 gley 3/5GY	0	0	Clay loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- X Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: meets for hydric soils

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No (Circle)
Wetland Hydrology Present?	Yes	No
Hydric Soils Present?	Yes	No

(Circle)

Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

3 Q 5 ft

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: ETC	Date: 8/28/01
Applicant/Owner: TCA	County: OL
Investigator: EC	State: CA
Do Normal Circumstances exist on the site? Yes No	Community ID: CP 28 FE-191
Is the site significantly disturbed (Atypical Situation)? Yes No	Transect ID:
Is the area a potential Problem Area? Yes No	Plot ID: PROP 26
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Baccharis Salicifolia		FACW	9.		
2. ambrosia psilostachya		FAC	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). _____

Remarks: very little veg cover <30% veg shifted to upland since July
earlier in the season (July) found some j. rugulosis/leucharis

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: 0 (in.)

Depth to Free Water in Pit: 0 (in.)

Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- X Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: w/in a drainage

SOILS

Map Unit Name (Series and Phase): Geneba Sandy loam 15-30% slope

Drainage Class: somewhat excessively drained

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): typic xerorthents

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: Clear sand deposits / no mottles / no gleyy / no odor

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No (Circle)
Wetland Hydrology Present? Yes No
Hydric Soils Present? Yes No

(Circle)
Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: FTC/	Date: 8/30/01
Applicant/Owner: TCA	County: OR
Investigator: tchlw	State: CA FC-19 site 4
Do Normal Circumstances exist on the site? Yes (Yes) No	Community ID: CP 206
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID:
Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Plot ID: FCOP 28

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Opuntia prolifera		FACW	9.		
2. Juncus mexicanus		FACW	10.		
3. Amaranthus		FACW	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: none (in.)

Depth to Free Water in Pit: none (in.)

Depth to Saturated Soil: 7 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- X Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- X Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: Windrows

SOILS

Map Unit Name (Series and Phase): Myford Sandy loam 9 to 15% slopes

Drainage Class: moderately well drained

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): Typic Palexeralfs

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-2	A	10YR 5/2	5YR 4/6	diffuse/90%	Sandy
2-12	B	N 4/	none		Sandy

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No	(Circle)
Wetland Hydrology Present?	Yes	No	
Hydric Soils Present?	Yes	No	

(Circle)

Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: FTC Applicant/Owner: TCA Investigator: PS/BC	Date: 8/15/01 County: MR State: CA
Do Normal Circumstances exist on the site? Yes No Is the site significantly disturbed (Atypical Situation)? Yes No Is the area a potential Problem Area? Yes No (If needed, explain on reverse.)	Community ID: Stable pond Transect ID: Plot ID: FOP 29

FF wetland? (65x16'

mangrove pond, mudflats to sand + WET sandsubst

emergent, cattail 25% cover

fringe cattail w/ peripheral

small pool of clear

VEGETATION

fringe pond

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Paspalum distichum		OBL	9.		
2. Eleocharis acicularis		OBL	10.		
3. Scirpus californicus		OBL	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). _____

Remarks: Meets for Hydrophitic Veg.

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: 0 (in.)

Depth to Free Water in Pit: 10 (in.)

Depth to Saturated Soil: to surface (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- X Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: Meets for Hydrology

SOILS

Map Unit Name (Series and Phase): Int ?

Drainage Class: _____

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): _____

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-5	A	2.5Y 5/4	10YR 6/8	few diffuse/faint	loamy sand
5-16	B	gley chroma 1/5GY	no mottles		sandy loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- X Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: meets for hydric soils

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No (Circle)
Wetland Hydrology Present?	Yes	No
Hydric Soils Present?	Yes	No

(Circle)

Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

170x10
+
50x10

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: FTC
Applicant/Owner: TCA
Investigator: T. Chilin

Date: 8/30/01
County: OR
State: CA

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID: FEYM13
Transect ID:
Plot ID: ~~FTC 30~~

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. cynodon dactylon		FAC	9.		
2. Polypogon monspeliensis		FACW	10.		
3. Lythrum hyssopifolia		FACW-	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

think stump one?

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 66%

Remarks: meet for hydrophytic veg

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
___ No Recorded Data Available

Field Observations:

Depth of Surface Water: 0 (in.)
Depth to Free Water in Pit: none 0 (in.)
Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
X Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
X Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: look at fairy shrimp data — observed to pond 2-13-01 to 2-21-01

SOILS

Map Unit Name (Series and Phase): Mytford Sandy loam 9-30% Slope

Drainage Class: med. well drained

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): Typic Paleudults

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12	A	2.5Y 2.5/3	5YR 5/8	~40% / distinct	silty clay

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- X Other (Explain in Remarks)

possible

Remarks: No hydric
ponded 2-13-01 - 2-21-01 4" depth
Tangshing survey indicate poorly drained VM14
13 → (deg. observed 4" clay)

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No (Circle)
Wetland Hydrology Present?	Yes	No
Hydric Soils Present?	Yes	No

(Circle)
Is this Sampling Point Within a Wetland? Yes No

Remarks: begin by blackwillow before 70 continuous w/ CP3
rabbitfoot/saltgrass/prairie/[illegible]
continuous to [illegible]
elevation is downslope to coastal [illegible]
then primarily Bai[illegible]

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: FTC Applicant/Owner: TCA Investigator: Tchlup	Date: 8/30/01 County: OR State: CA
Do Normal Circumstances exist on the site? **Yes** No Is the site significantly disturbed (Atypical Situation)? Yes **No** Is the area a potential Problem Area? Yes **No** (If needed, explain on reverse.)	Community ID: FCVM14 Transect ID: Plot ID: FCOP 31

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Cynodon dactylon		Fac	9.		
2. polygonum monspeliensis		FacW	10.		
3. brassica hirta		FacU-	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 66%

Remarks: meets for hydrophytic veg

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: 0 (in.)

Depth to Free Water in Pit: 0 (in.)

Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- X Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- X Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: evidence of ponding during tadp shrimp survey
ponded 2-13-01 to 2-21/01

SOILS

Map Unit Name (Series and Phase): Myford sandy loam 9-30% slope

Drainage Class: moderately well drained

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): typic Pale xeralfs

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-2	A	2.5YR 5/3	5YR 5/8	many distinct	silty clay

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- X Other (Explain in Remarks)

Remarks: Saturated for atleast 7 days (Refer to fairy shrimp results) ponded 2-13-01 - 2-21-01 ↑ 3" depth

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No (Circle)
Wetland Hydrology Present? Yes No
Hydric Soils Present? Yes No

(Circle)
Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: FC South	Date: 7/10/01
Applicant/Owner: TCA	County: Orange
Investigator: Pete Schem, S Young, I Chlup	State: CA
Do Normal Circumstances exist on the site? Yes No	Community ID: FE-19 (site 6)
Is the site significantly disturbed (Atypical Situation)? Yes No	Transect ID:
Is the area a potential Problem Area? Yes No	Plot ID: CP32 wetland 2 (site 1) FEOP 32
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. mulefat - baccaris salicifolia	shrub	facW	9.		
2. ragweed ambrosia	herb	fac	10.		
3. polypogon monspeliensis	herb	facW	11.		
4. juncus mexicanus	herb	ZfacW	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100 %

Remarks: meets for hydrophytic veg

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: 0 (in.)

Depth to Free Water in Pit: ___ (in.)

Depth to Saturated Soil: ___ (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- X Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- X Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: very compacted meets for hydrology

SOILS

Map Unit Name (Series and Phase): Myford Sandy loam 9 to 30% slope

Drainage Class: moderately well drained

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): Typic Palexeralfs

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-6	A	2.5Y 5/4	7.5YR 4/6	common/distinct	silt loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: highly compacted, platey structure w/ mottles
does not meet for soils

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes No (Circle)	
Wetland Hydrology Present?	Yes No	
Hydric Soils Present?	Yes No	
Is this Sampling Point Within a Wetland?		(Circle) Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: FC South	Date: 7/10/01
Applicant/Owner: TCA	County: Orange
Investigator: Klund, Stehenr, Chilup	State: CA
Do Normal Circumstances exist on the site? Yes No	Community ID: FE-19 (site 7)
Is the site significantly disturbed (Atypical Situation)? Yes No	Transect ID:
Is the area a potential Problem Area? Yes No (If needed, explain on reverse.)	Plot ID: CP-32 (wetland 2 (site 2 downstream of pond) FCOP 33

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Black willow Salix gooddingii		OBL	9.		
2. mulefat Baccharis salicifolia		FacW	10.		
3. rabbits-foot grass Polypogon monspeliensis		FacW	11.		
4. saltgrass distichlis spicata		FacW	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: meet for hydrophytic plants

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: 0 (in.)

Depth to Free Water in Pit: 0 (in.)

Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- X Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- X Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: meet for hydric soils

SOILS

Map Unit Name (Series and Phase): Myford Sandy loam 9-30% slope

Drainage Class: moderately well drained

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): typic Palexeralfs

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-4	A	2.5Y 5/3	7.5YR 4/6	common/distinct	sandy clay loam concretions
4-6	B	2.5Y 5/3	7.5YR 4/6	common/distinct	loam coarse sand
6-9	Ab	2.5Y 5/1	7.5YR 4/6	many Armmixed	clay loam
9-16	B	2.5Y 5/3	7.5YR 4/6	common/distinct	loam coarse sand

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: meets for hydric soil

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No	(Circle)
Wetland Hydrology Present?	Yes	No	
Hydric Soils Present?	Yes	No	

(Circle)

Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: FTC Applicant/Owner: TCA Investigator: TCHWP	Date: 9/4/01 County: OR State: CA
Do Normal Circumstances exist on the site? Yes No Is the site significantly disturbed (Atypical Situation)? Yes No Is the area a potential Problem Area? Yes No (If needed, explain on reverse.)	Community ID: FEVMIS Transect ID: Plot ID: FEOP34

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Baccharis salicifolia		FacW	9.		
2. Eleocharis sp		≥FacW	10.		
3. Rhododendron macrophyllum		FacW	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: meets for hydrology

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: _____ (in.)

Depth to Free Water in Pit: _____ (in.)

Depth to Saturated Soil: _____ (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- X Drainage Patterns in Wetlands depressional area

Secondary Indicators (2 or more required):
- X Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:
ponded 2-13 to 2-21

pondy dilly fairy shrimp seasonal

SOILS

Map Unit Name (Series and Phase): Myford Sandy Loam 15 to 30% slope

Drainage Class: moderately drained

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): Typic Palexeralfs

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-4	A	10YR 4/2	7.5YR 4/6	many faint mottle	silty clay

very compacted diffuse to gradual

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

ponded 2-13/01 to 2-21-01

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No (Circle)
Wetland Hydrology Present?	Yes	No
Hydric Soils Present?	Yes	No

(Circle)

Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: FTC Applicant/Owner: TLA Investigator: TC	Date: 8/28/61 County: GVL State: GA
Do Normal Circumstances exist on the site? Yes (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: FE-79 (South of soil pond) Transect ID: Plot ID: FE OP 35

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. L. maximus		facw	9.		
2. Sorghum distichum		OBL	10.		
3. Typha sp		OBL	11.		
4. distichis spicata (fringes)		facw	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-).

Remarks: meets for hydrophytic veg

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: 0 (in.)

Depth to Free Water in Pit: 0 (in.)

Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- X Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- X Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: throughout channel surface water is visible periodically at data pt no surface water is visible } meets for hydrology

SOILS

Map Unit Name (Series and Phase): Mytford sandy loam 15-30% slope

Drainage Class: not well drained

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): Typic Paleoxeralfs

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12	A	10YR 4/2	5YR 4/6	abundant/distinct	silty clay loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

Soil pH 5.0 - 0-12A - oxidized root channels - 10YR 4/2 - mottle 5YR 4/6 silty clay loam

10YR 4/1

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No (Circle)
Wetland Hydrology Present?	Yes	No
Hydric Soils Present?	Yes	No

Is this Sampling Point Within a Wetland? (Circle) Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: FTC	Date: 8/28/01
Applicant/Owner: TCA	County: OR
Investigator: IC	State: CA
Do Normal Circumstances exist on the site? Yes No	Community ID: Confluence CP 25-33 CP 20
Is the site significantly disturbed (Atypical Situation)? Yes No	Transect ID:
Is the area a potential Problem Area? Yes No (If needed, explain on reverse.)	Plot ID: FEOP 36

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Cirsium hydrophilum		OBL	9.		
2. Baccharis salicifolia		FACW	10.		
3. Frankenia Menzesii		upl	11.		
4. Bromus diandrus/hordeaceus		upl	12.		
5. Lolium multiflorum		fac	13.		
6. Polypogon monspeliensis		FACW	14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). _____

Remarks: 4/6 66% hydrophytic - meets for hydrophytic veg

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: 0 (in.)

Depth to Free Water in Pit: 0 (in.)

Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- X Drainage Patterns in Wetlands

bottom of drainage Pb/Root Caps y vandrg

Secondary Indicators (2 or more required):
- X Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: meets for hydrology

SOILS

Map Unit Name (Series and Phase): Myford sandy loam 15 to 30% slope

Drainage Class: mod. well drained

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): Typic Palexeralfs

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12	A	10YR4/2	5YR4/6	few/~20% mottle	sandy clay
				& [illegible]	

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: Vernal pool meets fin soils

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No (Circle)
Wetland Hydrology Present?	Yes	No
Hydric Soils Present?	Yes	No

(Circle)

Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: FTC	Date: 8/28/01
Applicant/Owner: TCA	County: OR
Investigator: TC	State: GA
Do Normal Circumstances exist on the site? Yes (Yes) No	Community ID: FE324
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID:
Is the area a potential Problem Area? Yes (No)	Plot ID: FCOP 37
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. polygonum monophyllum		FACW	9.		
2. Distichlis spicata		FACW	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). _____

Remarks: meets for hydrophytic veg

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: 0 (in.)

Depth to Free Water in Pit: none 0 (in.)

Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:

Primary Indicators: → ponding southend
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- X Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- X Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: meets for hydrology

SOILS

Map Unit Name (Series and Phase): Botella clay loam 9 to 15% slope

Drainage Class: well drained

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): Pachic Argixerolls

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12		10YR 4/2	5YR 4/6	50%/distinct	silty clay loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: meets hydric soils

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No (Circle)
Wetland Hydrology Present?	Yes	No
Hydric Soils Present?	Yes	No

(Circle)

Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: FTC
Applicant/Owner: TCA
Investigator: S. Vouma

Date: 8-29-01
County: OP
State: CA

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID: Cristianitos Site 1
Transect ID:
Plot ID: #2 FC OP 38

Christianitos near Confluence OD/CP 39/40.

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Polypogon monspeliensis	H	FACW	9.		
2. Xanthium strumarium	H	FAC+	10.		
3. Eleocharis	H	FACW	11.		
4. Juncus sp	H	FACW	12.		
5. Cyperus sp	H	FACW	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 5/5 = 100%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
X No Recorded Data Available

Field Observations:

Depth of Surface Water: / (in.)

Depth to Free Water in Pit: / (in.)

Depth to Saturated Soil: / (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
X Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
X Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: Broad, Shallow depression in channel.

SOILS

Map Unit Name (Series and Phase): Botella loam 2 to 9% slope

Drainage Class: well drained

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): Pachic Argixerolls

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-6	A	10YR 4/3	7.5YR 3/4	Many, distinct	Coarse Sand

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- X Other (Explain in Remarks)

Remarks: Redox Concentrations in Sandy Soil.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No	(Circle)
Wetland Hydrology Present?	Yes	No	
Hydric Soils Present?	Yes	No	

(Circle)

Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: FTC Applicant/Owner: TCA Investigator: S. Young & P. Schert	Date: 7.16.01 County: OR State: CA
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Map 9 Plot ID: B 1 FROP 40

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Urtica dioica	H	FACW	9.		
2. Typha angustifolia	H	OBL	10.		
3. Cyperus sp.	H	FACW	11.		
4. Plantago sp.	H	FACW	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 4/4 = 100%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: / (in.)

Depth to Free Water in Pit: 0 (in.)

Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- X Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: Saturated to Surface from groundwater seep w/in Channel.

SOILS

Map Unit Name (Series and Phase): Ruewash

Drainage Class: _____

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): _____

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-16+	C	high Chroma	—	NONE	Coarse Sand

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- X Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: Meets hydric Soil Criteria based on Saturated Condition ~~in upper~~ to Surface in July.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No	(Circle)
Wetland Hydrology Present?	Yes	No	
Hydric Soils Present?	Yes	No	

Is this Sampling Point Within a Wetland? (Circle) Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: FTC	Date: 7.17.01
Applicant/Owner: TCA	County: OR
Investigator: Sylvang & DiSchert	State: CA
Do Normal Circumstances exist on the site? (Yes) No	Community ID:
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID: Wet 9
Is the area a potential Problem Area? Yes (No)	Plot ID: B2
(If needed, explain on reverse.)	FEOPAT

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Typha sp.	H	OBL	9.		
2. Eleocharis acicularis	H	OBL	10.		
3. Cyperus sp.	H	FACW	11.		
4. Juncus rugulosis	H	OBL	12.		
5. Epilobium Ciliatum	H	FACW	13.		
6. Nasturtium sp.	H	OBL	14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 46 = 100%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: ~6 (in.) Flowing or low-Flow Channel

Depth to Free Water in Pit: 0 (in.)

Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- X Inundated
- X Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: Located w/in Flow Low Flow Channel w/ Cattail, etc.

SOILS

Map Unit Name (Series and Phase): Riverwash

Drainage Class: _____

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): _____

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-2+	O	Chroma <1	organics		Muck
2-16+	A				Clear Sand

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- X Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- X High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: Mucky organic layer above alluvial Sands.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No	(Circle)
Wetland Hydrology Present?	Yes	No	
Hydric Soils Present?	Yes	No	

(Circle)

Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Corridor	Date: 7-17-01
Applicant/Owner: TCA	County: OR
Investigator: S. Young & P. Schaefer	State: CA
Do Normal Circumstances exist on the site? Yes No	Community ID:
Is the site significantly disturbed (Atypical Situation)? Yes No	Transect ID: Map 9
Is the area a potential Problem Area? Yes No	Plot ID: F1
(If needed, explain on reverse.)	FEOP 42

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Salix goodingii	T	OBL	9.		
2. Salix laseolepis	T	FACW	10.		
3. Typha sp.	H	OBL	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 3/3 = 100%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: ~2 (in.)

Depth to Free Water in Pit: 0 (in.)

Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- X Inundated
- X Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- X Sediment Deposits
- X Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: Stormwater outlet, Sediment deposition from Construction above.

SOILS

Map Unit Name (Series and Phase): Sorento loam 2 to 9% slopes

Drainage Class: well drained

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): Calcic Haploxerolls

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-6+	A	Chroma ≤ 2	—	—	SCL

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- X Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: Meets hydric Soil Criteria based on Low Chroma & Sulfitic Odor.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes (circled)	No (Circle)
Wetland Hydrology Present?	Yes	No
Hydric Soils Present?	Yes	No

(Circle)

Is this Sampling Point Within a Wetland? Yes (circled) No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: FTC	Date: 9/4/01
Applicant/Owner: TCA	County: OR
Investigator: TCHLIP	State: CA
Do Normal Circumstances exist on the site? Yes (circled) No	Community ID: F (map 1)
Is the site significantly disturbed (Atypical Situation)? Yes No (circled)	Transect ID: eastern edge willow wetland
Is the area a potential Problem Area? Yes No (circled)	Plot ID: SDP 43
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Salix lasiolepis		FACW	9.		
2. Picris echioides		fac	10.		
3. ambrosia psilostachya		Fac	11.		
4. toxicodendron diversilobum		upl	12.		
5. xanthium strumarium		fact	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 80%

Remarks: hydrophytic veg

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: ___ (in.)

Depth to Free Water in Pit: ___ (in.)

Depth to Saturated Soil: ___ (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- X Sediment Deposits
- X Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: pit 6 feet North of inundated stream bed

SOILS

Map Unit Name (Series and Phase): Sorento loam 2 to 9% slopes

Drainage Class: well drained

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): Calcic Haploxerolls

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
6-12		5YR 4/1	none		clay
0-6		high chroma	none		silt

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: meets for hydric soils

adventitious mots present within indicates prolonged saturati

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No (Circle)
Wetland Hydrology Present?	Yes	No
Hydric Soils Present?	Yes	No

(Circle)

Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: FtC	Date: 8/31/01
Applicant/Owner: TCA	County: OR
Investigator: RC/SK	State: CA
Do Normal Circumstances exist on the site? **Yes** No	Community ID: CP47 FE-30
Is the site significantly disturbed (Atypical Situation)? Yes **No**	Transect ID:
Is the area a potential Problem Area? Yes **No**	Plot ID: FCOP 44
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. tamarix sp		Zfac	9.		
2. polypogon monspeliensis		facW	10.		
3. distichlis spicata		facW	11.		
4. xanthium strumarium		Fact	12.		
5. raguria & ambrosia psilostachia		fac	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: meets for veg

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: 2 (in.)

Depth to Free Water in Pit: 0 (in.)

Depth to Saturated Soil: at surface 0 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- X Inundated
- X Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- X Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: meets for hydrology

SOILS

Map Unit Name (Series and Phase): Diablo clay 9 to 15% 2 to 9% slopes

Drainage Class: well drained

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): Chromic Pellixerents

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-16	A	10YR 3/1 Gley1	none		mucky loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- X Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- X High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: meets for hydric soils

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No (Circle)
Wetland Hydrology Present?	Yes	No
Hydric Soils Present?	Yes	No

(Circle)

Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

organic soil with thing black

organics - black streaks

/ steel gray reduced iron

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: FTC
Applicant/Owner: TCA
Investigator: Tchlip/S. Young

Date: 8/31/01
County: OR
State: CA

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID: CP47a [FC-30a]
Transect ID:
Plot ID: FEOP 45

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. typha domingensis		OBL	9.		
2. distichlis spicata		FacW	10.		
3. Sonchus oleraceus		NI	11.		
4. melilotus alba		FacU	12.		
5. baccharis salicifolia		FacW	13.		
6. amyg willow/Salix laevigata		FacW	14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 4/6 = 66%

Remarks: veg continued downslope to confluence
meets for hydrophytic veg

✓ picture for overhead #5

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
___ No Recorded Data Available

Field Observations:

Depth of Surface Water: 0 (in.)
Depth to Free Water in Pit: 8 (in.)
Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
X Inundated in depression
X Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
X Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: meets for hydrology

SOILS

Map Unit Name (Series and Phase): terrace escarpments

Drainage Class: _____

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): _____

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-16	A	10YR 4/1 gley 1	7.5YR 4/6	many/prominent	sandy clay loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- X Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- X Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: meets for soils

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No (Circle)
Wetland Hydrology Present?	Yes	No
Hydric Soils Present?	Yes	No

(Circle)

Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

few 5/10 common ~15-20% / faint distinct

cmentrated/ clay [illegible]

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: FTC
Applicant/Owner: TMA
Investigator: Tchlin & Wirm

Date: 8/31/01
County: OR
State: CA

Do Normal Circumstances exist on the site? Yes No
Is the site significantly disturbed (Atypical Situation)? Yes No
Is the area a potential Problem Area? Yes No
(If needed, explain on reverse.)

Community ID: CPVM16a FEVM16
Transect ID:
Plot ID: FP OP - 46

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Xanthium strumarium		Fac+	9.		
2. J. mexicanus		FacW	10.		
3. Cyperus salicetaria fringe		FacW	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: meet for hydrophytic veg

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
___ No Recorded Data Available

Field Observations:

Depth of Surface Water: 0 (in.)
Depth to Free Water in Pit: 0 (in.)
Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
X Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
X Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: lots of fairy shrimp & sunflower observed to pond 2/21/01 to 4/9/01

SOILS

Map Unit Name (Series and Phase): terrace escarpment

Drainage Class: _____

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): _____

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-8	A	10YR 3/1	7.5YR 4/6	many/prominent	

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- X Other (Explain in Remarks)

Remarks: Hydric based on soil indicators also pended 2-21-01 to 4-8-01

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No (Circle)
Wetland Hydrology Present? Yes No
Hydric Soils Present? Yes No

(Circle)
Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: FTC
Applicant/Owner: TNA
Investigator: Schumpert, Young

Date: 8/31/01
County: OR
State: CA

Do Normal Circumstances exist on the site? Yes (circled) No
Is the site significantly disturbed (Atypical Situation)? Yes No (circled)
Is the area a potential Problem Area? Yes No (circled)
(If needed, explain on reverse.)

Community ID: CPVM16 FEVM17
Transect ID:
Plot ID: FEOP47

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. Xanthium strumarium		FACU+
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks: meet for hydrophytic veg

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
___ No Recorded Data Available

Field Observations:

Depth of Surface Water: / (in.)

Depth to Free Water in Pit: / (in.)

Depth to Saturated Soil: / (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
X Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
X Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: observed to pond 2/13/01 to 5/15/01

SOILS

Map Unit Name (Series and Phase): Hemale escarpment

Drainage Class: _____

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): _____

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12	A	N2.5/1 gley 1	w/mottles	few/distinct	clay

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- X Other (Explain in Remarks)

Remarks: Hydric based on soil indicators also parcel 2-13-01 + 5-18-01

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No (Circle)
Wetland Hydrology Present?	Yes	No
Hydric Soils Present?	Yes	No

(Circle)

Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: FTC	Date: 8/31/01
Applicant/Owner: TCA	County: OR
Investigator: I Chilip / S. Porter	State: CA
Do Normal Circumstances exist on the site? **Yes** No	Community ID: CPVM1b FEVM18
Is the site significantly disturbed (Atypical Situation)? Yes **No**	Transect ID:
Is the area a potential Problem Area? Yes **No**	Plot ID: Fe OP 49
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. xanthium strumarium		facu	9.		
2. brassica nigra		upl	10.		
3. alkali mallow Malvella leprosa		fac	11.		
4. gnaphalium luteo-album		facw	12.		
5. polygonum monspeliensis		facw	13.		
6. echinochloa sp		2facw	14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 5/6 83%

Remarks: meets for hydrophytic veg

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: _____ (in.)

Depth to Free Water in Pit: _____ (in.)

Depth to Saturated Soil: _____ (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- X Drainage Patterns in Wetlands depressional area

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: However, not observed to pond in Spring 2001 during fairy shrimp survey (observed to pond in 1995)

SOILS

Map Unit Name (Series and Phase): Alamoto Clay 30 to 50% slope

Drainage Class: well drained

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): Typic Chromoxererts

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-4	A	CHROMA < 2	w/mottles		

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: hydric based on low chroma mottles/g

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes No	(Circle)
Wetland Hydrology Present?	Yes No	
Hydric Soils Present?	Yes No	

(Circle)

Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: FTC	Date: 8/31/01
Applicant/Owner: TCA	County: OR
Investigator: Tchlinp/S, Town	State: CA
Do Normal Circumstances exist on the site? (Yes) No	Community ID: CPVPM17 FEVM19
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID:
Is the area a potential Problem Area? Yes (No)	Plot ID: Feop 49
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Xanthium strumarium		fac+	9.		
2. brassica nigra		upl	10.		
3. alkali mallow malvella leprosa		fac	11.		
4. gnaphalium tuteo-album		facW	12.		
5. polypogon monspeliensis		facW	13.		
6. echinochloa sp		Zfacw	14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 5/6 83%

Remarks: meets for hydrophytic veg

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: _____ (in.)

Depth to Free Water in Pit: _____ (in.)

Depth to Saturated Soil: _____ (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- X Drainage Patterns in Wetlands depressional area

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: observed to pond 2-21-01 to 4-4-01

SOILS

Map Unit Name (Series and Phase): alamoochaw 30 to 50% slope

Drainage Class: well drained

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): typic Chromoxerept

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-4	A	chroma <2	w/ mottle		

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: Hydric based on low chroma & mottle

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No (Circle)
Wetland Hydrology Present?	Yes	No
Hydric Soils Present?	Yes	No

(Circle)

Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: FTC Applicant/Owner: TCA Investigator: IC/Scott Hotlinek	Date: 8/23/01 County: OR State: CA
Do Normal Circumstances exist on the site? Yes No Is the site significantly disturbed (Atypical Situation)? Yes No Is the area a potential Problem Area? Yes No (If needed, explain on reverse.)	Community ID: San Mateo Transect ID: Underbridge I-5 Plot ID: FOP So

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Cyperus sp.		≥ FacW	9.		
2. Salix lasiolepis		FacW	10.		
3. J. mexicanus		FacW	11.		
4. Red willow Salix laevigata		FacW+	12.		
5. epilobium ciliatum		FacW	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: meets for hydrophytic vegetation

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: / (in.)

Depth to Free Water in Pit: / (in.)

Depth to Saturated Soil: 6 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- X Inundated
- X Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- X Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: pit on fringe of flowing creek meets for hydrology

SOILS

Map Unit Name (Series and Phase): Riverwash

Drainage Class: _____

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): _____

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-2	A	5Y 4/2	2.5Y 6/6	few/faint	silty clay loam ~~coarse sand~~
2-6	B	mineral grains	10YR 5/8	common/distinct	coarse sand

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- X High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: meets for hydric soils

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes No	(Circle)
Wetland Hydrology Present?	Yes No	
Hydric Soils Present?	Yes No	

(Circle)

Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: FTC	Date: 8/23/01
Applicant/Owner: TCA	County: OR
Investigator: TC, Scott Holbrook	State: CA
Do Normal Circumstances exist on the site? Yes No	Community ID: San Mateo wetlands
Is the site significantly disturbed (Atypical Situation)? Yes No	Transect ID:
Is the area a potential Problem Area? Yes No (If needed, explain on reverse.)	Plot ID: Feop 52

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Salix lasiolepis	T	FacW	9.		
2. baccharis salicifolia		FacW	10.		
3. Solanum sp.		NI-Fact	11.		
4. Echinachloa sp		ΣFacW	12.		
5. polygonum lapathifolium		OBL	13.		
6. scirpus californicus		OBL	14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). _____

Remarks: > 5/6 hydrophytic

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: — (in.)

Depth to Free Water in Pit: — (in.)

Depth to Saturated Soil: — (in.)

Wetland Hydrology Indicators:

Primary Indicators: likely

- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- X Drift Lines
- X Sediment Deposits
- X Drainage Patterns in Wetlands → channel w/ shelly debris tracks

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name (Series and Phase): ~~Rumpus~~ tidal flats

Drainage Class: well drained

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup):

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12	A			none	silt/sand

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- X Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: observed ~~Rumpus~~ hydric

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes No (Circle)	
Wetland Hydrology Present?	Yes No	
Hydric Soils Present?	Yes No	
Is this Sampling Point Within a Wetland?	Yes No (Circle)	

Remarks: Hydric soils assumed w/ expectation of consistently high water table in rainy season (more than 30 consecutive days most years) ⇒ aquic or peraquic moisture regime

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: FTC	Date: 8/31/01
Applicant/Owner: TCA	County: OR
Investigator: Ichlup/S. Young	State: AL
Do Normal Circumstances exist on the site? **Yes** No	Community ID: Sandhills wetland Site B
Is the site significantly disturbed (Atypical Situation)? Yes **No**	Transect ID:
Is the area a potential Problem Area? Yes **No**	Plot ID: FCOP S3
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Lin tulip		OBL	9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-).

Remarks: No understory vegetation CWD/litter cover

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: / (in.)

Depth to Free Water in Pit: / (in.)

Depth to Saturated Soil: / (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- X Sediment Deposits
- X Drainage Patterns in Wetlands depressions

Secondary Indicators (2 or more required):
- X Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: soils damp / algae mats

SOILS

Map Unit Name (Series and Phase): tidal flats

Drainage Class: _____

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): _____

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12	A	2.5Y 3/1	7.5YR 4/6	common/prominent	fine sand to clay, layered
12-16					sand interbedded

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: layers of fine sand interbedded w/ silt layers & buried organics/detritus mixed

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No	(Circle)
Wetland Hydrology Present?	Yes	No	
Hydric Soils Present?	Yes	No	

(Circle)

Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: FTC Applicant/Owner: TCA Investigator: I Chlup	Date: 9/5/01 County: OR State: CA
Do Normal Circumstances exist on the site? **Yes** No Is the site significantly disturbed (Atypical Situation)? Yes **No** Is the area a potential Problem Area? Yes **No** (If needed, explain on reverse.)	Community ID: CPVm18 FEVM20 Transect ID: Plot ID: FEOP 54

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Ambrosia psilostachya		FACW	9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). _____

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: ___/___ (in.)

Depth to Free Water in Pit: ___/___ (in.)

Depth to Saturated Soil: ___/___ (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: ponding 2-13-01 to 2-21-01 after C

SOILS

Map Unit Name (Series and Phase): Visalia sandy loam 2 to 5 % slopes

Drainage Class: _____

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): Pachic Haploxerolls

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
					Sandy loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: ponding 7 than 7 days minimum observed ponded film 2-13 to 2-21

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No (Circle)
Wetland Hydrology Present? Yes No
Hydric Soils Present? Yes No

(Circle)
Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: FTC
Applicant/Owner: TCA
Investigator: Tchlup

Date: 9/5/01
County: OR
State: CA

Do Normal Circumstances exist on the site? Yes (No)
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID: CPVP A FEVP 3
Transect ID:
Plot ID: FEDP SS

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Polygonum monspeliensis		facw	9.		
2. Spergularia bocconii		fac	10.		
3. Hypochaeris glabra		upl	11.		
4. Juncus effusus		facw	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 75%

Remarks: meet for hydrophytic veg

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
___ No Recorded Data Available

Field Observations:

Depth of Surface Water: / (in.)

Depth to Free Water in Pit: / (in.)

Depth to Saturated Soil: / (in.)

Wetland Hydrology Indicators:
Primary Indicators:
X Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: observed to be ponded from 2-13 to 2-21/01

see fairy shrimp data

SOILS

Map Unit Name (Series and Phase): Visalia sandy loam 2 to 8% slope

Drainage Class: _____

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): Pachic Haploxerolls

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
surface		10YR3/2	5YR4/6	faint, many	sandy loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- X Other (Explain in Remarks)

Remarks: ponded for a minimum of 7 days: from 2/13/01 to 2/21/01

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No (Circle)
Wetland Hydrology Present?	Yes	No
Hydric Soils Present?	Yes	No

(Circle)

Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: FTC
Applicant/Owner: TCA
Investigator: Echlup

Date: 9/5/01
County: OR
State: CA

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID: CPVSP FEVP4
Transect ID:
Plot ID: FEVP 36

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Rumex crispus		FACW	9.		
2. polypogon monspeliensis		FACW	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100 %

Remarks: meets for hydrophytic veg

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
___ No Recorded Data Available

Field Observations:

Depth of Surface Water: / (in.)
Depth to Free Water in Pit: / (in.)
Depth to Saturated Soil: / (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
X Drainage Patterns in Wetlands depressn
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: observed ponded from 2-13 to 2-21 refer to fairy shrimp survey data for pondg info

SOILS

Map Unit Name (Series and Phase): Visalia sandy loam 2 to 5 % slope

Drainage Class: _____

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): Pachic Haploxerolls

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-4		7.5YR 4/2		all oxidized	clay loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- X Listed on National Hydric Soils List
- X Other (Explain in Remarks)

Remarks: minimum of 7 days saturation - observed ponded from 2-13/01 to 2/21/01

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No (Circle)
Wetland Hydrology Present?	Yes	No
Hydric Soils Present?	Yes	No

(Circle)

Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

FE/7-7

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Dana O'Neil Conservancy Applicant/Owner: TCA Investigator: S Young & D. Maskaitz	Date: 6-4-04 County: OR State: CA
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: 1

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Cyperus eragrostis	H	FACW	9.		
2. Salix lasiolepis	T/S	FACW	10.		
3. Rubus ursinus	H	FAC	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 3/3 = 100%

Remarks: Meets vegetation Criteria.

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: 2" (in.)

Depth to Free Water in Pit: 0 (in.)

Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- X Inundated
- X Saturated in Upper 12 Inches
- X Water Marks
- X Drift Lines
- X Sediment Deposits
- X Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: Meets hydrology criteria. Located w/in channel. Vegetated across channel floor & standing/slowly flowing wtr. present.

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____
Field Observations
Confirm Mapped Type? Yes No

Taxonomy (Subgroup): _____

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-6	A	2.5Y 3/2	—	—	Mucky Sand

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- X High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- X Other (Explain in Remarks)

Remarks: Saturated for very long duration.
Meets hydric Soils Criteria.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No (Circle)
Wetland Hydrology Present?	Yes	No
Hydric Soils Present?	Yes	No

(Circle)
Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: TCA/San Mateo Creek
Applicant/Owner:
Investigator: D. Moskowitz, D. Schore

Date: 8/1/
County: Orange
State: CA

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? Yes No
(If needed, explain on reverse.)

Community ID: ~~Sandbar 1-5~~ SanM 5m2
Transect ID:
Plot ID: FCOP 51

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. Salix Lucida		OBL
2. Salix Lasiolepis		FACW
3. Typha Domingensis		OBL
4. Juncus Americanus		OBL
5. Eleocharis Acicularis		OBL
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 5/5 = 100% of Dom are Facor Wetter

Remarks: Meet Criteria for Hydrophytic Veg.

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
___ No Recorded Data Available

Field Observations:

Depth of Surface Water: \ (in.)

Depth to Free Water in Pit: \ (in.)

Depth to Saturated Soil: \ (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
✓ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: Meets for Hydrology

SOILS

Map Unit Name (Series and Phase): Riverwash

Drainage Class:

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup):

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-16	A1	10YR 4/3	No Mottles		Coarse Sand

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ✓ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No (Circle)
Wetland Hydrology Present? Yes No
Hydric Soils Present? Yes No

(Circle)
Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

SOCTIIP AERIAL OVERLAY

c:GIS PROJECTS/0019-9FOOT/2004delineation/060924AerialBoth.mxd August 6, 2004 (KC)

SOCTIIP AERIAL OVERLAY

N

700 350 0 700 Feet

Legend

- Combined Ultimate Grading Limits
- Sample Refined Grading Limits
- San Juan/San Mateo Watershed Boundary

SHEET 1

SHEET 2

KEY MAP

ACOE-SAMP Hydrogeomorphic Overlay and SOCTIIP 2004 Delineation

KEY MAP

SHEET 1

SHEET 2

N

700 350 0 700 Feet

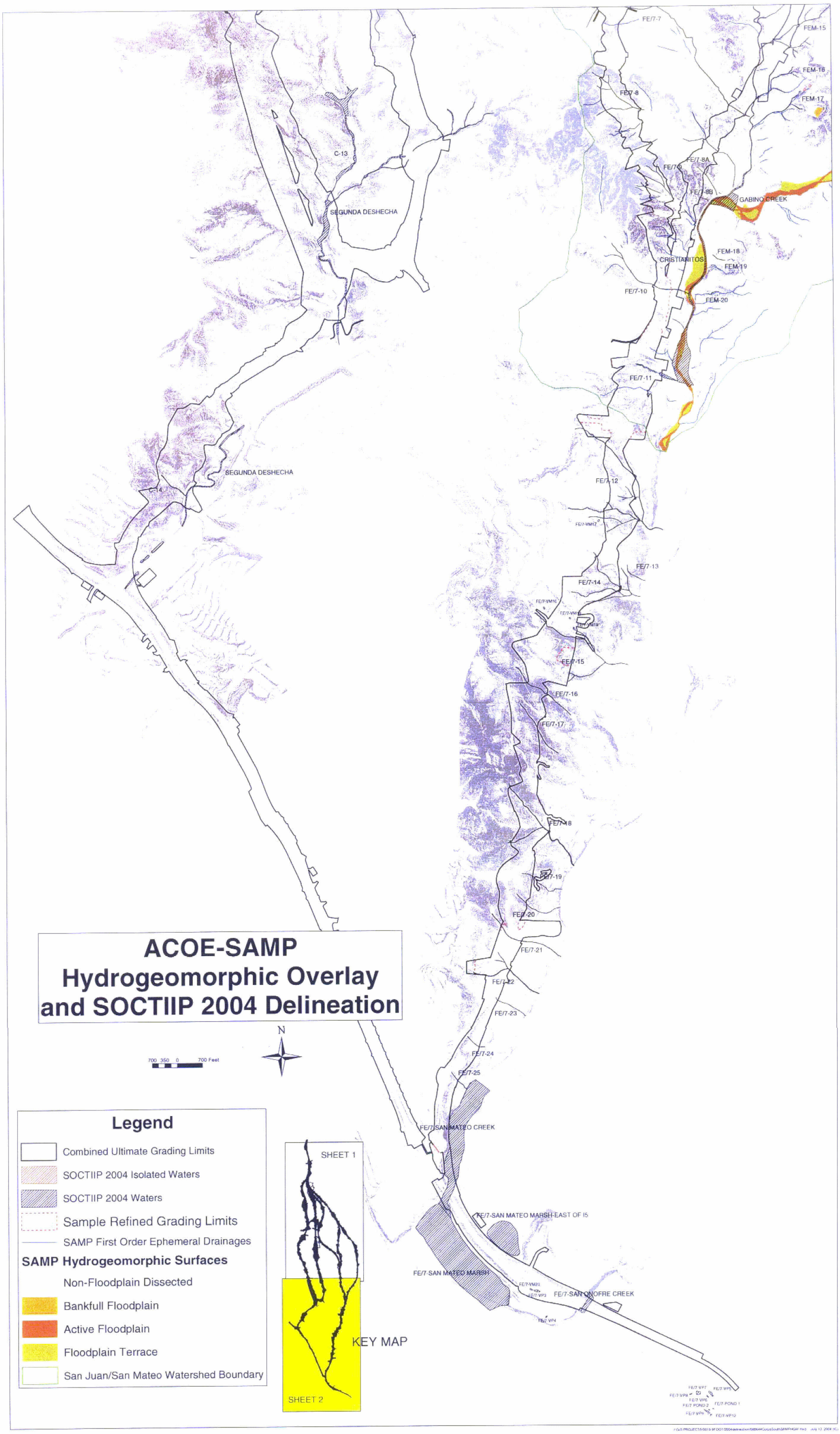
Legend

- Combined Ultimate Grading Limits
- SOCTIIP 2004 Isolated Waters
- SOCTIIP 2004 Waters
- Sample Refined Grading Limits
- SAMP First Order Ephemeral Drainages

SAMP Hydrogeomorphic Surfaces

- Non-Floodplain Dissected
- Bankfull Floodplain
- Active Floodplain
- Floodplain Terrace
- San Juan/San Mateo Watershed Boundary

FE/C/7-WETLAND 1
FE/C/7-1
FE/C/7-WETLAND 2
FE/C/7-2
FE/C/7-3
FE/C/7-4
FE/7-1
FE/7-2
FE-1
C-1
C-WETLAND 1
C-2
C-3
FE-2
FE-WETLAND 1
FE-2A
FE-POND 1
FE-2B
FE-3
7-1
7-2
FE-4
FE-WETLAND 2
C-4
FE-5
CANADA CHIQUITA
FE-6
7-3
FEW-1
C-5
C-WETLAND 2
7-4
7-3
C-6
7-6
FE-7
FEM-1
7-7
C-SAN JUAN CREEK
7-SAN JUAN CREEK
C-POND 1
C-6B
7-8
FEM-2
FEM-3
7-9
7-11
C-7
C-8
7-10
7-12
FEW- SAN JUAN CREEK
FEM-SAN JUAN CREEK
C-9
FEM-10
FEW-2
7-13
FE/7-3
C-10
7-14
FE/7-3
C-11
FEM-11
FE/7-4
FE/7-5
7-15
FE/7-6
FEM-12
C-12
FEM-13
7-16
FEM-14


ACOE-SAMP
Hydrogeomorphic Overlay
and SOCTIIP 2004 Delineation
N
700 350 0 700 Feet
Legend
Combined Ultimate Grading Limits
SOCTIIP 2004 Isolated Waters
SOCTIIP 2004 Waters
Sample Refined Grading Limits
SAMP First Order Ephemeral Drainages
SAMP Hydrogeomorphic Surfaces
Non-Floodplain Dissected
Bankfull Floodplain
Active Floodplain
Floodplain Terrace
San Juan/San Mateo Watershed Boundary
SHEET 1
SHEET 2
KEY MAP
C-13
C-14
SEGUNDA DESHECHA
SEGUNDA DESHECHA
FE/7-7
FEM-15
FEM-16
FEM-17
FE/7-8
FE/7-8A
FE/7-9
FE/7-9B
GABINO CREEK
CRISTIANITOS
FEM-18
FEM-19
FEM-20
FE/7-10
FE/7-11
FE/7-12
FE/7-VM17
FE/7-13
FE/7-14
FE/7-VM16
FE/7-VM18
FE/7-VM19
FE/7-15
FE/7-16
FE/7-17
FE/7-18
FE/7-19
FE/7-20
FE/7-21
FE/7-22
FE/7-23
FE/7-24
FE/7-25
FE/7-SAN MATEO CREEK
FE/7-SAN MATEO MARSH-EAST OF I5
FE/7-SAN MATEO MARSH
FE/7-VM20
FE/7-VP3
FE/7-SAN ONOFRE CREEK
FE/7-VP4
FE/7-VP7
FE/7-VP5
FE/7-VP8
FE/7-VP6
FE/7-POND 1
FE/7-POND 2
FE/7-VP9
FE/7-VP12

San Juan/San Mateo Creek SAMP Delineation of Riparian Resources and Waters of the US and SOCTIIP 2004 Delineation

KEY MAP

SHEET 1

SHEET 2

700 350 0 700 Feet

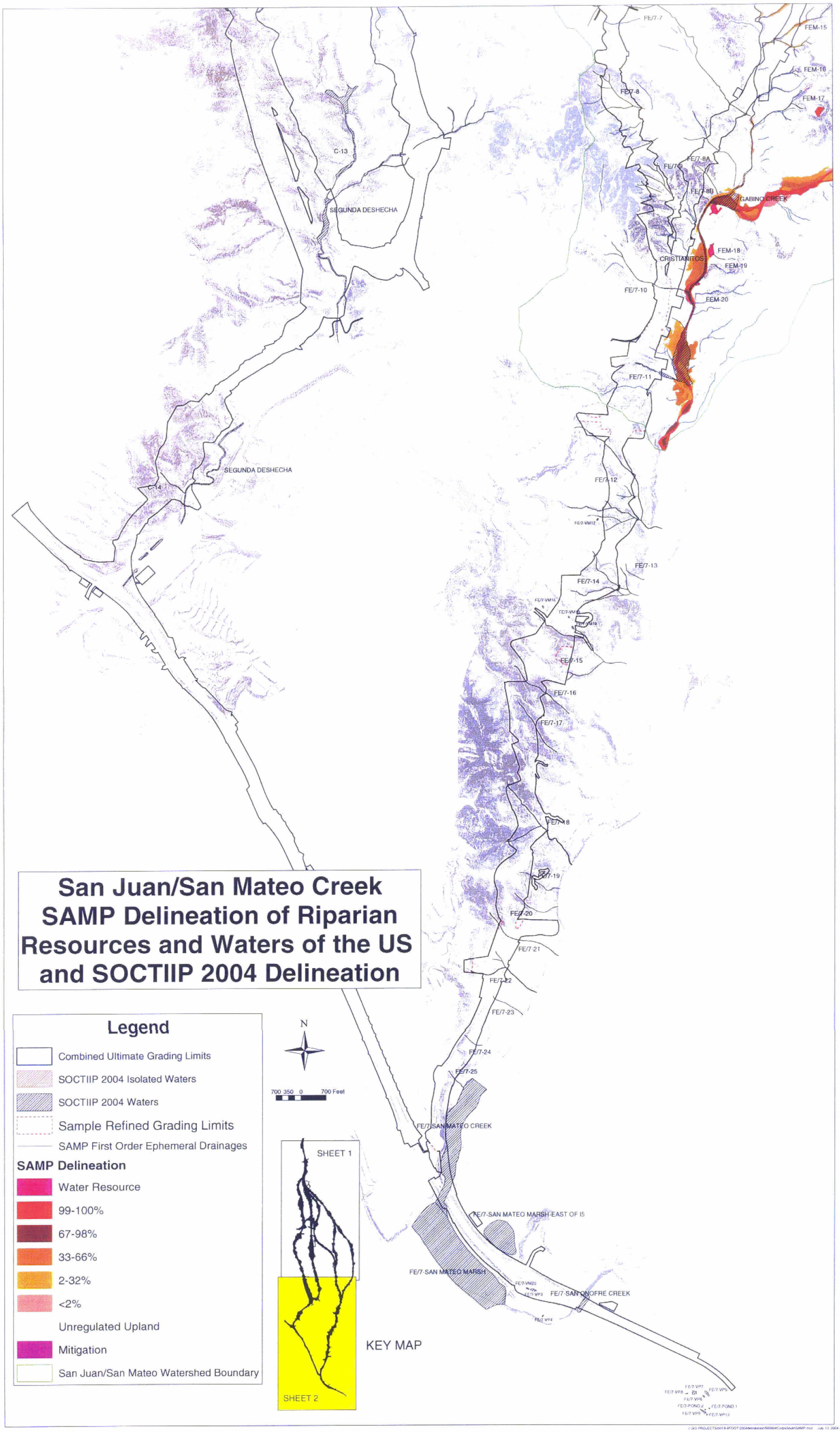
Legend

- Combined Ultimate Grading Limits
- SOCTIIP 2004 Isolated Waters
- SOCTIIP 2004 Waters
- Sample Refined Grading Limits
- SAMP First Order Ephemeral Drainages

SAMP Delineation

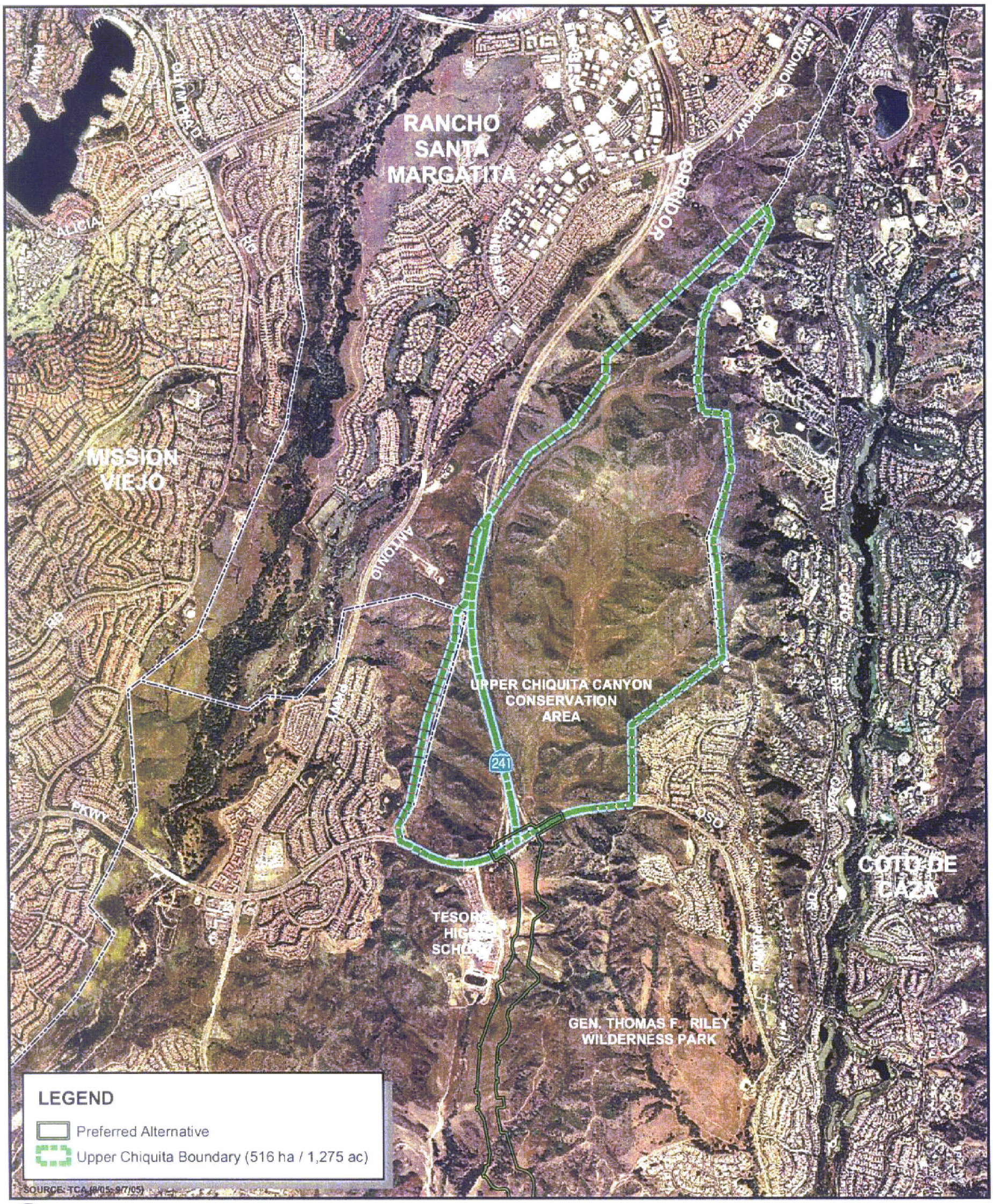
- Water Resource
- 99-100%
- 67-98%
- 33-66%
- 2-32%
- <2%
- Unregulated Upland
- Mitigation
- San Juan/San Mateo Watershed Boundary

FE/C/7-WETLAND 1
FE/C/7-1
FE/C/7-WETLAND 2
FE/C/7-2
FE/C/7-3
FE/C/7-4
FE/7-1
FE/7-2
FE-1
C-1
C-WETLAND 1
C-2
C-3
FE-2
FE-WETLAND 1
FE-2A
FE-POND 1
FE-2B
FE-3
7-1
7-2
FE-4
FE-WETLAND 2
C-4
FE-5
CANADA CHIQUITA
FE-6
7-3
FEW-1
C-5
C-WETLAND 2
7-4
7-5
7-6
C-6
FE-7
FEM-1
C-SAN JUAN CREEK
7-7
7-SAN JUAN CREEK
C-6B
C-POND 1
FEM-2
FEM-3
7-8
7-9
7-11
C-7
C-8
7-10
7-12
FEW- SAN JUAN CREEK
FEM- SAN JUAN CREEK
C-9
FEM-10
FEW-2
7-13
FE/7-3
C-10
7-14
FE/7-3
C-11
FEM-11
FE/7-4
7-15
FE/7-5
FE/7-6
FEM-12
C-12
FEM-13
7-16
FEM-14


San Juan/San Mateo Creek
SAMP Delineation of Riparian
Resources and Waters of the US
and SOCTIIP 2004 Delineation
Legend
Combined Ultimate Grading Limits
SOCTIIP 2004 Isolated Waters
SOCTIIP 2004 Waters
Sample Refined Grading Limits
SAMP First Order Ephemeral Drainages
SAMP Delineation
Water Resource
99-100%
67-98%
33-66%
2-32%
<2%
Unregulated Upland
Mitigation
San Juan/San Mateo Watershed Boundary
N
700 350 0 700 Feet
SHEET 1
SHEET 2
KEY MAP
C-13
SEGUNDA DESHECHA
SEGUNDA DESHECHA
FE/7-7
FE/7-8
FE/7-8A
FE/7-8B
GABINO CREEK
CRISTIANITOS
FEM-15
FEM-16
FEM-17
FEM-18
FEM-19
FEM-20
FE/7-10
FE/7-11
FE/7-12
FE/7-13
FE/7-14
FE/7-15
FE/7-16
FE/7-17
FE/7-18
FE/7-19
FE/7-20
FE/7-21
FE/7-22
FE/7-23
FE/7-24
FE/7-25
FE/7-SAN MATEO CREEK
FE/7-SAN MATEO MARSH-EAST OF I5
FE/7-SAN MATEO MARSH
FE/7-SAN ONOFRE CREEK

Attachment 13

Map: Upper Chiquita Canyon Conservation Area /Mitigation Bank



Location of Upper Chiquita Canyon Conservation Area

SOCTIIP EIS/SEIR

Attachment 13

Attachment 14

Wetlands Delineation Technical Report Addendum, GLA

ADDENDUM TO
JURISDICTIONAL DETERMINATION AND WETLANDS DELINEATION TECHNICAL ASSESSMENT

FOR

IMPACTS ASSOCIATED WITH THE SOUTH ORANGE COUNTY TRANSPORTATION INFRASTRUCTURE IMPROVEMENT PROJECT

[Revised April 6, 2005]

PREFERRED ALTERNATIVE

September 26, 2005

Prepared for:

Foothill/Eastern Transportation Corridor Agency
Contacts: Macie Cleary-Milan
125 Pacifica, Suite 100
Irvine California 92618-3304
Telephone: (949) 754-3481

Prepared by:

Glenn Lukos Associates, Inc.
29 Orchard
Lake Forest, CA 92630
Contact: Ingrid Chlup and Tom Mullen
Telephone: (949) 837-0404

GLA prepared an addendum to the Jurisdictional Determination and Wetlands Delineating Technical Assessment in September 2005. The Addendum provides additional impact analysis for the Preferred Alternative. The impact analysis below addresses the Preferred Alternative disturbance limits for which permits are being sought at this time. Impact totals represent the surface area subject to regulation by the various agencies and do not represent a relative assessment of function. This analysis assumes that all drainages within the disturbance limits are permanently filled, except for those that will be bridged. For bridges, the small area of impact where the support columns are founded into the ground have been included as permanent impacts, while the remaining bridge right of way is assumed to be temporarily impacted for piling installation although the bridge structure will span over the open terrain. Although the other reaches will be filled, cross-culverts will be installed at the majority of drainages allowing for the retention of significant hydrologic function.

The following impacts are based upon the Preferred Alternative disturbance limits. Permanent impacts are summarized in Table 1. Temporary impacts are summarized in Table 2. The ACOE, CDFG and CCC regulate many of the same features; therefore, jurisdictional impact totals for the various agencies do overlap and should not be considered mutually exclusive.

The Preferred Alternative will permanently impact approximately 6.27 acres subject to Corps jurisdiction. This total consists of 0.82 acre of wetland and 5.45 acres of non-wetland waters.

The Preferred Alternative will temporarily impact approximately 9.44 acres subject to Corps jurisdiction. This total consists of 6.73 acre of wetland and 2.71 acres of non-wetland waters.

The Preferred Alternative will permanently impact 23.08 acres subject to CDFG jurisdiction. This total consists of 20.37 acres of vegetated riparian habitat and 2.71 acres of unvegetated streambed.

The Preferred Alternative will temporarily impact approximately 14.37 acres subject to CDFG jurisdiction, of which 14.34 acres consists of vegetated riparian habitat.

The Preferred Alternative will permanently impact approximately 0.46 acre subject to CCC jurisdiction. This total all consists of areas that qualify as CCC wetlands based on the presence of one parameter out of three possible parameters (soils, hydrology, plants).

The Preferred Alternative will temporarily impact approximately 6.44 acres subject to CCC jurisdiction. This total all consists of areas that qualify as CCC wetlands based on the presence of one parameter out of three possible parameters (soils, hydrology, plants).

Table 4.10-1
Permanent Jurisdictional Impacts
Preferred Alternative
(in acres)

Jurisdictional Feature[1]	Resource Type	Corps			CDFG		
		Wetlands	Non-wetland Waters	Total	Vegetated Unvegetated	Streambed	Total
FE/C/7-1	Ephemeral	0.00	0.02	0.02	0.41	0.01	0.42
FE/7-1	Ephemeral	NA	NA	NA	0.50	0.01	0.51
FE/7-2	Intermittent	NA	NA	NA	0.20	0.01	0.21
FE-1	Ephemeral	NA	NA	NA	0.69	0.00	0.69
FE-2A	Ephemeral	NA	NA	NA	0.00	0.01	0.01
FE-2B	Ephemeral	0.00	0.06	0.06	0.00	0.06	0.06
7-2	Ephemeral	0.00	0.02	0.02	0.00	0.03	0.03
7-3	Ephemeral	0.00	0.51	0.51	3.91	0.08	3.99
7-5	Ephemeral	0.00	0.01	0.01	0.09	0.00	0.09
7-6	Ephemeral	0.00	0.01	0.01	0.13	0.01	0.14
7-San Juan Creek	Intermittent	0.00	0.01	0.01	0.30	0.00	0.30
7-10	Ephemeral	NA	NA	NA	0.09	0.08	0.17
7-11	Ephemeral	NA	NA	NA	0.00	0.00	0.03
7-12	Ephemeral	0.00	0.03	0.03	0.51	0.00	0.51
7-13	Ephemeral	0.00	1.92	1.92	1.72	1.19	2.91
FE/7-3	Ephemeral	0.00	0.20	0.20	1.94	0.00	1.94
FE/7-4	Intermittent	NA	NA	NA	0.82	0.00	0.82
FE/7-6	Ephemeral	0.00	0.10	0.10	0.79	0.05	0.84
FE/7-7	Ephemeral	0.00	0.12	0.12	2.06	0.00	2.06
FE/7-8	Ephemeral	0.00	0.19	0.19	2.34	0.08	2.42
FE/7-9	Ephemeral	0.00	0.10	0.10	0.00	0.10	0.10
Unnamed Tributary to Cristianitos	Ephemeral	0.00	0.00	0.00	0.08	0.00	0.08
FE/7-10	Ephemeral	0.00	0.05	0.05	0.17	0.04	0.21
FE/7-11	Perennial	0.12	0.39	0.51	0.77	0.00	0.77
FE/7-12	Intermittent	0.35	0.00	0.35	0.35	0.00	0.35
FE/7-12	Ephemeral	0.00	0.27	0.27	0.57	0.08	0.65
FE/7-14	Ephemeral	0.00	0.19	0.19	0.15	0.05	0.20
FE/7-VM18	Depressional Wetland	0.04	0.00	0.04	NA	NA	NA
FE/7-VM19	Depressional Wetland	0.06	0.00	0.06	NA	NA	NA
FE/7-15	Ephemeral	0.00	0.12	0.12	0.00	0.12	0.12
FE/7-16	Ephemeral	0.00	0.09	0.09	0.00	0.09	0.09
FE/7-17	Ephemeral	0.00	0.12	0.12	0.00	0.12	0.12
FE/7-18	Ephemeral	0.00	0.55	0.55	0.89	0.25	1.14
FE/7-19	Ephemeral	0.00	0.01	0.01	0.00	0.01	0.01
FE/7-20	Ephemeral	0.00	0.01	0.01	0.00	0.01	0.01
FE/7-21	Ephemeral	0.00	0.07	0.07	0.48	0.00	0.48

Table 4.10-1 (Continued)
Permanent Jurisdictional Impacts
Preferred Alternative
(in acres)

Jurisdictional Feature[1]	Resource Type	Corps			CDFG		
		Wetlands	Non-wetland Waters	Total	Vegetated Unvegetated	Streambed	Total
FE/7-22	Ephemeral	0.00	0.22	0.22	0.18	0.15	0.33
FE/7-24	Ephemeral	0.00	0.03	0.03	0.00	0.03	0.03
FE/7-25	Ephemeral	0.00	0.03	0.03	0.00	0.03	0.03
FE/7-San Mateo Creek[3]	Perennial	0.01	0.00	0.01	0.01	0.00	0.01
FE/7-San Mateo Marsh-East of I-5[3]	Freshwater Forested Wetland	0.00	0.00	0.00	0.21	0.00	0.21
FE/7-VM20[3]	Depressional Wetland	0.05	0.00	0.05	NA	NA	NA
FE/7-VP3[3]	Depressional Wetland	0.18	0.00	0.18	NA	NA	NA
San Onofre Creek[3]	Perennial	0.01	0.00	0.01	0.01	0.00	0.01
TOTAL	**NA**	**0.82**	**5.45**	**6.27**	**20.37**	**2.71**	**23.08**

[1]These features are depicted on Exhibit 1.
[2]Refer to Tables 3 and 4 for isolated features totals
[3]Feature subject to CCC jurisdiction.

Table 4.10-2
Temporary Jurisdictional Impacts
Preferred Alternative
(in acres)

Jurisdictional Feature[1]	Resource Type	Corps			CDFG		
		Wetlands	Non-wetland Waters	Total	Vegetated Unvegetated	Streambed	Total
FE/7-1	Ephemeral	NA	NA	NA	1.28	0.03	1.31
7-San Juan Creek	Intermittent	0.29	2.71	3.00	6.62	0.00	6.62
San Mateo Creek[2]	Perennial	5.30	0.00	5.30	5.30	0.00	5.30
San Onofre Creek[2]	Perennial	1.14	0.00	1.14	1.14	0.00	1.14
TOTAL	**NA**	**6.73**	**2.71**	**9.44**	**14.34**	**0.03**	**14.37**

[1]These features are depicted on Exhibit 1 in the delineation report.
[2]Feature subject to CCC jurisdiction.

Permanent impacts to isolated features that may be subject to RWQCB jurisdiction are summarized in table 3 below.

TABLE 4.10-3
Permanent Impacts to Isolated Features
Preferred Alternative – Initial Alternative
(in acres)

Feature Name[1]	Wetland Area	Non-Wetland	Total Area	Total Length (linear feet)
FE/C/7-Wetland 2	0.10	0.00	0.10	NA
FE/7-1		0.02	0.02	205
FE/7-2	0.19	0.02	0.21	926
FE/7-3	0.33	0.08	0.41	960
FE-1		0.04	0.04	504
FE-2A		0.01	0.01	154
7-2		0.01	0.01	188
7-3		0.01	0.01	283
7-10		0.08	0.08	660
7-11		0.02	0.02	432
7-13		0.02	0.02	393
FE/7-4	0.75	0.00	0.75	476
TOTAL	**1.37**	**0.31**	**1.68**	**5,181**

[1] These features are depicted on Exhibit 1.

Temporary impacts to isolated features that may be subject to RWQCB jurisdiction are summarized in Table 4 below.

TABLE 4.10-4
TEMPORARY IMPACTS TO ISOLATED FEATURES
PREFERRED ALTERNATIVE
(in acres)

Feature Name[1]	Wetland Area	Non- Wetland Waters	Total Area	Total Length (linear feet)
FE/7-1	0.00	0.05	0.05	667
TOTAL	**0.00**	**0.05**	**0.05**	**667**

[1]These features are depicted on Exhibit 1.

Attachment 15

Biological Survey Report for The Conservancy, P&D

Attachment 15—Natural Resources Surveys for The Donna O'Neill Land Conservancy

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4.7 Wildlife Movement Assessment Results 4

Attachment 15—Natural Resources Surveys for The Donna O'Neill Land Conservancy

1.0 INTRODUCTION

Biological resources surveys were conducted within The Donna O'Neill Land Conservancy (The Conservancy) for the Biological Study Area (BSA) for the three refined corridor alignments: the Far East Corridor-Modified (FEC-M), Far East Corridor-West (FEC-W) and Alignment 7 Corridor-Far East Crossover-Modified (A7C-FEC-M). The BSA is the same geographic coverage, approximately one-quarter mile on each side of centerline, as that documented in the Natural Environment Study (NES) (P&D Consultants, 2004). The biological resources surveys included plant community mapping, arroyo toad and vernal pool fairy shrimp habitat assessments, raptor survey and habitat assessment, general herptile observations, least Bell's vireo/southwestern willow flycatcher habitat assessment and wildlife movement assessment. The following report summarizes the results of these surveys. Results related to waters of the U.S. and wetlands within The Conservancy are provided in the Draft Wetlands Delineation Technical Assessment (Glen Lukos Associates (GLA) 2004).

2.0 STUDY METHODS

2.1 Plant Community Mapping

Plant community mapping was conducted by P&D biologists over five days in June 2004. Survey methods are described in Section 3.2.1.1 (Plant Community Mapping and Plant Inventory) of the NES.

2.2 Arroyo Toad Habitat Assessment

The main drainage, Cristianitos Creek, and tributaries were surveyed throughout The Conservancy for arroyo toad habitat. The main focus of the assessment was an area in the southern portion of The Conservancy BSA in Cristianitos Creek.

2.3 Vernal Pool/Fairy Shrimp Habitat Assessment

Vernal pool/fairy shrimp habitat assessments have been conducted within The Conservancy on several occasions. Initial surveys were conducted for TCA by MBA during the 1995/1996 delineation. Subsequent surveys were conducted during the 1999 Talega delineation, 2004 GLA delineation and 2004 botanical assessment conducted by Fred Roberts and Dave Bramlet. Habitat assessments included the examination of any potential ponding areas for hydrophytic vegetation or hydric soils.

2.4 Raptor Survey/Assessment

Three days of raptor surveys were conducted on June 9, 10 and 11, 2004, at The Conservancy. All raptors detected within the three-day period were mapped and their locations and activities were described. Because the survey was conducted during the latter part of the breeding season for most raptors, nests were difficult to locate. However, the presence of adult raptors and especially fledged young during this survey indicate that observed birds are indeed breeding and not lingering winter visitors.

2.5 Herptile Observations

General surveys for herptiles were conducted by all biologists during field work activities. These surveys consisted of general field observations of herptiles on The Conservancy. No pitfall traps nor formalized transects were used.

2.6 Least Bell's Vireo/Southwestern Willow Flycatcher Habitat Assessment

Three P&D avian biologists conducted the field reconnaissance to assess the potential breeding habitat for two sensitive riparian birds. The least Bell's vireo (*Vireo bellii pusillus*) and the southwestern willow flycatcher (*Empidonax traillii extimus*), both federally listed species, typically require willow-dominated riparian habitats in southern California for breeding. The vireo prefers dense, lowland riparian vegetation, often in the early to middle successional stages. Although willows typically provide the dominant tree cover, a fairly dense understory consisting of mule fat, young willows or various riparian shrub species are critical for nest placement and concealment. Suitable breeding habitat for the flycatcher includes dense, well-developed riparian vegetation with surface water or saturated soils occurring in the immediate vicinity. Typically there will be an overstory of willows and occasionally other riparian trees, with a mosaic of dense, understory species. Marshy openings are often present, supporting such vegetation as sedges, rushes, stinging nettle and other herbaceous wetland species. Nesting flycatchers are not known to occupy linear riparian habitats that are less than 10 meters (32.8 feet) in width.

2.7 Wildlife Movement Assessment

The Conservancy was evaluated as a corridor for wildlife movement during field surveys completed on June 9 and 10, 2004. A number of ungulate and carnivore species require large areas due to the extensive size of their home ranges. The wildlife movement assessment focused on these ungulate and carnivore species.

3.0 ENVIRONMENTAL SETTING

The Conservancy, a 486 ha (1,200 ac) open space reserve in the Rolling Hills PC SP area is owned by Rancho Mission Viejo (RMV). Created in 1991 as mitigation for Talega, The Conservancy complements Orange County's goal to preserve and enhance lands throughout the region for educational, ecological, scenic and open space uses.

4.0 RESULTS OF BIOLOGICAL RESOURCES SURVEYS

4.1 Plant Community Mapping

Figure 5.1-1 in the NES has been updated to reflect plant community data gathered during the surveys of The Conservancy. General community types mapped on The Conservancy include scrub, chaparral, grassland, riparian, woodland, cliff and rock communities, and seeps and water courses. These communities are described in detail in Sections 2.5.1 (Natural Communities) and 5.3.2 (Sensitive Plant Communities) in the NES.

4.2 Arroyo Toad Habitat Assessment Results

No water was observed in Cristianitos Creek in the southeastern part of the BSA within The Conservancy. An employee of The Conservancy said that the drainage retains water during large rain events, but not on a consistent annual basis. However, arroyo toads can burrow for extensive periods of time, possibly years, provided that the underground moisture level is adequate. It was difficult to identify any breeding pools since the area was dry, but it is possible that a breeding pool could form based on the growth pattern of vegetation and widening of the banks. There was also evidence of berms and gravel banks, which are

indicators of potential arroyo toad habitat and are characteristic of known population locations. Focused surveys would need to be conducted in the spring immediately following rain events to determine with more certainty the presence of arroyo toad in Cristianitos Creek within The Conservancy.

Within The Conservancy, some of the tributaries to Cristianitos Creek did contain some water. Pools in most of these tributaries were not favorable for larvae or egg masses due to the high filamentous algal content and muddy silt-like substrate. The tributaries are not recommended for analysis in focused surveys following USFWS protocol. However, upon survey of Cristianitos Creek, an audio survey would be sufficient to detect for migrating adults and juveniles that could be present in the tributaries.

4.3 Vernal Pool/Fairy Shrimp Habitat Assessment Results

No ponding areas have been identified on The Conservancy other than a single impoundment that supports no hydrophytic vegetation and exhibits well-drained soils. The frequent influxes of sediment, characteristic of impoundments, and the sandy nature of the impoundment bottom are expected to preclude the establishment of fairy shrimp. Generally, The Conservancy exhibits steep topography and well-drained soils that are not conducive to the development of seasonal ponds or vernal pools, which could contain fairy shrimp.

4.4 Raptor Survey/Assessment Results

Raptor survey data from The Conservancy has been incorporated into Figure 5.3-4 in the NES. A summary of the survey results are provided in Table 1. Raptors observed on The Conservancy include American kestrel *(Falco sparverius)*, Cooper's hawk *(Accipiter cooperii)*, red-tailed hawk *(Buteo jamaicensis)*, white-tailed kite *(Elanus leucurus)*, barn owl *(Tito alba)* and red-shouldered hawk *(Buteo lineatus)*. These raptors are described in detail in Sections 5.2.5.8 (Raptors) and 5.3.4.5 (Birds) in the NES.

Table 1
Raptor Observations in BSA

Species Name	FEC-M	FEC-W and A7C-FEC-M (Common Alignment through The Conservancy)	Number of Locations
American kestrel	2		5
Coopers hawk	1		2
Red-shouldered hawk	1		1
Red-tailed hawk	2	2	3
White-tailed hawk	1	1	2
Barn owl		1	1
TOTAL	**7**	**4**	**14**

As shown in Table 1, more raptors were observed in the FEC-M BSA than in the FEC-W and A7C-FEC-M BSA. Although more raptor observations are shown within the FEC-M BSA near Cristianitos Road, the grassland/woodland community interface along Cristianitos Road and within The Conservancy are both important for the nesting and foraging activities of raptors. The extensive grasslands in and around The Conservancy are one of the few remaining places in Orange County where ferruginous hawks and prairie falcons, two rare species, may occasionally be found.

4.5 Herptile Results

The following herptiles were identified on The Conservancy:

- Side-blotched lizard (*Uta stansburiana*)
- Western skink (*Eumeces skiltonianus*)
- Western whiptail (*Cnemidophorus tigris*)
- Gopher snake (*Pituophis catenifer*)
- Western fence lizard (*Sceloporus occidentalis*)

Impacts to these species from implementation of the SOCTIIP Alternatives include removal, road mortality, invasive species introduction, noise from construction and long-term traffic, intense lighting/glare, loss of habitat, habitat fragmentation, competition for resources and physical/visual barriers.

4.6 Least Bell's Vireo/Southwestern Willow Flycatcher Habitat Assessment Results

Riparian habitats that are present in various areas of The Conservancy primarily consist of southern coast live oak and southern sycamore riparian woodlands. These are not considered typical breeding habitat for either the vireo or the flycatcher due to vegetative composition and generally a minimal or absent understory component. One very small isolated patch of southern willow scrub and some small areas of mule fat scrub occur along the eastern perimeter of The Conservancy, or just outside its boundaries. These areas were considered too small and lacking in structure to be typical breeding habitat for either bird species. Elsewhere, although willows and mule fat are occasionally present within the oak and sycamore dominated riparian habitats, these are quite limited in occurrence.

Focused least Bell's vireo surveys were conducted in 2001 along portions of upper Cristianitos Creek, where it parallels the eastern boundary of The Conservancy. Except for the portion of Cristianitos Creek that extends south of its confluence with Gabino Canyon Creek, potential breeding habitat for the vireo was considered extremely marginal in the upper portions of Cristianitos Creek. No vireos were found along the upper reaches of Cristianitos Creek in 2001, where it is adjacent to The Conservancy.

4.7 Wildlife Movement Assessment Results

In general, the plant communities and habitats within The Conservancy provide high-quality habitat for a variety of wildlife species. The Conversancy is in a largely undisturbed state and would be utilized by wildlife for movement activities, including daily movements between areas for foraging, nesting, cover and natal and long-distance dispersion.

Mule deer were detected or direct signs (scat) of these species were located within The Conservancy. This species was observed in several of the open meadow areas of The Conservancy, apparently utilizing them for foraging opportunities. The majority of these meadows appeared to be close to more dense vegetation where escape cover would be provided as protection from predation. In addition, tracks of mule deer were located near a number of the small drainages that are aligned through The Conservancy in a northwest to southeast direction, draining to Cristianitos Creek.

Direct signs (scat) of several carnivore species were detected within The Conservancy, including coyote *(Canis latrans)*, mountain lion *(Puma concolor)* and bobcat *(Felis rufus)*. The majority of the scat was located along the trail system, indicating a high frequency of use. Some of the plant communities are

dense with vegetation, which would somewhat restrict wildlife movement. The trails and roads within The Conservancy provide readily accessible routes for these species to move freely through the area. Other plant communities that would tend to be frequently utilized by carnivore species include the meadows and streambeds.

Cameras were installed in a number of locations to evaluate wildlife movement for the NES. Camera stations 1, 2 and 3 were in the vicinity of The Conservancy. The species that were detected at these stations included raccoon *(Procyon lotor)*, gray fox *(Urocyon cinereoar genteus)*, coyote *(Canis latrans)*, opossum *(Didelphis verginiana)*, skunk *(Mephitis mephitis)*, bobcat *(Felis rufus)*, and mountain lion *(Puma concolor)*, indicating that these species occur within The Conservancy and utilize it for local movement. The results of this supplemental field work are consistent with the findings of the NES.

In general, The Conservancy provides high-quality wildlife movement opportunities. For ungulate and carnivore species, long-distance dispersal would generally occur bilaterally in a north-northwest direction (or vice versa) due to streambed alignments. However, with the extensive trail system within The Conservancy, wildlife movement could occur in alternate directions as well. One constraint to wildlife movement is the presence of development along the western edge of The Conservancy. This barrier to wildlife movement would require north-south movements for avoidance. The Conservancy provides an important wildlife habitat that could facilitate movement between areas to the north, such as Rancho Mission Viejo and Trampas Canyon, and areas to the south, such as Cristianitos, Gabino, and Blind Canyons.

Attachment 16

Draft Addendum to the SOCTTIP Functional Assessment, Smith

ADDENDUM TO ANALYSIS OF POTENTIAL IMPACTS OF ALTERNATIVE TRANSPORTATION CORRIDORS ON WATERS OF THE UNITED STATES AND RIPARIAN ECOSYSTEMS FOR THE SOUTHERN ORANGE COUNTY TRANSPORTATION INFRASTRUCTURE IMPROVEMENT PROJECT PREPARED BY R. DANIEL SMITH JUNE 2003

DRAFT

Prepared for:

Foothill/Eastern Transportation Corridor Agency
Contacts: Macie Cleary-Milan
125 Pacifica, Suite 100
Irvine California 92618-3304
Telephone: (949) 754-3481

Prepared by:

Glenn Lukos Associates, Inc.
29 Orchard
Lake Forest, CA 92630
Contact: Ingrid Chlup
Telephone: (949) 837-0404

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1.0 INTRODUCTION

This addendum to "Potential Impacts of Alternative Transportation Corridors on Waters of the United States and Riparian Ecosystems for the Southern Orange County Transportation Infrastructure Improvement Project" was prepared in response to a request from the Army Corps of Engineers (Corps) to conduct a supplemental impact analysis for the Central Complete (CC-Initial) - Initial, Central Corridor – Avenida La Pata Variation - Initial (CC-ALPV-Initial), Alignment 7 Corridor – Avenida La Pata Variation – Initial (A7C-ALPV - Initial), Alignment 7 Corridor – Far East Crossover – Modified – Initial (A7C-FEC-M - Initial), Far East Crossover – West – Initial (FEC-W - Initial) and Far East Crossover – Modified – Initial (FEC-M - Initial) Alternatives. Unlike the original impact analysis provided in the June 2003 report, this analysis assumes the construction of span bridges over the high order drainages listed below and the construction of cross-culverts or other similar hydrologic connection within the majority of the remaining jurisdictional features. In all other ways, the analysis methodology is the same as that described in the original June 2003 report.

Alternative	**Location of Span Bridges**
CC-Initial	San Juan Creek
CC-ALPV-Initial	San Juan Creek
A7C-ALPV-Initial	San Juan Creek
A7C-FEC-M-Initial	San Juan Creek, San Mateo Creek and San Onofre Creek
FEC-W-Initial	Canada Gobernadora, San Juan Creek, San Mateo Creek and San Onofre Creek
FEC-M-Initial	Canada Gobernadora, San Juan Creek, Cristianitos Creek, San Mateo Creek and San Onofre Creek

2.0 SUMMARY OF CRITERIA ANALYZED

As further detailed in the original June 2003 report, four criteria were used to assess the potential impact of the above six corridor alternatives on Waters of the United States (WoUS) and riparian ecosystems. These criteria are listed below. The procedures used to evaluate each is detailed in the June 2003 report.

Criterion 1: Wetland and non-wetland stream channels directly impacted
Criterion 2: Riparian ecosystems directly impacted
Criterion 3: Quantity of hydrologic, water quality and habitat integrity units for riparian reached directly impacted
Criterion 4: Loss of hydrologic, water quality, and habitat integrity units for riparian reaches directly impacted

3.0 RESULTS

3.1 Criteria for Assessing Potential Impacts

The results of the updated analysis for the various criteria used to assess the potential impact of the six refined corridor alternatives listed above are summarized in Tables 1 to 8 and Figures 1 to 8 below.

Table 1 depicts the number of miles of stream channel directly impacted by the initial disturbance footprints adjusted for bridging as appropriate (Criterion 1). Columns 2-6 in these tables indicate the number of miles of stream channel directly impacted by Strahler order. Column 7 indicates the total number of miles of stream channel directly impacted, and column 8 indicates the normalized rank of each alternative corridor alignment. To determine normalized rank, the number of miles impacted by an alternative corridor alignment was divided by the number of miles impacted by the alternative corridor alignment with the greatest number of miles impacted. For example, in Table 1 A7C-FEC-M had a normalized rank of 0.8 (i.e., A7C-FEC-M with 9.6 miles divided by CC with 11.8 miles). Thus, a greater normalized rank indicates greater impacts to stream channel. These rankings are summarized for all criteria, and criteria subsets in Section 3.2. Figure 1 depicts the same information in a graphical format that allows easy visual comparisons to be made be made among the alternative corridor alignments.

Table 2 depicts acres of riparian ecosystem directly impacted by the initial disturbance footprints adjusted for bridging as appropriate (Criterion 2). Column 2 in these tables shows the number of acres, and column 3 shows the rank of each alternative corridor alignment. A greater normalized rank indicates greater impacts to riparian resources. Figure 2 depicts the same information in a graphical format that allows easy visual comparisons to be made be made between the alternative corridor alignments.

Table 3 depicts the quantity of hydrologic integrity units directly impacted in the high, medium, and low integrity index ranges for the initial disturbance footprints adjusted for bridging as appropriate (Criterion 3a). Integrity units are calculated by taking the product of the area of riparian ecosystem directly impacted by the alternative corridor alignment in a riparian reach and the integrity index for that riparian reach. For example, if 10 acres in a riparian reach with a hydrologic integrity index of 1.0 are directly impacted, then 10 hydrologic integrity units are directly impacted. The high integrity index range includes normalized integrity indices from 0.7 to 1.0, the medium range includes normalized integrity indices from 0.4 to 0.6, and the low range includes normalized integrity indices from 0.1 to 0.3. Columns 2, 3, and 4 in these tables depict the quantity of hydrologic integrity units directly impacted in the high, medium, and low integrity index ranges. Column 5 depicts the total number of hydrologic integrity units impacted by each alternative corridor alignment, and column 6 shows the rank of each alternative corridor alignment. A greater normalized rank indicates greater impacts to hydrologic integrity units. Figure 3 depicts the same information in a graphical format that allows easy visual comparisons to be made be made among the alternative corridor alignments (Criterion 3b and 3c). Tables 4 and 5, and Figures 4 and 5 depicts the same information for water quality integrity units and habitat integrity units respectively.

Table 6 depicts the change in the quantity of hydrologic integrity units in the high, medium, and low integrity index ranges for each alternative corridor alignment that results from subtracting the number of hydrologic integrity units in each alternative corridor alignment prior to the simulation of direct impacts from the number of hydrologic integrity units in each alternative corridor alignment after the simulation of direct impacts (Criterion 4a). Positive numbers indicate the number of hydrologic integrity units lost, and negative numbers indicate the number of hydrologic integrity units gained. Columns 2, 3, and 4 in these tables show the change in the quantity of hydrologic integrity units in the high, medium, and low integrity index ranges. Column 5 shows the total loss of hydrologic integrity units after subtracting the total number of hydrologic integrity units in each alternative corridor alignment prior to the simulation of direct impacts from the number of hydrologic integrity units in each alternative corridor alignment after the simulation of direct impacts. Column 6 in these tables shows the rank of each alternative corridor alignment. A greater normalized rank indicates a greater loss of integrity units. It may seem unusual to have a gain in hydrologic units within some high, medium, and low integrity index ranges (i.e., negative numbers) after a direct impact. However, this occurs when the integrity index of a riparian reach shifts from one range to another after simulation of direct impacts. For example, if the integrity index of a riparian reach is 0.8 prior to simulation of direct impacts and 0.6 after the simulation of direct impacts, the number of integrity units in the high range will decrease, but the number of integrity units in the medium range will actually increase. In all cases however, the total number of integrity units in a riparian reach decreases, or remains the same, as a result of direct impacts. Figure 6 depicts the same information in a graphical format that allows easy visual comparisons to be made be made between the alternative corridor alignments. Tables 7 and 8, and Figures 7 and 8 depict the same information for water quality integrity units and habitat integrity units respectively (Criterion 4b and 4c)

Table 1: Criterion 1: Directly Impacted WoUS stream channels by Strahler order for the Initial Corridor Footprints

Initial Corridor Alternative	Miles of WoUS Stream Channel (Mainstem and Nonwetland Waters) by Strahler Order							
	1st Order	2nd Order	3rd Order	4th Order	5th Order	6th Order	Total	Normalized Rank
A7C-ALPV	1.2	1.2	2.0	0.1	0.3	0.0	4.8	0.4
A7C-FEC-M	4.8	2.5	0.6	0.4	1.1	0.3	9.6	0.8
CC ALPV	3.7	1.5	1.8	0.5	1.3	0.0	8.8	0.7
CC	4.9	1.8	2.2	0.7	2.1	0.0	11.8	1.0
FEC-M	4.2	2.9	1.3	0.9	0.5	0.3	10.2	0.9
FEC-W	4.1	2.5	1.0	0.4	0.0	0.3	8.3	0.7

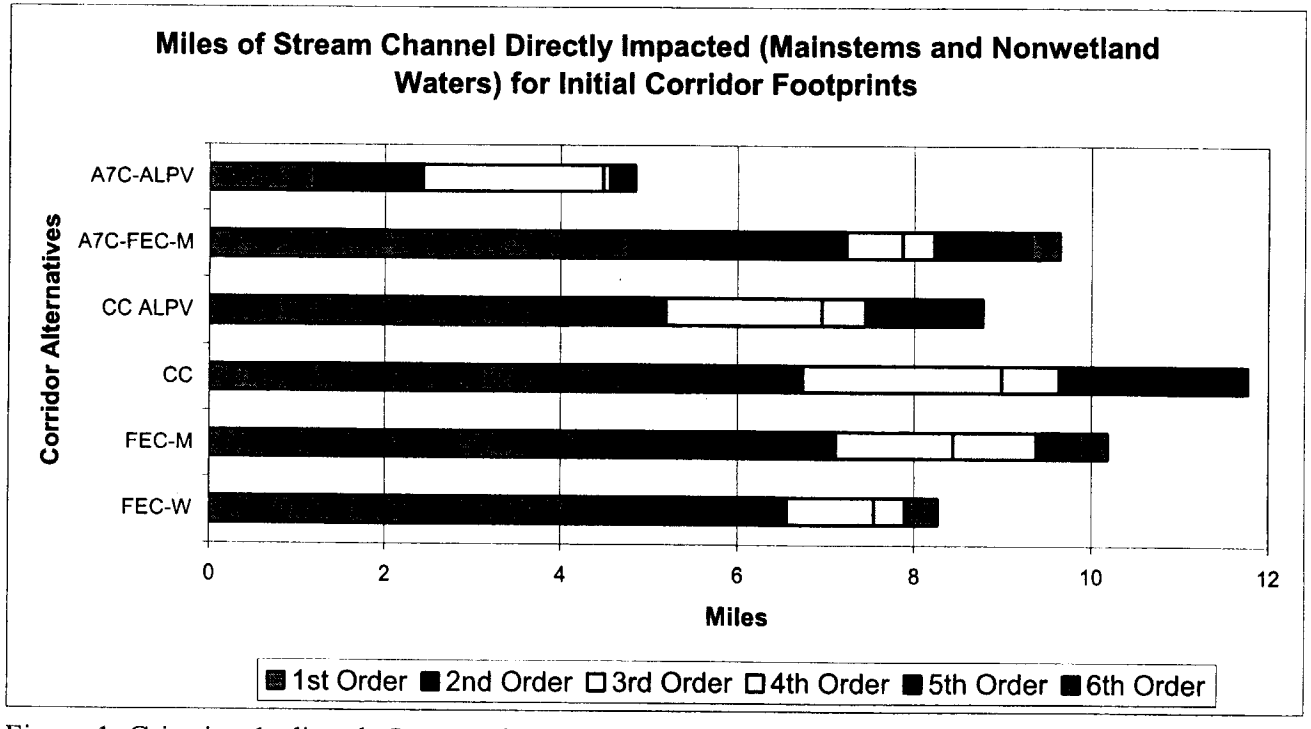

Figure 1. Criterion 1: directly Impacted Stream Channels by Strahler Order for the initial corridor footprints

Table 2: Criterion 2: Riparian Ecosystems directly impacted by the initial corridor footprints

Initial Corridor Alternatives	Acres	Normalized Rank
A7C-ALPV	18.4	0.4
A7C-FEC-M	11.2	0.3
CC ALPV	37.7	0.9
CC	42.8	1.0
FEC-M	16.7	0.4
FEC-W	10.6	0.2

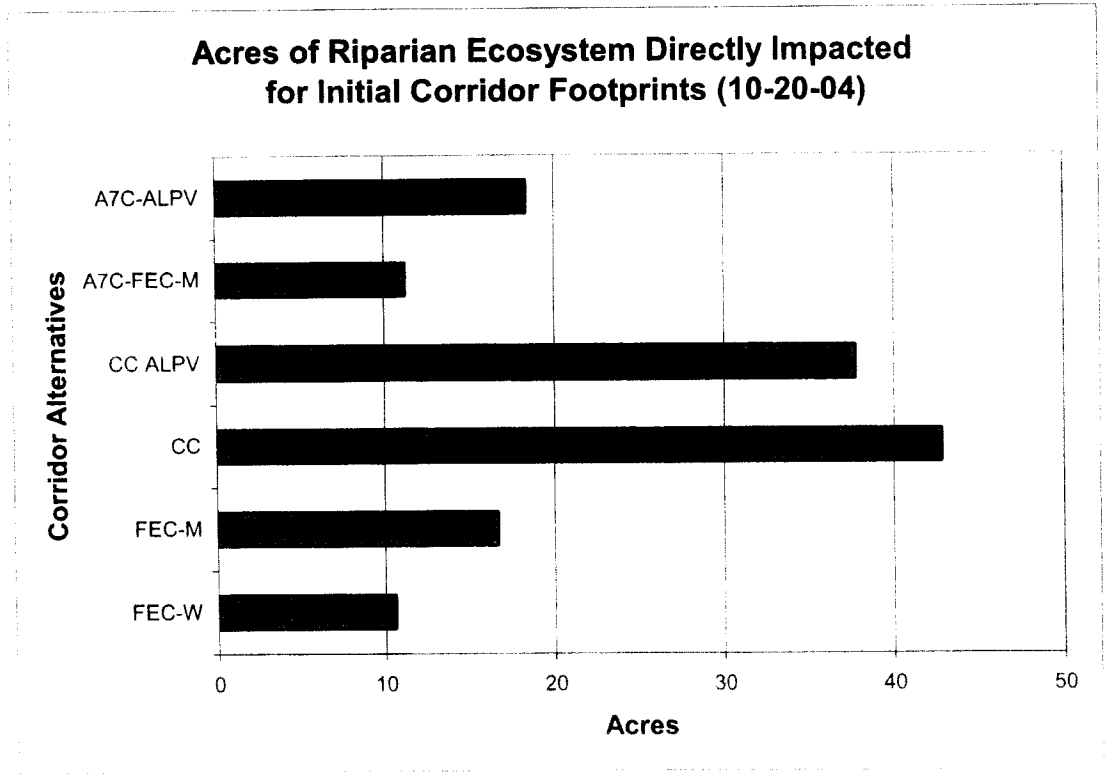

Figure 2: Riparian Ecosystem directly impacted by the initial corridor footprints (Note: Riparian ecosystems are not necessarily subject to regulation by Corps pursuant to Section 404 of the Clean Water Act)

Table 3: Criterion 3a: Quantity of hydrologic integrity units directly impacted for the initial corridor footprint

Initial Corridor Alternative	Hydrology - Sum of Integrity Units in Directly Impacted Reaches				
	High Range	Moderate Range	Low Range	Total	Normalized Rank
A7C-ALPV	17.3	0.1	0.0	17.4	0.4
A7C-FEC-M	5.9	2.8	0.0	8.7	0.2
CC ALPV	33.9	0.2	0.0	34.0	0.9
CC	38.5	0.2	0.0	38.7	1.0
FEC-M	13.6	1.2	0.0	14.8	0.4
FEC-W	7.6	1.3	0.0	8.9	0.2

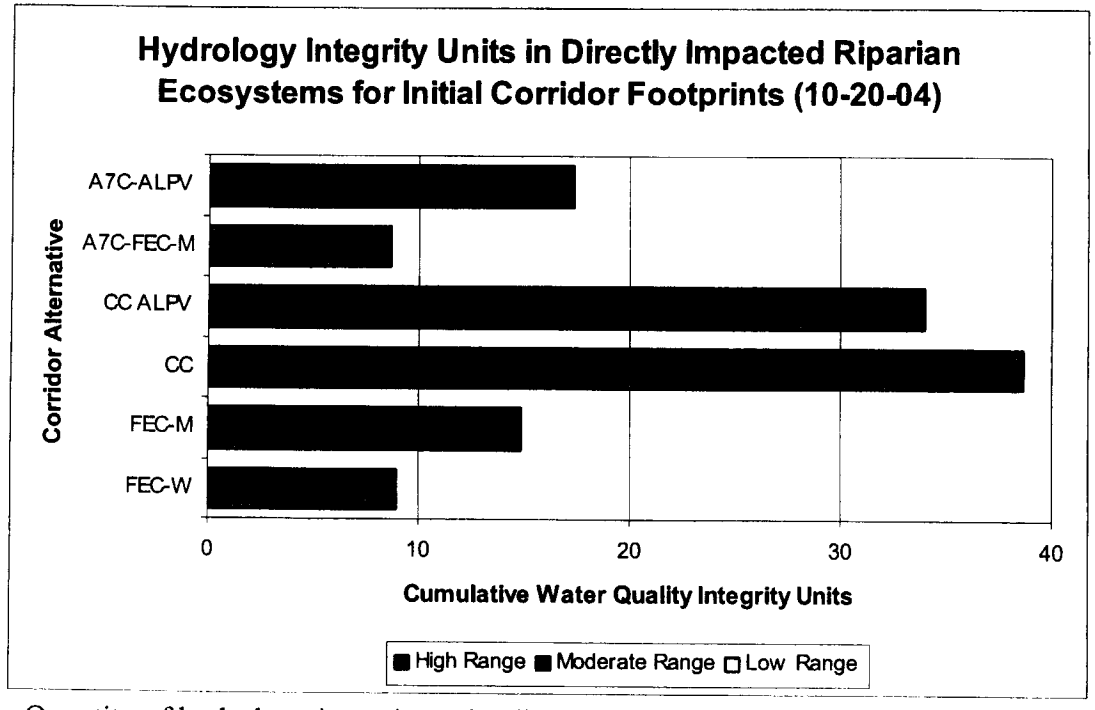

Figure 3: Criterion 3a: Quantity of hydrologc integrity units direct impacted for the initial corridor footprints (Note: Riparian ecosystems for which hydrologic integrity units are assessed are not necessarily subject to regulation by Corps pursuant to Section 404 of the Clean Water Act)

Table 4: Criterion 3b: Quantity of water quality integrity units directly impacted for the initial corridor footprint

Initial Corridor Alternative	Water Quality - Sum of Integrity Units in Directly Impacted Reaches				
	High Range	Moderate Range	Low Range	Total	Normalized Rank
A7C-ALPV	14.8	0.2	0.0	15.0	0.5
A7C-FEC-M	3.9	3.8	0.0	7.7	0.2
CC ALPV	23.6	5.3	0.0	28.9	0.9
CC	26.7	6.1	0.0	32.8	1.0
FEC-M	10.2	2.8	0.0	13.0	0.4
FEC-W	5.4	2.7	0.0	8.1	0.2

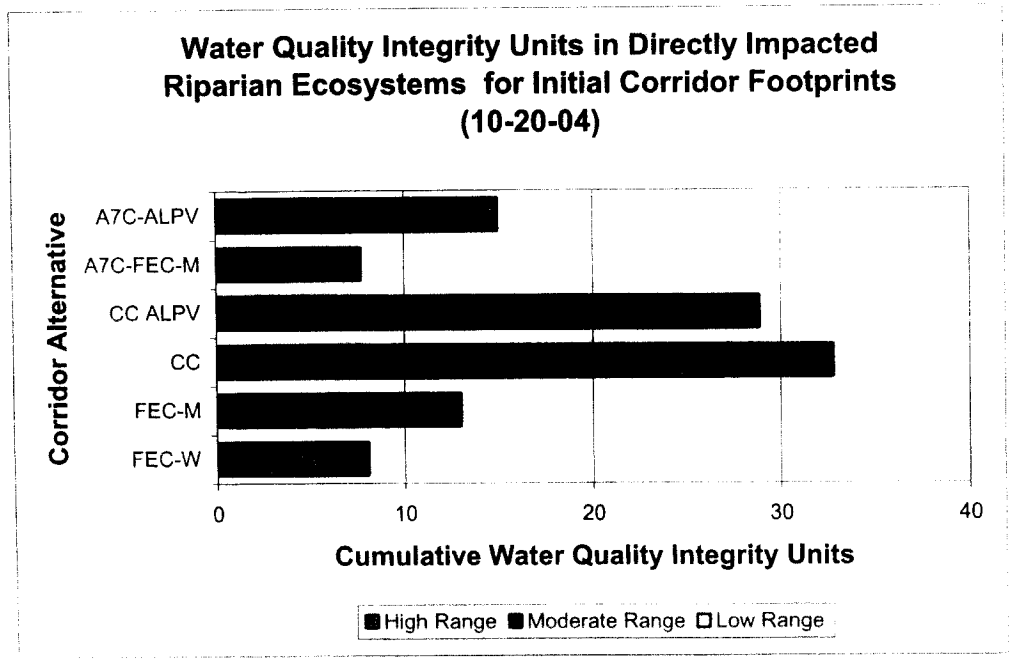

Figure 4: Criterion 3b: Quantity of water quality integrity units direct impacted for the initial corridor footprints (Note: Riparian ecosystems for which water quality integrity units are assessed are not necessarily subject to regulation by Corps pursuant to Section 404 of the Clean Water Act)

Table 5: Criterion 3c: Quantity of habitat integrity units directly impacted for the initial corridor footprint

Initial Corridor Alternative	Habitat - Sum of Integrity Units in Directly Impacted Reaches				
	High Range	Moderate Range	Low Range	Total	Normalized Rank
A7C-ALPV	3.8	8.9	0.0	12.7	0.4
A7C-FEC-M	3.6	3.0	0.4	7.0	0.2
CC ALPV	8.3	17.9	0.1	26.3	0.9
CC	11.1	18.6	0.1	29.9	1.0
FEC-M	4.9	6.5	0.2	11.6	0.4
FEC-W	2.4	4.3	0.4	7.1	0.2

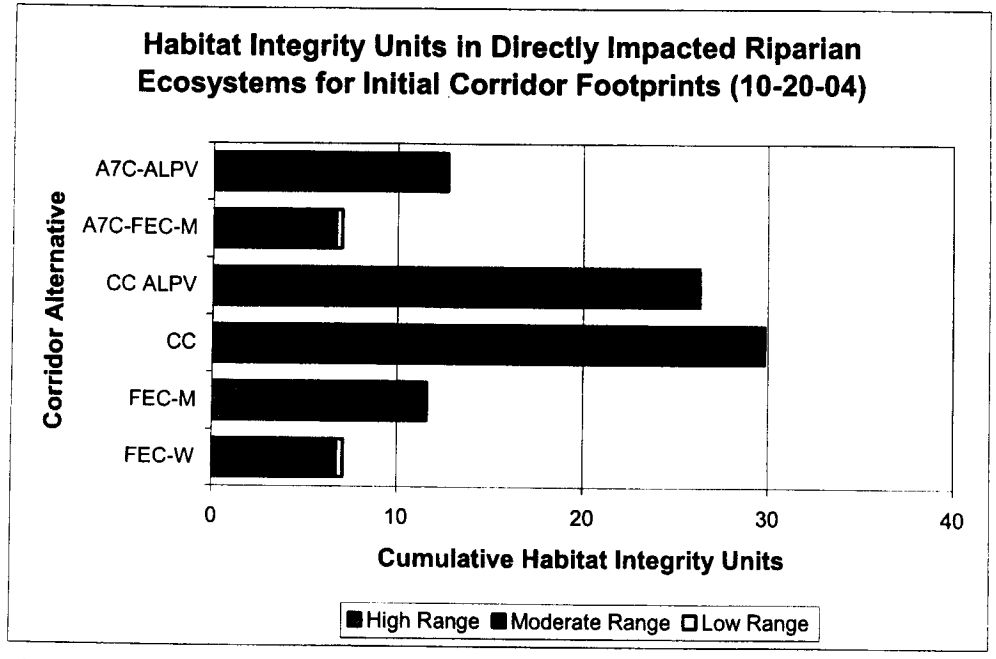

Figure 5: Criterion 3c: Quantity of habitat integrity units direct impacted for the initial corridor footprints (Note: Riparian ecosystems for which habitat integrity units are assessed are not necessarily subject to regulation by Corps pursuant to Section 404 of the Clean Water Act)

Table 6: Criterion 4a: Change/Total Loss of Hydrologic integrity units directly impacted for the initial corridor footprint

Initial Corridor Alternative	Change in Hydrologic Integrity Units in Directly Impacted Reaches				
	High Range	Moderate Range	Low Range	Total Loss	Normalized Rank
A7C-ALPV	43.0	-26.0	0.0	17.0	0.6
A7C-FEC-M	24.6	-11.9	-0.4	12.4	0.4
CC ALPV	56.7	-25.2	-3.0	28.6	0.9
CC	57.6	-24.3	-2.9	30.4	1.0
FEC-M	66.4	-38.4	-0.4	27.6	0.9
FEC-W	49.7	-33.0	-0.6	16.1	0.5

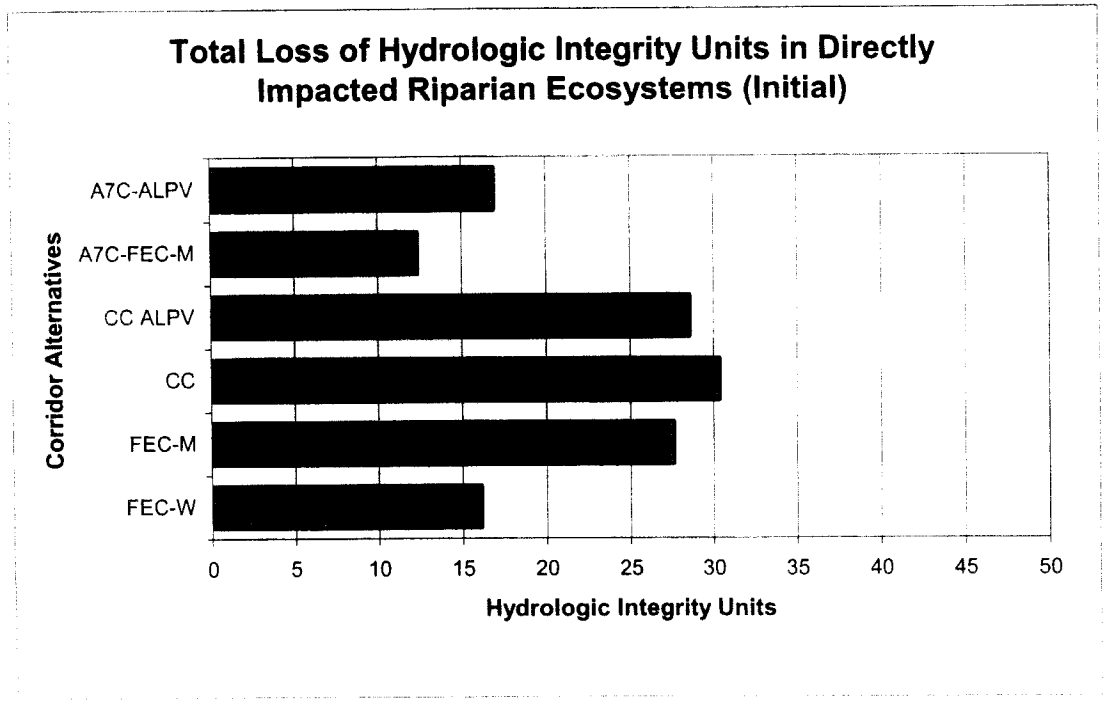

Figure 6: Criterion 4a: Loss of Hydrologic integrity units direct impacted for the initial corridor footprints (Note: Riparian ecosystems for which habitat integrity units are assessed are not necessarily subject to regulation by Corps pursuant to Section 404 of the Clean Water Act)

Table 7: Criterion 4b: Change/Total Loss of Water Quality integrity units directly impacted for the initial corridor footprint

Initial Corridor Alternative	Change in Water Quality Integrity Units in Directly Impacted Reaches				
	High Range	Moderate Range	Low Range	Total Loss	Normalized Rank
A7C-ALPV	33.9	-19.6	-1.9	12.4	0.5
A7C-FEC-M	29.1	-9.5	-5.1	14.5	0.6
CC ALPV	41.1	-13.9	-5.8	21.4	0.9
CC	42.5	-14.0	-5.7	22.9	1.0
FEC-M	54.4	-26.4	-5.3	22.7	1.0
FEC-W	37.6	-17.6	-4.4	15.5	0.7

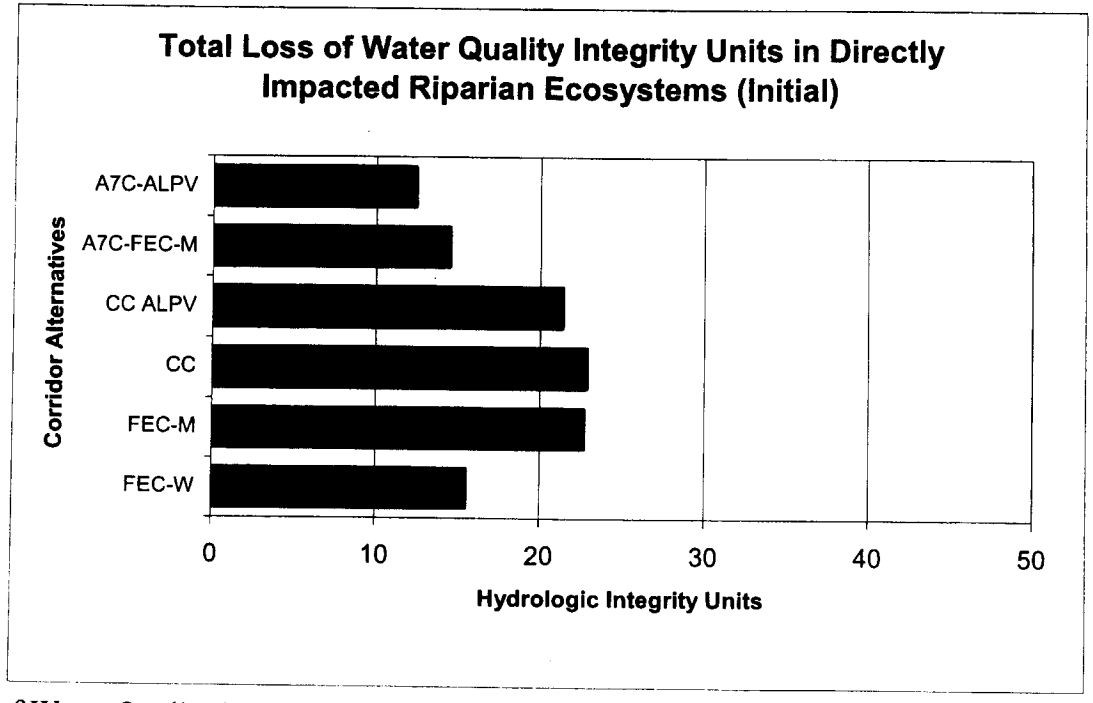

Figure 7: Criterion 4b: Loss of Water Quality integrity units direct impacted for the initial corridor footprints (Note: Riparian ecosystems for which habitat integrity units are assessed are not necessarily subject to regulation by Corps pursuant to Section 404 of the Clean Water Act)

Table 8: Criterion 4c: Change/Total Loss of Habitat integrity units directly impacted for the initial corridor footprint

Initial Corridor Alternative	Change in Water Quality Integrity Units in Directly Impacted Reaches				
	High Range	Moderate Range	Low Range	Total Loss	Normalized Rank
A7C-ALPV	129.0	-95.3	-2.3	31.4	0.7
A7C-FEC-M	193.5	-153.3	2.8	43.0	0.9
CC ALPV	132.7	-80.1	-10.9	41.7	0.9
CC	172.9	-112.6	-13.6	46.8	1.0
FEC-M	118.5	-71.9	-4.6	42.0	0.9
FEC-W	107.6	-66.9	-8.1	32.6	0.7

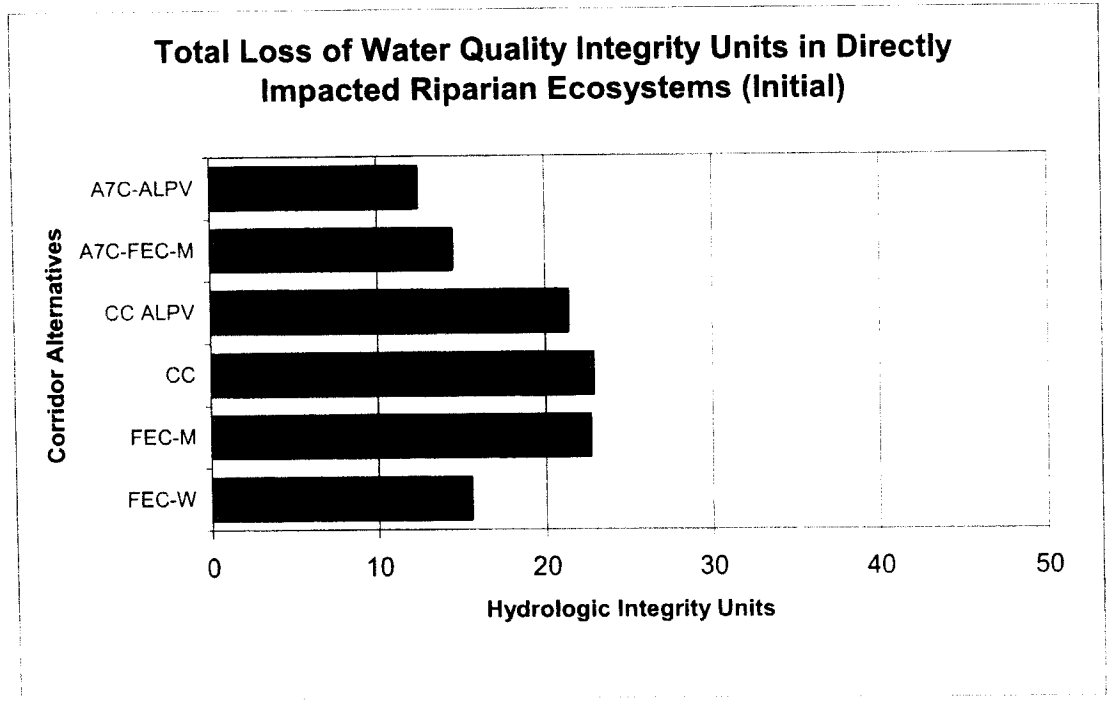

Figure 8: Criterion 4c: Loss of Habitat integrity units direct impacted for the initial corridor footprints (Note: Riparian ecosystems for which habitat integrity units are assessed are not necessarily subject to regulation by Corps pursuant to Section 404 of the Clean Water Act)

5.2 Tabular Summary of Normalized Rank Scores

The following table summarizes the information generated during this analysis. The values in these tables were calculated as follows. For all the criteria analyzed above, each corridor alternative was assigned a normalized rank score to allow comparison with other corridor alternatives. To determine normalized rank, the level of impact (i.e, number of miles, acres of riparian ecosystem, or integrity units.) of each alternative corridor alignment was divided by the level of impact of the alternative corridor alignment with the greatest number of miles, acres, or integrity units impacted for that criteria. For example, in Table 1 A7C-FEC-M had a normalized rank of 0.8 (i.e., A7C-FEC-M with 9.6 miles divided by CC with 11.8 miles). Table 9 depicts the normalized rank scores of all criteria for the six initial corridor footprints addressed by the supplemental analysis. The last column in these tables shows the sum of the normalized rank scores. This value gives a general indication of the overall impact of a particular corridor alternative based on all criteria evaluated in this report. A greater normalized rank indicates greater overall impacts to WoUS and riparian ecosystems. Figure 9 depicts the same information in a graphical format that allows easy visual comparisons to be made be made among the alternative corridor alignments.

Table 9: Normalized rank scores for all criteria and corridor alternatives for the initial corridor footprints

Corridor Alternatives (Initial)	Criteria 1 – Miles of Stream Channel	Criteria 2 – Acres of Riparian	Criteria 3 - Hydrology	Criteria 3 - Water Quality	Criteria 3 - Habitat	Criteria 4 - Hydrology	Criteria 4 - Water Quality	Criteria 4 - Habitat	Total Normalized Rank Scores
A7C-ALPV	0.4	0.4	0.4	0.5	0.4	0.6	0.5	0.7	3.9
A7C-FEC-M	0.8	0.3	0.2	0.2	0.2	0.4	0.6	0.9	3.7
CC ALPV	0.7	0.9	0.9	0.9	0.9	0.9	0.9	0.9	7.0
CC	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	8.0
FEC-M	0.9	0.4	0.4	0.4	0.4	0.9	1.0	0.9	5.2
FEC-W	0.7	0.2	0.2	0.2	0.2	0.5	0.7	0.7	3.6

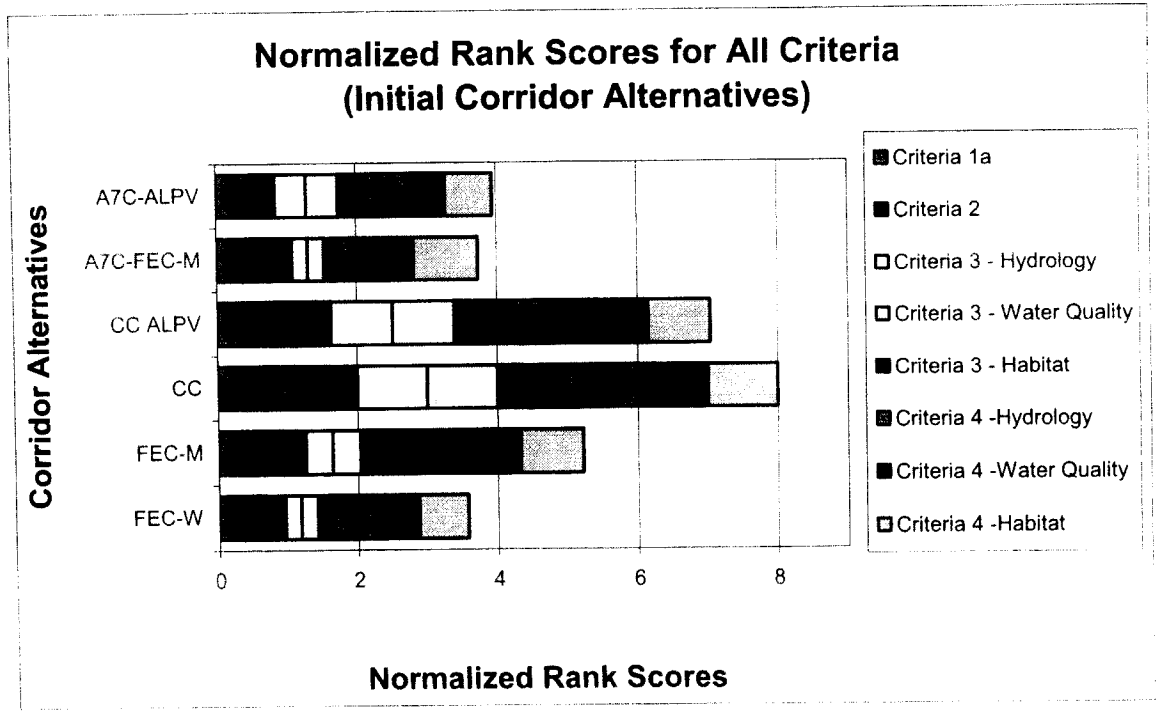

Figure 9 Sum of Normalized rank scores for all criteria and corridor alternatives for the initial corridor footprints