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STATE OF CALIFORNIA - THE RESOURCES AGENCY GRAY DAVIS, *Governor*

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Staff Report:	January 22, 2001
Hearing Date:	February 13, 2001
Commission Action:	8/10/00

STAFF REPORT: REVISED FINDINGS

LOCAL GOVERNMENT: County of Orange

LOCAL DECISION: Approval with Conditions

APPEAL NUMBER: A5-IRC-99-301

APPLICANT: Irvine Community Development Company

AGENT: M. Andriette Culbertson, Culbertson and Adams

PROJECT LOCATION: Southern Coastal Orange County, North of PCH, West of Crystal Cove State Park and East of the City of Newport Beach, Irvine Coast (Newport Coast), Orange County

DATE OF COMMISSION ACTION: August 10, 2000

COMMISSIONERS ON THE PREVAILING SIDE: Daniels, Desser, Dettloff, Estolano, Hart, Mc Clain-Hill, Nava, Reilly, Woolley, Chairman Wan

PROJECT DESCRIPTION:

Seventh Amendment to the Master Coastal Development Permit for the Newport Coast Planned Community (NCPC). Proposed development includes mass grading, backbone infrastructure for future residential and recreational development in Planning Areas (PA) 4A, 4B, 5 (and the northeastern portion of PA 2C), 6, 12C, offer to dedicate open space areas PA 12E (Muddy Canyon) and 12G (Moro Sliver) and approval of a proposed revised Vesting Tentative Tract Map 15447. Also proposed is 1.6 acres Needlegrass restoration to mitigate the loss of 0.4 acres of Needlegrass and wetlands and riparian mitigation totaling approximately 3 acres to mitigate impacts to 0.0529 acres of wetlands impacts and approx. seven miles of "non-wetlands waters of the U.S.".

The proposed water quality enhancement program and drainage facilities will affect PA 2B, 2C, 3A, 3B, 10B, 12A, 12B, 13B, 14 and 17, as more fully described in the Master Drainage and Water Quality Enhancement Plan, dated 7/24 /00 and those measures proposed and attested to by the applicant at the August 10, 2000 hearing. The combined plan and testimony (see transcript pages 93,94,97, and 208) describe, depict and document the source and treatment control Best Management Practices and other measures proposed for incorporation into the development. The proposed development will discharge runoff into Los Trancos and Muddy Canyon Creeks. Existing storm drain pipes and culverts installed by Caltrans during construction of Pacific Coast Highway will not be utilized for either low flows or storm flows from the project, with the exception of the Caltrans storm drain pipes and culverts at Los Trancos, Muddy Creek, and the 30 inch RCP that drains into Los Trancos Creek. No drainage from the project will be discharged directly to the Area of Special Biological Significance (ASBS), and/or over the bluffs, and onto the beach through the PCH pipes or culverts.

Mass grading, including remedial earthwork, is proposed totaling 48,191,680 cubic yards. Areas outside of the original appeal area, specifically 2C, 15 and 17, will also be graded. Minor boundary adjustments to Planning Areas PA 2C, 3A, 3B, 4A, 4B, 5, 6, 12A, 12B, 12E, and 14 as submitted on June 23, 2000 are proposed. Technical revisions to proposed revised VTTM 15447 and to specified Orange County approved Vesting Tentative Tract Maps to reflect the grading adjustments required by the new drainage and runoff control plans are also proposed.

The proposed project would also be undertaken and maintained consistent with the July 27, 2000 letter to Tim La Franchi of State Parks and Recreation from Daniel C. Hedigan of The Irvine Company (Exhibit 46).

APPELLANTS: Commissioners Pedro Nava and Sara Wan

SUMMARY OF STAFF RECOMMENDATION

At a public hearing on October 12, 1999, the Commission determined that **a substantial issue existed** with respect to the local government's approval of the proposed development on the grounds that the approval did not conform to the Newport Coast (formerly Irvine Coast) certified Local Coastal Program (LCP).

At the January 12, 2000 Commission meeting on de novo portion of the appeal, staff recommended that the Commission **deny** the project as it was previously proposed on the grounds that it was inconsistent with the environmentally sensitive habitat area (ESHA), Erosion, Sediment, and Runoff policies of the certified LCP. The Commission

postponed the hearing on the de novo application at the request of the applicant. In the six months since the postponement, the applicant has made significant revisions to the project as discussed below.

On August 10, 2000, after a public hearing, the Commission approved the proposed project subject to special conditions that require the applicant pay an in-lieu fee to replace the sand and beach that will be lost due to project impacts and to submit evidence of recordation of an offer to dedicate in fee (Addendum, p. 19, #3) PA 12E and 12G ; to require that the 0.4 acre seasonal wetland mitigation site is constructed prior to the disturbance of the existing wetlands, and that the wetlands/riparian mitigation plans and Needlegrass grassland mitigation plan are carried out as proposed and approved herein; that the drainage and runoff plan be revised such that no runoff from PA 2C, 5 or 6 are directed into Muddy Creek below the existing agricultural pond berm, (App., p.19, #4); to maintain the Los Trancos tunnel in a dry and passable condition from April 15 to October 31 of each year; the submittal of additional slope stability analysis; the submittal of bridge plans showing details of the proposed structure and Department of Parks and Recreation approval of the design and location; the submittal of required fuel modification and landscaping plans(Addendum, p.19, #4 and 5); and to protect water quality by the submittal of erosion control plans meeting the requirements of the LCP, revised grading plans in conformance with the requirements of the LCP, submittal of a final water quality control plan assuring that all necessary BMPs are implemented, and a plan to assure the long-term maintenance of the proposed water quality enhancement facilities and program and the acceptance of the project's dry weather nuisance flow by the local sewer agency for the life of the project.

Staff has prepared the following set of revised findings for the Commission's consideration. The revised findings reflect the action taken by the Commission on the de novo portion o f the appeal hearing on August 10, 2000. The attached revised findings include: (1) all of the changes made by staff and the Commission at the hearing to the recommended conditions of approval; (2) all of the changes made by the applicant to the proposed project description; (3) new findings to support special condition 3 and the required maintenance of the Los Trancos tunnel; (4) new findings to support the changes made by the staff and the Commission at the hearing to the recommended water quality conditions; (5) new findings to support the revisions made to the beach sand replenishment condition; and (6) the deletion of findings requiring the stability certification of the existing agricultural berm.

The purpose of the hearing is to consider whether the revised findings accurately reflect the Commission's previous actions rather than to reconsider whether the appeal raised a substantial issue or to reconsider the merits of the project or the appropriateness of the adopted conditions. Public testimony will be limited accordingly.

A. STAFF RECOMMENDATION

The staff recommends that the Commission adopt the following revised findings in support of the Commission's action on August 10, 2000 approving the project with conditions. The proper motion is :

MOTION: I move that the Commission adopt the revised findings in support of the Commission's action on August 10, 2000 concerning A5-IRC-99-301.

STAFF RECOMMENDATION OF APPROVAL:

Staff recommends a **YES** vote on the motion. Passage of this motion will result in the adoption of the revised findings as set forth in this staff report. The motion requires a majority vote of the members from the prevailing side present at the August 10, 2000 hearing, with a least three of the prevailing members voting. Only those Commissioners on the prevailing side of the Commission's action are eligible to vote on the revised findings (see page 1 for list of prevailing members).

B. SUBSTANTIVE FILE DOCUMENTS:

See Appendix A

C. EXECUTIVE SUMMARY

Prior Commission Action

At a public hearing on October 12, 1999, the Commission determined that **a substantial issue existed** with respect to the local government's approval of the proposed development on the grounds that the approval did not conform to the Newport Coast (formerly Irvine Coast) certified Local Coastal Program (LCP).

At the January 12, 2000 Commission meeting on de novo portion of the appeal, staff recommended that the Commission **deny** the project as it was previously proposed on the grounds that it was inconsistent with the environmentally sensitive habitat area (ESHA), Erosion, Sediment, and Runoff policies of the certified LCP. The applicant requested the use of their automatic right to postpone the hearing. At that hearing, the Commission received testimony only on the question of postponement. The Commission also requested that the applicant fund an independent third party review to assist Commission staff in the review of technical reports that Commission staff

indicated were necessary for a proper analysis of the potential impacts of the proposed project. The applicant agreed to fund such a review with the understanding that the independent review effort would be managed by the Executive Director. The hearing was postponed at the request of the applicant.

1. Project Revisions

At its October, 1999 meeting, the Commission found that the appeal of County of Orange Coastal Permit 97-0152 by Commissioners Nava and Wan raised a Substantial Issue on the grounds of the approved development's inconsistency with the LCP provisions regarding environmentally sensitive habitat areas (ESHA), that the permit approved development outside of the LCP area, specifically within Crystal Cove State Park, and that the permit unilaterally deleted the Commission's appeal jurisdiction with regards to development adjacent to streams. Subsequent to the Commission's October, 1999 Substantial Issue action on the appeal, the applicant revised the application for the de novo stage of the appeal.

Between October 1999 and prior to the January, 2000 Commission meeting, the applicant made several project modifications that had not been a part of the project approved by the local government. The modifications that were included in the staff's review of the de novo project for the January meeting included a water quality enhancement program and a wetlands/riparian enhancement program. The applicant also requested that the amendment to the appeal jurisdiction of the Commission be deleted from the application. The applicant also obtained permission from the Department of Parks and Recreation to apply to the Commission for the proposed detention basin, stream course fill for a private access road and the installation of water quality structures to be located within their retained easement in Crystal Cove State Park (PA 17).

Even with the addition of the water quality enhancement program and the wetlands/riparian mitigation program, staff was recommending that the Commission deny the project as it was proposed at that time. Staff's recommendation of denial was due to the proposed detention basin in Muddy Canyon creek, within a designated Category "B" ESHA. The detention basin was inconsistent with the ESHA policies of the certified LCP which dictates that all development be setback 50 feet from "blueline streams" that are designated ESHA Category "A" and "B", unless specifically excepted. The proposed Muddy Canyon detention basin would have resulted in the loss of 0.12 acres of riparian wetlands. The detention basin location was further inconsistent with the Backbone Drainage Plan of the LCP which locates all detention basins out of the major streams and locates them either within the development areas or on tributary drainages. The applicant had also not demonstrated that the proposed detention basin was sited in the least environmentally damaging location and that there were no other feasible locations outside of the major drainage course, through possible redesign of the subdivision. Therefore, the project as previously proposed, even with the water quality

and wetlands/riparian mitigation, was inconsistent with the ESHA policies of the LCP.

The project 's drainage and runoff management plan as previously designed also significantly increased the rate of stormwater runoff over pre-development conditions. The peak rate of increase was kept at 8.5% over the existing peak runoff rate only by placing the proposed detention basin within Muddy Canyon creek, inconsistent with the LCP. The significant increase in the peak runoff rate and the detention basin in the creek had the potential of adversely impacting the natural erosion/beach sand replenishment process, inconsistent with the LCP Runoff Policies.

The revised project as previously proposed also reduced the amount of sediment that is normally discharged to the ocean through Los Trancos and Muddy Canyons and the culverts along the frontal slopes of Pacific Coast Highway by as much as a 97% reduction along one segment of the beach. The applicant asserted that this loss of sediment is not significant in terms of beach nourishment but provided inadequate evidence, very late in the staff project review period, supporting the assertion that the proposed project was consistent with the Erosion and Beach Nourishment Policies of the LCP, despite the loss of sediment.

Finally, staff was also recommending denial of the revised project due to potential destabilizing impacts to Muddy Canyon and its creek downstream of the proposed Muddy Canyon detention basin that straddle the State park boundary. There were also unanswered questions as to whether the change in the movement of sediment through the canyons had a destabilizing effect on the streams.

In light of the staff recommendation of denial, the applicant's late submittal of inadequate supporting information to demonstrate the consistency of the proposed project with the certified LCP, and the applicant's desire to redesign the project to eliminate the detention basin, the applicant requested a postponement of the hearing. In the six months since the postponement, the applicant has further modified the project from that reviewed in the January, 2000 staff report and provided numerous technical studies (listed in Exhibit 36) to support their contention that the project as now modified is consistent with the Newport Coast LCP.

The most significant project modification is the removal of the previously proposed detention basin and road within Muddy Canyon and the proposal of four additional detention basins within the proposed residential development areas and a commercial area outside of the appeal jurisdiction (PA 14). A bridge is now proposed to replace the Muddy Canyon detention basin thereby eliminating 0.12 acres of wetland fill. The applicant also had their proposed water quality enhancement program further reviewed by Peter Mangarella, Eric Strecker and Seth Gentzler and made revisions to the program including the addition of "regional" DrainPac filters and other additional water quality features.

The applicant commissioned numerous technical studies, some of which had been previously requested by staff, including hydrology, sediment yield, coastal processes and water budget studies, among others in support of their assertion that the proposed residential and recreational development is consistent with the LCP erosion, sediment, runoff policies and the protection of the natural streams and off-shore ESHA (Exhibit 36). As agreed to by request of the Commission, the applicant also funded an independent third party review of the hydrologic, sediment yield and coastal processes studies. The independent third party review effort by Ronald M. Noble, Noble Consultants and Professor Robert L. Nagel was directed by a Hydrology Scope of Work prepared by the Executive Director (Exhibit 35).

At the August 10, 2000 Commission meeting the applicant made further revisions to the proposed project. Those revisions include: extension of time for diversion of nuisance flows to the Orange County Sanitation District sewage treatment facility from October 15 to October 31st of each year (Transcript, p.102, line 14-17); a redirection of storm water and dry weather nuisance flow discharges from Planning Areas 2C, 5 and 6 to Muddy Canyon above the existing agricultural berm instead of discharging this runoff to a tributary of Muddy Canyon via a new six inch diameter storm drain (Transcript, p. 19, line 7-9); agreement to undertake and maintain the approved development consistent with the applicant's 7/27/00 letter to the Department of Parks and Recreation (Exhibit 46); agreement to size the proposed drainpaks to 25% of hydraulic conductivity and ensure that the proposed detention basins are designed to prevent resuspension of first flush material consistent with the August 2, 2000 letter from the Department of Recreation (Exhibit 46); and rerouting stormwater flow from PA 3A, 3B and 14 through drainpaks or through water quality detention basin number 6.

II. **Standard Conditions**

1. Notice of Receipt and Acknowledgment. The permit is not valid and development shall not commence until a copy of the permit, signed by the permittee or authorized agent, acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.

2. Expiration. If development has not commenced, the permit will expire two years from the date on which the Commission voted on the application. Development shall be pursued in a diligent manner and completed in a reasonable period of time. Application for extension of the permit must be made prior to the expiration date.

3. Interpretation. Any questions of intent or interpretation of any condition will be resolved by the Executive Director or the Commission.

4. Assignment. The permit may be assigned to any qualified person, provided assignee files with the Commission an affidavit accepting all terms and conditions of the permit.

5. Terms and Conditions Run with the Land. These terms and conditions shall be perpetual, and it is the intention of the Commission and the permittee to bind all future owners and possessors of the subject property to the terms and conditions.

III. Special Conditions

The permit is subject to the following conditions:

1. WETLANDS MITIGATION AND MONITORING

PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall prepare and submit an addendum to the Wetlands/Riparian Mitigation and Monitoring Plan, by LSA Associates, Inc., dated 5/16/00, subject to the review and approval of the Executive Director, which shall require:

A. The proposed 0.4 acre seasonal wetland mitigation shall be constructed prior to the disturbance of the existing 0.05 acre seasonal wetland located in PA 4A; and

B. Within 180 days following construction of the mitigation wetlands, the applicant shall submit to the Executive Director a monitoring report for review and approval. The report shall determine whether the following performance standard has been met. After construction, the soil in each depression shall be saturated with water to the soil surface and then filled with an additional volume of water not to exceed that which would result from the median of annual peak 14-day cumulative rainfall totals from the 40-year record for Station 4650 (Laguna Beach 2).[1] The depression shall pond this water for at least 7 days. This test shall not take place during a period of natural rainfall. This performance standard is based on the fact that a standard criterion for identifying a hydric soil is that it ponds water for at least 7 consecutive days at least 50% of years (i.e., 50 years out of 100, on average).[2] If the performance standard can not be accomplished, the applicant shall submit an application for an amendment to the CDP for other, equivalent mitigation.

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[1] Exponent. 2000. Projected water balance for Muddy Canyon, Crystal Cove Area, California. A report to the Irvine Company dated April 20, 2000. p.6.

[2] Natural Resources Conservation Service. 1998. Field indicators of hydric soils in the United States. Version 4.0, March 1998. U. S. Department of Agriculture.

C. The permittee shall monitor and remediate the 0.4 acre seasonal wetland mitigation site in accordance with the approved monitoring program. Any proposed changes from the approved monitoring program shall be reported to the Executive Director. No changes to the approved monitoring program shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is required.

2. REVISED DRAINAGE AND RUNOFF PLANS

A. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit revised drainage and runoff plans, for the review and approval of the Executive Director, which shall indicate that no storm flow runoff or nuisance flow runoff from Planning Areas 2C, 5 or 6 shall be discharged into Muddy Creek below the existing agricultural pond berm located in Upper Muddy Canyon.

B. The permittee shall undertake development in accordance with the approved final plans. Any proposed changes to the approved final plans shall be reported to the Executive Director. No changes to the approved final plans shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is required.

3. LOS TRANCOS TUNNEL MAINTENANCE

A. The applicants shall maintain the Los Trancos Tunnel free of silt and mud and in a dry, passable state from April 15th to October 31st of each year, for the life of the development.

B. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant, Irvine Community Development Company, shall execute and record a deed restriction, in a form and content acceptable to the Executive Director, incorporating all of the above terms of this condition. The deed restriction shall include a legal description of the applicant's entire parcel(s). The deed restriction shall run with the land, binding all successors and assigns, and shall be recorded free of prior liens that the Executive Director determines may affect the enforceability of the restriction. This deed restriction shall not be removed or changed without a Commission amendment to this coastal development permit.

4. ASSUMPTION OF RISK

A. By acceptance of this permit, the applicant acknowledges and agrees (i) that the site may be subject to hazards from fire, landslides and soil erosion; (ii) to assume the risks to the applicant and the property that is the subject of this permit of injury and damage from such hazards in connection with this permitted development; (iii) to unconditionally waive any claim of damage or liability against the Commission, its officers, agents, and

employees for injury or damage from such hazards; and (iv) to indemnify and hold harmless the Commission, its officers, agents, and employees with respect to the Commission's approval of the project against any and all liability, claims, demands, damages, costs (including costs and fees incurred in defense of such claims), expenses, and amounts paid in settlement arising from any injury or damage due to such hazards.

B. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant, Irvine Community Development Company, shall execute and record a deed restriction, in a form and content acceptable to the Executive Director incorporating all of the above terms of this condition. The deed restriction shall include a legal description of the applicant's entire parcel. The deed restriction shall run with the land, binding all successors and assigns, and shall be recorded free of prior liens that the Executive Director determines may affect the enforceability of the restriction. This deed restriction shall not be removed or changed without a Commission amendment to this coastal development permit.

5. CONSTRUCTION PHASE EROSION AND SEDIMENT RUNOFF CONTROL PLANS

A. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit to the Executive Director for review and approval, final erosion and sediment runoff control plans and a Storm Water Pollution Prevention Plan (SWPPP) that has been approved by the County of Orange. The approved plan(s) shall be subject to the following requirements and include the following components, at a minimum:

1. During construction, erosion on the site shall be controlled to avoid adverse impacts to adjacent properties, public roadways and the Crystal Cove Area of Special Biological Significance/Marine Life Refuge.

2.The SWPPP to be prepared pursuant to the State Water Resource Control Board (SWRCB) General Construction Activity NPDES Permit, and required by this special condition, shall be designed to comply with the following standards, consistent with the SWRCB regulations:

(a) The applicant shall implement Best Available Technologically Achievable (BAT) and Best Conventional Pollutant Control Technology (BCT) to reduce or eliminate storm water pollution.

(b) DISCHARGE PROHIBITIONS:

(i) Authorization pursuant to this Coastal Development Permit does not constitute an exemption to applicable discharge prohibitions prescribed in Basin Plans, as implemented by the nine RWQCBs.

(ii) Discharges of material other than storm water which are not otherwise authorized by an NPDES permit to a separate storm sewer system

(MS4) or waters of the nation are prohibited, except as allowed in Special Provisions for Construction Activity, C.3 of the SWRCB General Construction Activity NPDES Permit.

(iii) Storm water discharges shall not cause or threaten to cause pollution, contamination, or nuisance.

(iv) Storm water discharges regulated by this Permit shall not contain a hazardous substance equal to or in excess of a reportable quantity listed in 40 CFR Part 117 and/or 40 CFR Part 302

(c) RECEIVING WATER LIMITATIONS:

(i) The SWPPP developed for the construction activity covered by the SWRCB General Construction Activity NPDES Permit shall be designed and implemented such that storm water discharges and authorized non-stormwater discharges shall not cause or contribute to an exceedance of any applicable water quality standards contained in a Statewide Water Quality Control Plan and/or the applicable RWQCB's Basin Plan, including but not limited to, any applicable standards in the California Toxics Rule and the California Ocean Plan.

(ii) Should it be determined by the discharger, SWRCB, RWQCB, or CCC that stormwater discharges and/or authorized non-stormwater discharges are causing or contributing to an exceedance of an applicable water quality standard, the applicant shall implement corrective measures consistent with 5A(2)c (iii) and (iv) below.

(iii) Where corrective measures would not constitute development under Section 30106 of the Coastal Act, the applicant shall cease grading and/or construction and implement corrective measures immediately following discovery that water quality standards were exceeded, followed by notification to the RWQCB and the CCC by telephone as soon as possible but no later than 48 hours after the discharge has been discovered. This notification shall be followed by a report within 14-calender days to the appropriate RWQCB and the CCC, unless otherwise directed by the RWQCB or the CCC, describing (1) the nature and cause of the water quality standard exceedance; (2) the BMPs currently being implemented; (3) any additional BMPs which will be implemented to prevent or reduce pollutants that are causing or contributing to the exceedance of water quality standards; and (4) any maintenance or repair of BMPs. This report shall include an implementation schedule for corrective actions and shall describe the actions taken to reduce the pollutants causing or contributing to the exceedance. The applicant shall revise its SWPPP and monitoring program immediately, after the telephone report to the CCC, to incorporate the additional BMPs that have been and will be implemented, the implementation schedule, and any additional monitoring needed. Grading and/or construction shall recommence

upon the corrective actions being completed to the satisfaction of the Executive Director.

(iv) Where corrective measures would constitute development under Section 30106 of the Coastal Act, the proposed corrective measures shall require an amendment to the coastal development permit, unless the Executive Director determines no such amendment is required.

B. Other Erosion Control Measures

1) The following temporary erosion control measures shall be used during construction activity: a combination of temporary measures (e.g., geo-fabric blankets, spray tackifiers, silt fences, fiber rolls, straw mulch, hay bales, gravel bags, earth berms or other mechanical or vegetative techniques), as appropriate, during each phase of site preparation, grading and project construction. Native and/or appropriate non-native plant material selected for vegetation shall be consistent with LCP subsection I-3-L-6. Temporary structural BMPs, including debris basins, desilting basins, and/or silt traps shall be incorporated into the erosion control plan. Said plan shall specify that the above noted temporary structural BMPs shall be installed prior to the onset of the wet season (October 15 to April 15) no later than October 15th, and shall be maintained in functional operating condition throughout the season. (October 15 to April 15) The erosion control plan shall also depict the sites and sizes of the temporary structural BMPs for sediment, mudflow and erosion control which are to be implemented prior to and during the wet season. Concurrent with the submittal of this plan to the Coastal Commission, the applicant shall submit a set of plans to the California Department of Parks and Recreation for their review.

2) Following construction, erosion on the site shall be controlled to avoid adverse impacts on adjacent properties, public roadways and the Crystal Cove Area of Special Biological Significance/Marine Life Refuge.

3) The (SWPPP) shall specify BMPs appropriate for use during each phase of site preparation, grading and project construction, and procedures for their installation, based on soil loss calculations shall be submitted. The submitted calculations will account for factors such as soil conditions, hydrology (drainage flows), topography, slope gradients, vegetation cover and groundwater elevations.

4) The plan(s) shall describe the location and timing for the installation and maintenance of all erosion control devices, and shall describe the parties responsible for repair and maintenance of such devices. Erosion control devices shall be installed in conjunction with clearing, grubbing, and grading. Such plan

may acknowledge that minor adjustments in the location of temporary erosion control measures may occur if necessary to protect downstream resources.

5) Erosion control measures for grading and construction done during the period from October 15 to April 15 will be implemented by October 15 and maintained as necessary through April 15. For grading and construction commencing in the period from October 15 to April 15, erosion control measures will be implemented in conjunction with the project in a manner consistent with the County of Orange Grading Code. All areas disturbed, but not completed, between April 15 and October 15, including graded pads, shall be stabilized in advance of the rainy season.

6) The plan(s) shall include a strategy to mobilize crews, equipment, and staging areas for BMP installation during each phase of site preparation, grading and project construction, with timing of deployment based on the forecast percentage of rainfall occurrence. The plan shall also address provisions for delivery of erosion prevention/control materials, or access to onsite supplies, and specifications for adequate storage capabilities.

7) The plan(s) shall demonstrate that landscaping will be installed on all cut and fill slopes in completed areas prior to November 15th of each year utilizing either temporary or permanent (in the case of finished slopes) erosion control methods. Said planting shall be accomplished under the supervision of a licensed landscape architect, shall provide adequate coverage within 90 days, and shall utilize vegetation of species consistent with native and/or appropriate non-native plant material selected for vegetation shall be consistent with LCP subsection I-3-L-6 and surrounding native vegetation, subject to Executive Director approval.

8) A third-party contractor designated by the applicant shall continually evaluate the implementation of SWPPP measures for compliance with this coastal development permit. Monthly reports shall be submitted to the Executive Director for review. In addition any periodic reports produced by government officials conducting inspection of the site for SWPPP compliance shall be submitted to the Executive Director, at the time such reports are provided to the applicant or the RWQCB. The requirement for submittal of such reports shall terminate with completion of construction activity and termination of applicant coverage under the General Construction NPDES permit as determined by the SWRCB or RWQCB.

9) Concurrent with the first phase of construction, as indicated on the August 9, 2000 Phasing Plan, the applicant shall construct and implement a dry weather diversion system consistent with the terms of special condition 15c.

C. The permittee shall undertake development in accordance with the approved grading and erosion and sediment runoff control plans and the SWPPP. No changes to these plan(s) shall occur without a Coastal Commission approved amendment to this coastal development permit unless the Executive Director determines that no amendment is required.

6. IRVINE BEACH SAND REPLENISHMENT FUND

PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicants shall provide evidence, in a form and content acceptable to the Executive Director of consent to participate in a fair share program for beach sand replenishment in the Crystal Cove littoral subcell as described below. The applicant shall also provide evidence that $163,800 has been deposited in an interest bearing account designated by the Executive Director in-lieu of providing sand to replace the sand and beach area that will be lost due to the impact of the proposed project. The California Coastal Commission or other entity designated by the Executive Director shall be named as trustee of this account, with all interest earned payable to the account for the purposes stated below. In no event shall the fair share portion of the applicant's responsibility fall below $163,800.

The purpose of the account shall be to aid in the restoration of beaches within the Crystal Cove littoral sub cell (between the east jetty of Newport Harbor and Abalone Point) through the establishment of a beach sand replenishment program. The funds shall solely be used to establish longterm monitoring of beach sand quantities, to prepare a program for beach sand replenishment, and to implement projects which provide sand to the beaches within the Crystal Cove littoral sub cell (between the east jetty of Newport Harbor and Abalone Point), not to fund operations, maintenance, or planning studies. The funds shall be released only upon approval of an appropriate program by the Executive Director of the Coastal Commission.

7. SLOPE STABILITY

A. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit, for the review and approval of the Executive Director, a geotechnical report which demonstrates the gross stability of all slopes (natural, cut, and fill) in the proposed development. The report shall be prepared and certified by a licensed geologist (RG) or engineering geologist (CEG). The scale of the analysis shall be at one inch equals forty feet for the fire access road and PA 12C. All other analysis shall be at the scale of one inch equals one hundred feet. Such analyses shall be prepared as follows:

The plan shall demonstrate:

1) Slope stability analyses shall demonstrate a factor of safety greater than or equal to 1.5 for the static condition and greater than or equal to 1.1 for the pseudostatic condition.

The plan shall include, at a minimum, the following components:

1) At least one two-dimensional quantitative slope stability analysis shall be prepared for each cut slope and each fill slope in the development. The stability of natural slopes adjacent to the development shall be evaluated through supplemental quantitative slope stability analyses.

2) All slope stability analyses shall be undertaken through cross-sections oriented perpendicular to the slope.

3) Pseudostatic slope analyses shall assume a horizontal seismic coefficient of 0.15g.

4) All slope analyses shall be performed using geotechnical parameters (friction angle, cohesion, and unit weight) determined from undisturbed samples collected on the site.

5) The choice of geotechnical parameters for each geologic unit examined shall be supported by direct shear tests, triaxial shear test, or literature references from intact and/or remolded samples in order to characterize the conditions in each slope.

6) All slope stability analyses shall be undertaken with potentiometric surfaces for the highest potential groundwater conditions.

7) If anisotropic conditions are assumed for any geologic unit, strike and dip of weakness planes shall be provided, and geotechnical parameters for each orientation shall be supported by reference to pertinent direct sheer tests, triaxial shear test, or literature.

8) When planes of weakness are oriented normal to the slope, or dip into the slope, or when the strength of materials is considered homogenous, rotational failure surfaces shall be sought by Spencer's method through a critical failure search routine to analyze the factor of safety along postulated critical failure surfaces.

9) If anisotropic conditions are assumed for units containing critical failure surfaces determined above, and when planes of weakness dip in the same

direction as the slope, factors of safety for translational failure surfaces also shall be calculated. Geotechnical parameters for such weak surfaces shall be supported through direct sheer tests, triaxial shear test, or literature references.

B. The permittee shall undertake development in accordance with the approved final plans. Any proposed changes to the approved final plans shall be reported to the Executive Director. No changes to the approved final plans shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is required.

8. REVISED GRADING PLANS

A. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit revised grading plans to the Executive Director for review and approval. The scale of the plans shall be at one inch equals forty feet for the fire access road and PA 12C. All other plans shall be at the scale of one inch equals one hundred feet. The revised grading plans shall show the following:

1) provide a schedule showing when each stage and element of the project will be completed, including estimated starting and completion dates, hours of operation, days of week operation, and the total area of soil surface to be disturbed during each stage of grading;

2) Show the location of all on-site stockpiling which shall be approved by the County of Orange. Top soil for later use in revegetation shall be stockpiled on-site in previously designated and approved areas. Other earthen material shall be disposed at locations approved by the County of Orange provided that a coastal development permit has been finally issued for locations in the coastal zone to receive this quantity of earthen material;

3) Removal of natural vegetation will be limited to graded areas, access/haul roads, and areas required for fuel modification. Construction material shall be limited to the approved area to be disturbed except for approved haul roads; and

4) All grading will conform to the County of Orange Grading Ordinance.

B. The permittee shall undertake development in accordance with the approved final plans. Any proposed changes to the approved final plans shall be reported to the Executive Director. No changes to the approved final plans shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is required.

9. FUEL MODIFICATION AND LANDSCAPING PLANS

A. **PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT**, the applicant shall submit fuel modification plans, subject to the review and approval of the executive director, for all areas where future development will abut natural areas. All fuel modification plans shall be reviewed and at a minimum, conceptually approved, by the Orange County Fire Authority. All fuel modification plans shall be in conformance with the requirements of the Development/Open Space Edges Policies of the certified Newport Coast LCP. No fuel modification shall occur in Planning Area (PA) 17 Crystal Cove State Park, including within the applicant's retained easement area within PA 17.

B. Landscaping plans, conceptually approved by the County of Orange, which are in conformance with the applicable landscaping and habitat and visual resources protection policies of the LCP shall also be submitted for the review and approval of the Executive Director.

C. The permittee shall undertake development in accordance with the approved final plans. Any proposed changes to the approved final plans shall be reported to the Executive Director. No changes to the approved final plans shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is required.

10. FINAL FIRE ACCESS ROAD PLANS

A. **PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT**, the applicant shall submit final plans at 40 scale, subject to the review and written approval of the Executive Director, for the widening and paving of the existing fire access road located between PA 4A and PA 5. The final plans shall be reviewed and approved by the Orange County Fire Authority and the Irvine Ranch Water District. The plans shall show that the road is designed to avoid impacts to Purple Needlegrass to the maximum extent feasible, consistent with the Southern Coastal Needlegrass Grassland Restoration Plan, by LSA Associates, Inc., dated December 14, 1999. Accordingly, the road may be realigned but shall be widened to a maximum of 14 feet where it abuts existing Purple Needlegrass vegetation. The existing Purple Needlegrass vegetation shall be flagged and fenced prior to grading activities and shall be protected from impacts during road construction.

If any Purple Needlegrass is destroyed or significantly impacted other than that indicated on Exhibit 2 of this report and Exhibit 2 of the Southern Coastal Needlegrass Grassland Restoration Plan, by LSA Associates, Inc., dated December 14, 1999, the applicant shall mitigate the loss of the additional Purple

Needlegrass at a ratio of 4:1 in the same location as the proposed mitigation site. If the mitigation site is too small to accommodate the required additional restoration, the biological consultant shall identify another suitable site within the project vicinity, subject to the review and written approval of the Executive Director.

B. The permittee shall undertake development in accordance with the approved final plans. Any proposed changes to the approved final plans shall be reported to the Executive Director. No changes to the approved final plans shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is required.

11. CONFORMANCE WITH FINAL GEOLOGIC RECOMMENDATIONS

A. All final design and construction plans, including foundations, grading and drainage plans, shall be consistent with all recommendations contained in the June 6, 2000 report by NMG Geotechnical, the August 6, 1999 and August 30, 1999 reports by Goffman, McCormick and Urban, and the Leighton and Associates letter of 16 June, 2000 and subsequent supplemental reports. **PRIOR TO THE ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT**, the applicant shall submit, for the Executive Director's review and approval, evidence that an appropriate licensed professional has reviewed and approved all final design and construction plans and certified that each of those final plans is consistent with all of the recommendations specified in the above-referenced geologic evaluation approved by the California Coastal Commission for the project site.

B. The permittee shall undertake development in accordance with the approved final plans. Any proposed changes to the approved final plans shall be reported to the Executive Director. No changes to the approved final plans shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is required.

12. BRIDGE PLANS

A. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit revised plans, subject to the review and written approval of the Executive Director, for the proposed Muddy Canyon bridge located in PA 17. Plans shall be to scale and include a site plan on a topographic base map (or grading plan), plan views, elevations and cross-sections. All bridge supports and abutments must be shown in relationship to the wetlands located in Muddy Canyon and must avoid all such wetlands. The plans shall be reviewed and approved by the Department of Parks and Recreation prior to submittal.

B. The permittee shall undertake development in accordance with the approved final plans. Any proposed changes to the approved final plans shall be reported to the Executive Director. No changes to the approved final plans shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is required.

13. EVIDENCE OF EXECUTION AND RECORDATION OF OFFER TO DEDICATE FEE TITLE TO OPEN SPACE LANDS

PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit, for the review and approval of the Executive Director, written evidence that an offer to dedicate fee title to Planning Areas (PA) 12E and PA 12G has been executed and recorded, consistent with the Land Dedication Policies of the certified Newport Coast LCP. The offer to dedicate in fee PA 12E shall be made to the County of Orange and shall irrevocably limit the use of PA 12 E to open space and conservation purposes. The offer to dedicate in fee PA 12G shall be made to the County of Orange or the California Department of Parks and Recreation and shall irrevocably limit the use of PA 12G to open space and recreation purposes.

14. PERMANENT WATER QUALITY CONTROL PLAN REQUIRED FOR PROPOSED DEVELOPMENT IN PLANNING AREAS 4A, 4B, 5, 6 AND 12C

PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit final Water Quality Control Plans for Planning Areas 4A, 4B, 5, 6, and 12C, for the review and approval of the Executive Director

A. The final Water Quality Control Plan shall be designed in accordance with all applicable State, County and Regional regulations to ensure compliance with all applicable State, County and Regional water quality objectives or standards, including but not limited to the following:

1) Pollutants in stormwater shall be reduced to the maximum extent practicable through the use of BMPs
2) Implementation of the project shall not create a nuisance or pollution as defined in the California Water Code
3) The project shall not cause a violation of any applicable water quality standard for receiving waters adopted by the RWQCB or the SWRCB, as required by the Clean Water Act, or the Porter-Cologne Water Quality Control Act, including but not limited to any applicable standards in the California Toxics Rule and the California Ocean Plan.
4) The discharge of any substance in concentrations toxic to animal or plant life is prohibited.

B. The Final Water Quality Control Plans shall incorporate: (1) the source and treatment control Best Management Practices (BMPs) and other water quality measures in the amount, type and physical location proposed and specified in the *Newport Coast Planned Community, Crystal Cove Stormwater Quality Evaluation Report*, dated 6/14/00, and graphically depicted in the *Master Drainage and Water Quality Enhancement Program (MDWQEP) for the Newport Coast Planned Community* (6 sheets), dated 7/24/00 (as modified by Special Condition 18) and (2) those measures with specification described below. Such measures include, but are not limited to the following types, which shall be implemented consistent with the above requirements:

1) Non-structural Best Management Practices (BMPs) including but not limited to:
   a) Fertilizer and Organic Soils Management,
   b) Advanced street sweeping and litter pick-up,
   c) Homeowner education regarding Nonpoint Source pollution and proper use of pesticides
2) Routine structural BMPs:
   a) Inlet trash racks,
   b) Energy dissipaters on stormwater outfalls,
   c) Efficient irrigation technology,
   d) Vegetated swales
   e) Extended detention ponds and
   f) catch basin media filters
   g) Regional Drainpacs shall be sized using a rating of 25%, rather than 50% of hydraulic conductivity, thus doubling the size of the filter surfaces area proposed, and
   h) Detention basins 1, 2, 3 and 6 shall be designed in a manner which demonstrates that high flows will not flush out the material retained during the low flow first flush.

C. The permittee shall undertake development in accordance with the approved final plans. Any proposed changes to the approved final plans shall be reported to the Executive Director. No changes to the approved final plans shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is required.

15. ADDITIONAL WATER QUALITY MITIGATION MEASURES PROPOSED FOR PLANNING AREAS 3A,3B,4A,4B,5,6,12C,14 AND PORTIONS OF 1C, 2B, 2C, 10B, 11B,13A AND 13F.

A. CONSISTENT WITH THE TERMS OF THE PROPOSED PROJECT AND PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant is required to submit final water quality control plans for the review and approval of the Executive Director, demonstrating compliance with all of the requirements specified below:

B. The applicant is required to implement: (1) the water quality measures proposed for Planning Areas 2C, 3A, 3B and 14, in the amount, type and location proposed and specified and the *Newport Coast Planned Community Stormwater Quality Evaluation Report*, dated 6/14/00, and graphically depicted in the *Master Drainage and Water Quality Enhancement Program (MDWQEP) for the Newport Coast Planned Community* (6 sheets), dated 7/24/00 (as modified by Special Condition 18), and described here and (2) those measures with specifications described below:

(i) Non-structural Best Management Practices (BMPs) including but not limited to:

a) Fertilizer and Organic Soils Management,

b) Advanced street sweeping and litter pick-up,

c) Homeowner education regarding Nonpoint Source pollution and proper use of pesticides

(ii) Routine structural BMPs:

a) Vegetated swales

b) Extended detention ponds,

c) Storm water flow from Pas 3A, 3B, and 14 shall either be routed to the proposed extended detention basin (Basin No. 6) or shall receive the benefit of filtration through Drainpak filter insert devices installed in catch basins or water quality inlets receiving drainage from Pas 3A, 3B, and 14.

(i) Regional Drainpaks shall be sized using a rating of 25% of hydraulic conductivity.

d) a clarifier at the service station if the station is built

C. Concurrent with the first phase of construction as indicated on the August 9, 2000 Phasing Plan, the applicant is required to construct and fully implement a dry-weather diversion system designed to accommodate dry weather nuisance flows from Planning Areas 3A,3B,4A,4B,5,6,12C,14 and the portions of 1C, 2B, 2C,

10B, 11B,13A and 13F, which drain into Los Trancos or Muddy Canyon, during the period of April 15 through October 31st of each year for the life of the project, as proposed and specified and the *Stormwater Quality Evaluation Report*, dated 6/14/00, and graphically depicted in the *Master Drainage and Water Quality Enhancement Program (MDWQEP) for the Newport Coast Planned Community* (6 sheets), dated 7/24/00 (as modified by Special Condition 18), and generally described below:

(i) The diversion system shall be designed to intercept and divert dry weather nuisance flows Planning Areas 3A,3B,4A,4B,5,6,12C,14 and the portions of 1C, 2B, 2C, 10B, 11B,13A and 13F, which drain into Los Trancos or Muddy Canyon, as proposed, during the period of April 15 through October 31st of each year for the life of the project, and convey these nuisance flows to the publicly owned treatment works operated by the Orange County Sanitation District (OCSD).

(ii) The applicant or successor in interest will be responsible for the long-term operation and maintenance of the diversion system. This includes any necessary improvements physical or otherwise to the diversion system, and ongoing maintenance and repair, in order to ensure compliance with the requirements and provisions of this condition. The applicant shall provide evidence of a sufficient funding mechanism or allocation, to uphold requirements of this condition.

D. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall obtain, and submit to the satisfaction of the Executive Director, a binding agreement with the Orange County Sanitation District (OCSD) and the Irvine Ranch Water District (IRWD), verifying the District's capacity and commitment to accept dry-weather nuisance flow runoff from Planning Areas 3A,3B,4A,4B,5,6,12C,14 and the portions of 1C, 2B, 2C, 10B, 11B,13A and 13F, which drain into Los Trancos or Muddy Canyon, during the period of April 15 through October 31st of each year for the life of the project, for treatment in the wastewater collection system at the Treatment Plant. Diversion, as specified above, shall commence concurrent with the first phase of construction as indicated on the August 9, 2000 Phasing Plan.

E. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall execute and record a deed restriction, in a form and content acceptable to the Executive Director incorporating all of the above terms of Special Condition 15C. The deed restriction shall include a legal description of Planning Areas 3A, 3B, 4A, 4B, 5, 6, 12C,14, and the portions of 1C, 2B, 2C, 10B, 11B, 13A, and 13F which drain into Los Trancos or Muddy Canyon. The deed restriction shall run with the land binding all successors and assigns, and shall be recorded free of prior liens that the Executive Director determines may affect the enforceability of the restriction. The deed restriction shall not be

removed or changed without a Commission approved amendment to this coastal development permit.

F.The permittee shall undertake development in accordance with the approved final plans. Any proposed changes to the approved final plans shall be reported to the Executive Director. No changes to the approved final plans shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is required.

16. BMP MAINTENANCE AND MONITORING PLAN FOR PROPOSED AND REQUIRED MITIGATION MEASURES

A. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit a Maintenance and Monitoring Plan for Nonpoint Source Best Management Practices required by and specified in Special Conditions 14 and 15 of this permit, which are located in or accommodate development in Planning Areas 2C, 3A,3B, 4A,B, 5, 6,12C and 14for the review and approval of the Executive Director.

B. The Maintenance Plan shall be designed to ensure that all approved BMPs which are located in or accommodate development in Planning Areas 2C, 3A,3B, 4A,B, 5, 6,12C and 14, with the exception of the dry weather nuisance flow diversion which is governed by Special Condition 15, are maintained and monitored in accordance with maintenance and monitoring recommendations contained in the *California Storm Water Best Management Practices Handbooks* and Section 5.2 of the *Newport Coast Planned Community, Crystal Cove Stormwater Quality Evaluation Report (SWQER)*, dated June 14, 2000 and shall ensure that:

1. The applicant/owner or successor in interest shall be responsible for regular maintenance including inspection and regular cleaning of all approved BMPs which are located in or accommodate development in Planning Areas 2C, 3A,3B,4A,4B, 5, 6, 12C and 14, with the exception of the dry weather nuisance flow diversion which is governed by Special Condition 15, to ensure their effectiveness prior to and during each rainy season from October 15 through April 15 of each year, for the life of the project. Debris and other water pollutants contained in BMP filters or devices must be contained and disposed of in a proper manner on a regular basis. All BMP traps/separators and/or filters must be inspected, cleaned and replaced when necessary in accordance with the specific recommendations of Section 5.2.2 of the SWQER cited above, and at a minimum, prior to the start of the winter storm season, no later than October 15th each year.

(a) Annual reports documenting inspection and maintenance activities shall be submitted to the Coastal Commission no later than June 30th of each year. The reports shall include, date, time and location of all inspections, and any

textual or graphic documentation necessary to support maintenance activity undertaken or lack thereof where unnecessary.

C. The applicant shall submit final plans for conducting post-development monitoring as proposed by the applicant pursuant to an agreement with the RWQCB. The plan shall be based on the scope recommended in Section 5.2.3 of the SWQER cited above, specifically:

1. A flow-weighted composite sampling approach shall be utilized to sample runoff water quality in Muddy Canyon downstream of the extended detention pond and the wetland located at the agricultural reservoir, from 3 storms per year.
2. The post-development monitoring as specified above, and required by this in this special condition, shall be conducted for a minimum period of 2 years, following completion of development. If water quality is found to be acceptable by the Executive Director in consultation with the RWQCB staff based on a comparison with in-stream aquatic life water quality standards, and any other applicable receiving water quality standards as determined by the SWRCB or RWQCB, monitoring shall be terminated at the end of the 2 year period. If a particular pollutant is found in concentrations considered unacceptable by the RWQCB due to applicable water quality standards, including but not limited to any applicable standards in the California Toxics Rule and the California Ocean Plan, the applicant shall conduct an assessment of the potential sources of the pollutant and potential remedies. If it is determined based on this assessment that applicable water quality standards have not been met as a result of inadequate or failed BMPs, corrective actions or remedies shall be required.
3. If potential remedies or corrective action constitute development, as defined by Section 30106 of the Coastal Act, an amendment to this permit shall be required, unless the Executive Director determines no such amendment is required.
4. Results of this monitoring effort shall be submitted to the Coastal Commission upon availability.

D. The permittee shall undertake development in accordance with the approved final plans. Any proposed changes to the approved final plans shall be reported to the Executive Director. No changes to the approved final plans shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is required.

E. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall execute and record a deed restriction, in a form and content acceptable to the Executive Director incorporating all of the above terms of Special Condition 16B. The deed restriction shall include a legal description of Planning Areas 3A, 3B, 4A,

4B, 5, 6, 12C, and 14. The deed restriction shall run with the land binding all successors and assigns, and shall be recorded free of prior liens that the Executive Director determines may affect the enforceability of the restriction. The deed restriction shall not be removed or changed without a Commission approved amendment to this coastal development permit.

17. WATER QUALITY AND MARINE ECOLOGICAL MONITORING PLAN FOR THE CRYSTAL COVE DEVELOPMENT PROJECT

A. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit a final *Water Quality and Marine Ecological Monitoring Plan for the Crystal Cove Development Project*, for the review and approval of the Executive Director, designed to characterize and evaluate the potential effects of stormwater and non-stormwater runoff from the proposed development on receiving waters and ecological resources associated with the inland streams Muddy Canyon and Los Trancos Canyon, and ocean waters in Crystal Cove.

B. The *Water Quality and Marine Ecological Monitoring Plan for the Crystal Cove Development Project* shall include the following components:

1) A Quality Assurance/Quality Control Plan that includes reporting limits for the constituents shown in the following section C1-7 that are below the Water Quality Objectives (WQOs) that have been identified by the RWQCB, where detection of such limits is reasonably attainable through standard practice and methods. If no WQOs are available then the reporting limits should be below acute and chronic toxicity levels for the test species indicated in Section C8-9 below where reasonably feasible.

2) An accurate and legible map of the proposed sampling locations as follows: identify four monitoring stations each in Muddy Canyon, Los Trancos Canyon and Emerald Canyon based on criteria established in subsections 17. B.(2)(1-4) below and; an additional monitoring station shall be established at the mouth of Los Trancos Canyon, as more fully described in subsection 17. B. (2)(5) below, resulting in a total of 5 monitoring stations required for the Los Trancos watershed exclusively. The following four sampling stations are intended to represent four locations within each respective watershed: 1) upstream from significant development or future development, 2) near the mouth of the watershed, but above Pacific Coast Highway, 3) in the surf zone adjacent to the mouth of the watershed, and 4) beyond the surf zone where the water is 20 feet deep at Mean Lower Low Water. Exclusive to the Los Trancos watershed, an additional monitoring location recognized and identified herein as a fifth station shall be established as follows: 5) on the seaward side of Pacific Coast Highway, at the mouth of the watershed, directly downstream of the auto bridge in the Crystal Cove Historic District,

at a point which will allow sampling of discharge from the 48" RCP and the 30" CMP above the surf zone.

3) Should monitoring results indicate that incidents are occurring in which applicable water quality standards are not being met, and/or that re-occurring incidents are threatening to establish a condition in which applicable water quality standards are not being met, the applicant shall investigate the cause or source of the incidents and/or condition, and provide information to the Executive Director demonstrating any incidents and/or resulting condition in which applicable water quality standards have not been met is not the result of applicant's failure to comply with the terms and conditions of this Permit. Should the Executive Director determine, otherwise, based on the information generated from the applicant's investigation and all other information available to the Executive Director, corrective actions or remedies shall be required. If remedies or corrective actions constitute development under Coastal Act Section 30106 of the Coastal Act, an amendment to this Permit shall be required, unless the Executive Director determines no such amendment is required.

C. The *Water Quality and Marine Ecological Monitoring Plan for the Crystal Cove Development Project* shall utilize the following parameters:

1. SAMPLING AND ANALYSIS FOR PATHOGEN INDICATOR BACTERIA:
   Sampling for total and fecal coliforms and enterococci at all stations during storm and dry-weather runoff. Analysis of additional Orange County data for same study locations and adjacent sites.

2. SAMPLING AND ANALYSIS FOR PHYSICAL CONSTITUENTS OF RUNOFF:
   Total suspended solids (TSS), Total dissolved solids (TDS), Freshwater hardness, Salinity, Standard observations of water clarity, color, degree of turbidity, and debris.

3. SAMPLING AND ANALYSIS FOR TRACE (HEAVY) METALS:
   Full sampling at all stations for the 7 trace metals cadmium, chromium, copper, lead, nickel, silver, and zinc in both their total and dissolved forms.

4. SAMPLING AND ANALYSIS FOR PESTICIDES:
   Full sampling at all stations for 26 organophosphorus pesticide compounds, including chlorpyrifos, diazinon, malathion, and parathion.

5. SAMPLING AND ANALYSIS FOR NUTRIENT CHEMICALS:
   Full sampling at all stations for, Nitrate + nitrite, Total Kjeldahl nitrogen, Total phosphorus, Dissolved phosphorus

6. SAMPLING AND ANALYSIS FOR PETROCHEMICALS:
Total recoverable oil and grease at all stations

7. SAMPLING AND ANALYSIS FOR DRY-WEATHER RUNOFF:
Sampling once per month in each watershed exhibiting such runoff. All of the above described microbiological, physical and chemical constituents analyzed.

8. TOXICITY BIOASSAYS FOR STORM RUNOFF:
Acute (48 – 96 hr) toxicity testing using initial runoff water to assess its effects on a freshwater daphniid crustacean indicator species and a marine mysid crustacean indicator species. Testing conducted with water sampled during three representative storm events.

9. TOXICITY BIOASSAYS FOR DRY-WEATHER RUNOFF:
Acute (48 hr) and Chronic (7 day) toxicity testing in which a freshwater daphniid crustacean indicator species is exposed to dry-weather runoff water. Testing conducted 3-4 times per year for each watershed exhibiting runoff.

10. QUANTITATIVE ECOLOGICAL STUDIES OF ROCKY INTERTIDAL HABITATS NEAR MOUTHS OF THE THREE WATERSHED CANYONS:

a) Before and after storms, repeated sampling of the same groups of individuals in mussel and sea anemone indicator species associations (template photo quadrat sampling) to evaluate possible changes in relation to runoff.

b) Before and after storms, repeated sampling of five different indicator species groups (invertebrates and algae). Randomly placed photo quadrats used to determine possible storm-related and other changes in species composition and abundance.

c) Before and after storms, repeated sampling of algal epiphytes (species composition and % cover) living attached to surfgrass. These epiphytes are good indicators of higher than normal nutrient chemical concentrations.

11. QUANTITATIVE ECOLOGICAL STUDIES OF ROCKY SUBTIDAL HABITATS OFFSHORE OF THE THREE WATERSHED CANYONS:

a) Before and after storms, repeated sampling of several different indicator species groups (invertebrates and marine plants. Randomly placed photo quadrats used to determine possible storm-related and other changes in species composition and abundance. Depth 20 ft MLLW.

b) Before and after storms, repeated sampling of algal epiphytes (species composition and % cover) living attached to surfgrass. Depth 20 ft MLLW. These epiphytes are good indicators of higher than normal nutrient chemical concentrations.

D. Quarterly reports containing data, and analytical assessment of data in comparison to any applicable water quality objectives and other criterion as specified herein, shall be submitted to the Coastal Commission, upon completion of each report.

E. The monitoring plan shall be approved based on consistency with the specifications herein. The monitoring plan conditionally required and approved by this coastal development permit shall be conducted for a period of 5 years. The date of December 15, 1999 shall be considered the commencement date for monitoring for the proposed development, for purposes of calculating the duration required for conducting monitoring in accordance with the plan specified above, and approved under this coastal development permit.

F. The permittee shall undertake development in accordance with the approved final plans. Any proposed changes to the approved final plans shall be reported to the Executive Director. No changes to the approved final plans shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is required.

18. REVISED MASTER DRAINAGE AND WATER QUALITY ENHANCEMENT PROGRAM

A. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit a revised version of the proposed *Master Drainage and Water Quality Enhancement Program (MDWQEP) for the Newport Coast Planned Community* (6 sheets) Volume I and II, dated 7/24/00. The plan shall be revised based on the following criteria, and shall demonstrate conformance with the following requirements, both narratively, and through graphic illustration:

1. All inconsistencies between the proposed *Master Drainage and Water Quality Enhancement Program (MDWQEP) for the Newport Coast Planned Community* (6 sheets) Volume I and II, 7/24/00, and the program described and evaluated in the *Newport Coast Planned Community, Crystal Cove Storm Water Quality Evaluation Report* dated 6/14/00 shall be resolved in a manner which is in substantial conformance with the water quality program described and evaluated in the *Stormwater Quality Evaluation Report* dated 6/14/00, including those measures which are proposed and described in the Report, but which were not modeled.

2. The final *Master Drainage and Water Quality Enhancement Program* Plans shall be consistent with all final conditions of approval contained herein, pertaining to proposed and required water quality management measures.

3. The final Master Drainage and Water Quality Enhancement Program Plans shall clearly illustrate where all runoff from the project is being discharged and what level of treatment, if any, it is receiving prior to discharge.

19. FLOW METER DETECTION DEVICES

A. PRIOR TO THE ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit for the review and approval of the Executive Director, final water quality control plans prepared by an appropriate licensed professional, which incorporate design specifications for the installation of flow meter detection devices and provisions for implementation of the flow meter detection monitoring and reporting activities described herein, and which demonstrate compliance with all of the following subsections:

B. The flow meter devices shall be engineered and installed to detect and estimate runoff from PAs proposed for diversion pursuant to Special Condition 15(C), specifically 3A, 3B, 4A, 4B, 5, 6, 12C, 14 and portions of 1C, 2B, 2C, 10B, 11B, 13A and 13, which are instead being discharged onto the beach or into Los Trancos Creek or Muddy Creek during the dry-weather season (April 15 through October 31st). The devices shall be located in the Los Trancos and Muddy Canyon low flow diversion pump wells and/or in pipes or culverts downstream of the pump wells, situated at a point capable of detecting and metering dry-weather flow discharging onto the beach and in Los Trancos and Muddy Creek as a result of the failure or otherwise inadequate operation of the low-flow diversion system. Upon installation, these devices shall be capable of detecting discharge of flow during the dry-weather season (April 15th through October 31st) onto the beach and into the Creeks (Muddy and Los Trancos), at a rate of no less than 15 gallons per minute (gpm) and shall provide estimates of flow rates that exceed 15 gpm. The devices must be installed and functional prior to the first dry-season (April 15th through October 31st) in which the dry-weather diversion system required by Special Condition 15 is in operation.

C. Monitoring & Reporting Requirements

1. The flow meters shall be engineered to transmit a flow detection signal to the applicant/or successor in interest when flow above 15 gpm is detected.

2. The applicant or successor in interest must have in place a system for monitoring or receiving transmission on a daily basis. The applicant or successor in interest shall be responsible for recording any incidents of flow

detection above15 gpm in a logbook with the date, time, location, estimate of flow rate in gallons per minute and duration of incident.

3. The applicant or successor in interest is responsible for conducting a site visit during the dry weather season (April 15th – October 31st), for the purposes of investigating flow (if any) which may be discharging on to the beach directly, or by way of the Creeks, at a rate less than 15 gpm. If flow is visually or otherwise observed, an investigation shall be undertaken to identify the source of the flow. If the investigation reveals the source of the flow to be nuisance runoff not attributable to a rainfall event from any of the Planning Areas cited in 19(B), the applicant shall proceed with actions outlined in 19(C)(4)(1). Site visits shall be recorded in a logbook and include the information noted in 19(C)(2).

4. Upon receipt of a flow detection signal, the applicant is responsible for notifying the Executive Director of the incident, and conducting an investigation of the cause and/or source of the incident. Pursuant to the investigation, corrective actions shall be taken to: 1) remedy any incident that is attributable to the fault, malfunction or other inadequacy of the diversion system and associated plumbing required by Special Condition 15(C), and which is not attributable to a rainfall event; and 2) prevent future discharge of flow which is required for diversion pursuant to Special Condition 15(C), to the beach and/or to Los Trancos Creek and/or Muddy Creek during the dry season (April 15th through October 31st). If potential remedies or corrective action constitute development, as defined by Section 30106 of the Coastal Act, an amendment to this permit shall be required, unless the Executive Director determines no such amendment is required.

5. In the event flow detection response activity is triggered pursuant to 19(C)(3) or (4), the applicant or successor in interest shall submit a summary report to the Executive Director within 30 days of the end of the dry-weather season (October 31st). The summary report shall include the following information:
    a) Date and time of any flow detection incidents;
    b) Location of incident;
    c) Duration of incident;
    d) Estimates of flow rates; and
    e) Detailed description of flow detection response activity, e.g. investigation discoveries, corrective action taken.

6. The applicant or successor in interest will remain responsible for: (a) maintaining the flow meter detection devices and associated system in a functional condition for the life of the project; and (b) monitoring / recording information

and flow detection response activity as specified above for the life of the project. Information logs shall be made available to the public upon request.

*D. **PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT,** the applicant, Irvine Community Development Company, shall execute and record a deed restriction, in a form and content acceptable to the Executive Director incorporating all of the above terms of this condition. The deed restriction shall include a legal description of the applicant's entire parcel. The deed restriction shall run with the land, binding all successors and assigns, and shall be recorded free of prior liens that the Executive Director determines may affect the enforceability of the restriction. This deed restriction shall not be removed or changed without a Commission amendment to this coastal development permit.*

20. STATE PARKS CONDITIONS

Applicant shall undertake and maintain all development governed by CDP A5-IRC-99-301 in accordance with all conditions of approval of CDP A5-IRC-99-301 and, pursuant to the terms of the proposed project description, consistent with the July 27, 2000 letter to Tim La Franchi of State Parks and Recreation from Daniel C. Hedigan of the Irvine Company.

IV. Findings and Declarations

The Commission hereby finds and declares:

A. Standard of Review

The action currently before the Commission is the de novo portion of the appeal. The Commission's finding of Substantial Issue invalidated the locally issued coastal permit. Pursuant to Section 30604(b) of the Coastal Act, the Commission's standard of review for the proposed development is the certified Local Coastal Program. However, the proposed project is also subject to the Chapter 3 public access policies of the Coastal Act due to the development which is occurring seaward of Pacific Coast Highway, the first public road, onto the beach at Los Trancos Creek, Muddy Creek and the existing culverts that empty onto the coastal bluff face or onto the sand at beach level. The development that occurs is the discharge of water, resulting from the inland build-out of the planning areas subject to the permit, which could result in potential impacts on the public's access and recreational opportunities.

Also, because the proposed project also involves the fill of wetlands and other non-wetland jurisdictional waters of the United States, the applicant must obtain a 404 permit from the Army Corps of Engineers. The 404 permit can not be granted unless the applicant first obtains a federal consistency certification or waiver from the Commission. If the Commission were to approve this coastal development permit, it would also serve as the federal consistency certification.

Section 30603(a)(4) of the Coastal Act provides that, after certification of the LCP, all locally approved development in unincorporated areas, except for "the principal permitted use" is appealable to the Coastal Commission. The Newport Coast LCP does not specify a single "principal permitted use". Therefore, all subsequent coastal permits issued by the County of Orange, such as project level subdivisions, grading and construction of residential, commercial or recreational development will be appealable to the Coastal Commission.

B. Project Location and Description

The proposed project involves approximately 980 acres of undeveloped moderate to steeply sloping hillsides, canyons, and ridges (referred to as Planning Areas (PA) 4A, 4B, 5 (and the northeastern portion of PA 2C) (Addendum, p.20, #6), 6 and 12C) and includes a large lot subdivision and approval of Vesting Tentative Tract Map 15447, for future residential development (up to 635 homes) and private recreation development (32 acres), 298.5 acres of dedicated open space lands (PAs 12E and 12G) and the construction of backbone infrastructure (drainage facilities, utilities, roads, etc) (Exhibit 1). Also proposed are minor boundary adjustments between the planning areas and technical revisions to the previously proposed VTTM 15447 to reflect the changes in grading that was necessitated by the redesigned detention basin plans (Exhibit 33). The County of Orange, Planning and Development Services Department has submitted a letter indicating that they approve of the changes that have been made to the development covered by the previously approved Coastal Permit 97-0152. They have approved the technical revisions to the adjacent Planning Areas outside of this permit area. Finally, the local government acknowledges that they must delay action on affected subsequent permit approvals until Commission action on this permit (Exhibit 37).

Planning Area (PA) 2C is located on both the east and west sides of Los Trancos Canyon, just south of the coastal zone boundary. The portion of PA 2C located on the east side of Los Trancos is immediately north of PA 5 and immediately west of PA 6 (Exhibits 11 and 33a). Some of the maps that were included in the permit record PA 97-0152 at the time of the local government action showed a configuration of PA 5 as extending northerly almost up to the coastal zone boundary, similar to the northerly boundary of PA 6. However, a boundary adjustment has occurred whereby the portion of PA 2C that lies on the east side of Los Trancos Canyon now includes area that was previously shown to be part of PA 5. The LCP allows this type of Planning Area boundary adjustment. The land area that was included in PA 5 at the time of the local government action is now located in both PA 5 and the northeastern portion of 2C. Therefore, the Commission has jurisdiction over this portion of PA 2C in this de novo action (Addendum, p.18, #1).

The proposed Vesting Tentative Tract Map (VTTM) 15447 subdivides the area into: large parcels for financing and/or sale or lease to builders (or in the case of the Conservation Areas 12E and 12G, dedication to a public agency) who will further subdivide the areas to ultimately build up to 635 detached single family homes on 581.5 gross acres (PA 4A, 4B, 5 (and a portion of 2C) and 6); the construction of a 32 acre private recreation facility on the 100 acre PA 12C site; and dedication as Conservation open space of 298.5 acres (PA 12E and 12G). The residential development closest to Pacific Coast Highway (PA 4A and 4B) is Medium density (3.5 to 6.5 du/a), in the upper area (PA 5) Medium Low density (2 to 3.5 du/a) and Low density (up to 2du/a) in PA 6. (Exhibit 1). The applicant is however no longer planning to develop future homes in PA 6. Through a subsequent coastal permit application, that area will be developed with recreational park uses only.

Mass grading totaling 48,191,680 cubic yards (cy) is proposed. This figure also includes remedial grading. Grading of the lower area (PA 4A, 4B and 12C) totals 32,491,680 cy of balanced cut and fill. This amount includes 300,000 cubic yards of remedial grading. Upper area grading (PA 2C, 5 and 6) totals 15,700,000 cy of balanced grading, of which 2,700,000 is remedial earthwork. Planning Area 2C, is located adjacent to Signal Peak and immediately west of PA 5. This PA is not included in the permit approved by the County and appealed to the Commission, but for purposes of the proposed grading, is now part of this application. Approximately one million cubic yards of fill material is also coming from the Newport Ridge (PA15) area that is outside the coastal zone.

Grading in Crystal Cove State Park within the Irvine Company's retained easement is also proposed but has been reduced over the earlier proposal. The Irvine Company's retained easement allows remedial grading and roads within 150 feet of the common boundary. Grading operations will create residential pads in PA 4A, 4B, one super pad in PA 12C for recreational facilities, and super pads in PA 2C, 5 and 6 requiring future pad grading of home sites in PA 2C and 5 and for recreational park use in PA 6 (Addendum, p.20, #7). The design of the residential areas as described in the amendment to the master permit is, "a series of custom lot enclaves and future private access roads on terraces separated by slopes from 20 to 50 feet high to follow the rising elevation of the site." This project design entails cut slopes as deep as 135 feet and fill slopes up to 205 feet in height. One fill slope that faces down into Muddy Canyon will be approximately 350 feet in height. Exhibits 6 – 10 illustrate the grading concept.

The existing 3,800 ft. long fire access dirt road which goes through previously dedicated open space area (PA 12A) connecting PA 4A to PA 5 was required by the Orange County Fire Authority to be widened from the current 12 ft. to 26 ft. wide. Adjacent to the existing fire access road is several patches of Purple Needlegrass, a component of once widespread environmentally sensitive native Needlegrass grassland. The Purple Needlegrass remnant is no longer considered ESHA. Although the road is proposed to be narrowed to a maximum of 14 feet where it is adjacent to Needlegrass to avoid impacting it, 0.4 acres of Needlegrass will be loss through road widening in one location

and due to proposed residential development in PAs 4A and PA 5 (Exhibit 2). The applicant is proposing to mitigate the loss of Purple Needlegrass through the creation of a 1.6 acre Southern Coastal Needlegrass grassland (4:1 ratio) adjacent to an existing healthier stand of Needlegrass located away from the road (Exhibit 2).

The applicant is also proposing to fill 0.05 acres of seasonal wetlands in PA 4A in conjunction with residential development of the area and to mitigate the fill of the wetlands by constructing three seasonal wetlands totaling 0.40 acres at the top of a knoll in the adjacent conservation area PA 12E. The wetlands would mimic the four (Addendum, p.20, #8) existing seasonal wetlands, at a 4:1 ratio (See Exhibit 3). The applicant is proposing to mitigate the fill of the wetlands even though they contend that the existing wetlands, created during past agricultural use of the property, are excluded from the definition of wetlands as defined by Section 13577(b)(2)of the Commission's regulations.

The project proposal also includes additional wetland/riparian mitigation necessary to obtain an Army Corps of Engineer (Corps) 404 permit and as a part of the proposed water quality enhancement program. The proposed wetland/riparian mitigation and monitoring plan, prepared by LSA Associates, Inc. and revised May 16, 2000 creates or enhances a little over 3 acres of wetlands creation , expansion and enhancement within the project area and off-site mitigation at San Joaquin Marsh to mitigate temporary stream and non-wetland waters impacts. Although the application no longer includes the fill of 0.12 acres of fill of wetlands in Muddy Canyon for a detention basin and road to provide access to PA 12C, the wetlands/riparian mitigation plan has not been reduced. The plan now calls for the construction of a 34-foot wide, 40-foot high bridge to access the private recreation site located on the opposite side of Muddy Canyon. The proposed bridge will cause shading impacts on 40.5 sq.ft. or 0.0009 acres of riparian wetlands within Muddy Creek. The proposed revised wetlands/riparian mitigation plan also includes mitigation for these shading impacts.

The project description also includes the implementation of a water quality improvement program as more fully described later in this report. According to the applicant, the water quality enhancement program is considered "state of the art" and was already partially developed at the time of the appeal and has been expanded and enhanced as a result of discussions with interested agencies, including Coastal Commission water quality staff. While the Irvine Company is proposing the water quality treatment program, they also state that the Commission may lack any legal ability to impose a comprehensive mitigation program for water quality. This assertion is addressed in the water quality section of this report. The water quality enhancement program includes frequent vacuum street sweeping; the installation of debris and contaminant filters in selected catch basins and storm drain outlets; diversion of dry weather nuisance runoff to the local sewage treatment plant; and the construction of wetland/riparian mitigation areas which serve the dual purpose of mitigation for the loss of wetlands and other non-wetlands

waters required by the Army Corps of Engineers (ACOE) for a 404 permit approval and filtering runoff as a component of the water quality program.

The proposed project is located in the unincorporated southern coastal Orange County area in the Newport Coast (formerly Irvine Coast) segment of the LCP planning area. Specifically, the project site is located North of PCH, West of Crystal Cove State Park and East of the City of Newport Beach (Exhibit 4). The project site is characterized by undeveloped natural hillside slopes and canyons. Although no development exists on the property, it was previously farmed and grazed by cattle in the past. The western project boundary is Los Trancos Canyon. The western side of Los Trancos Canyon is built out with residential, golf course and tourist commercial hotel development and the Los Trancos Beach Public Parking Lot adjacent to PCH (PA 2B, 2C, 10B, 13B, and 17, respectively). To the east of the project boundary is Crystal Cove State Park (PA 17) and beyond the state park is approximately 2,000 acres of wilderness open space area that has been/will be dedicated to the County of Orange as the Irvine Coast Wilderness Regional Park (Exhibit 5).

C. LCP Area Description

The Newport Coast (formerly Irvine Coast) Local Coastal Program area is comprised of 9,493 acres in southwestern unincorporated Orange County (Exhibit 4). If the land that is now part of Crystal Cove State Park (which has its own certified Public Works Plan) is also considered, the Newport Coast area would extend from the three and one-half mile long shoreline of the Pacific Ocean to the ridge of the San Joaquin Hills and the San Joaquin Hills Transportation Corridor. Moderate to steep hillside terrain, canyons and ridgelines (Exhibit 1 and 5A) characterize the LCP area. The shoreline is characterized by a series of sandy cove beaches interspersed with rocky and headlands areas. On the inland side of PCH, the gentler sloping Pelican Hill and Wishbone Hill areas are in the northwestern portion of the LCP area. These ridges and hillsides contain three major canyons, Buck Gully, Los Trancos and Muddy Canyon. On the eastern end of the LCP area are Moro Canyon and Emerald Canyon (Exhibit 11). Extensive coastal sage scrub covers most of the area and portions of the LCP area are within the Central and Coastal Subregion Natural Communities Conservation Program (NCCP)/Habitat Conservation Plan (HCP).

The 3.5 miles of the Newport Coast shoreline is designated a Marine Life Refuge by the Department of Fish and Game. It is the largest marine life refuge in California – approximately 20,000 ft. in length and 600 ft. wide (600 ft. seaward of the "line of ordinary high tide"). The California State Water Resources Control Board also designates the coastal waters an Area of Special Biological Significance (ASBS). In 1972, the area was also listed as a potential educational reserve in the California Comprehensive Ocean Area Plan. The LCP designated the off-shore coastal waters ESHA Category "C" and contains policies to protect the biological integrity of this marine resource. The Marine Life Refuge/Area of Significant Biological Significance is characterized by jagged,

rocky reefs and pinnacles extending from the intertidal zone to depths of 40 to 50 feet. Rocky outcroppings also occur at depths of 60 to 600 feet. The flora and fauna of these areas are highly diversified, particularly the rocky intertidal areas and the offshore kelp community.

Portions of the inland slopes were extensively used for cattle grazing. During that time, the natural brush was often cleared and herbicides were used to artificially expand the grassland for grazing purposes and to prevent the encroachment of the natural coastal sage scrub and other native brush into the "pasture" areas. The coastal bluffs were also farmed for a number of years. Despite the changes to the vegetation that occurred during the period of grazing and farming, the LCP area still contains vast areas of natural habitats and supports a diversity of wildlife species. The number and diversity of species are enhanced by the presence of ecotones created by the variation in habitats, the small area covered by many of the habitat stands, and the mix of stands.

The land uses of the 9,493 acre LCP area (including the 2,807 acre Crystal Cove State Park which is now covered by a separate Public Works Plan and not a part of this LCP) include 277 acres designated tourist commercial; 1,873 acres designated low, medium-low, medium and high density residential land use; and 7,343 acres of open space (public and private parks, recreation and conservation) land use. Included within the open space designation is 455 acres of golf course use (two 18 hole courses), private passive and active parks, publicly dedicated passive recreation open space areas and Crystal Cove State Park. The LCP allows a maximum of 2,600 residential units, 2,150 resort/overnight accommodations and 2.66 million square feet of commercial development.

D. PREVIOUS LCP BALANCING

The Commission's standard of review for the proposed development is the certified Newport Coast (formerly Irvine Coast) LCP. The Newport Coast LCP is one of the seven segments of the Orange County Local Coastal Program. The certified LCP is comprised of the Land Use Plan (LUP) and the implementing ordinances or implementing actions program (IAP). The Irvine Coast LUP was certified by the Commission on January 19,1982. The Implementing Actions Program along with the first amendment to the LUP was certified on January 14, 1988. In 1996, the Commission certified a second amendment to the Irvine Coast LCP and also approved the change in the name of the LCP segment to Newport Coast.

As detailed below, the Commission relied on the balancing provisions of the Coastal Act in the certification of the Newport Coast LCP. Section 30007.5 of the Coastal Act provides the Commission with the ability to resolve conflicts between Coastal Act policies. This section provides that:

> The Legislature finds and recognizes that conflicts may occur between one or more policies of the division. The Legislature therefore declares that in carrying out the provisions of this division such conflicts be resolved in a manner that on balance is the most protective of significant coastal resources. In this context, the Legislature declares that broader policies which, for example, serve to concentrate development in close proximity to urban and employment centers may be more protective, overall, than specific wildlife habitat and other similar resource policies.

In its action approving the Newport Coast LCP, the Commission balanced Coastal Act policies that protect individual scenic natural landforms, blueline streams, significant land resources such as coastal sage scrub and native grasslands, and archaeological resources against the Coastal Act provision which seeks to concentrate development next to existing development and roads and where it can be otherwise more suitably accommodated. The Commission resolved these conflicts in favor of preserving the most sensitive habitat and archaeological resource areas and the dedication for open space purposes of large contiguous tracts of land rather than preserve each isolated, fragmented environmentally, visually and culturally sensitive area. This method of resource protection was found by the Commission, on balance, to be more protective overall of coastal resources.

Land Use Plan

The 1982 certified LUP allowed development of up to 3,730 acres of the LCP area with a maximum of 2,000 residential units and visitor-serving commercial development including 2,000 hotel/motel units, restaurants, commercial recreational facilities, tourist-commercial shops and offices totaling 300,000 square feet. This development was allowed within designated Planning Areas that contained scenic natural landforms, natural streams and tributaries, and archaeological resources. Two arterial highways were designated through the Irvine Coast LCP area in a general north/south direction: Pelican Hills Road, a six lane major highway, and Sand Canyon Avenue, proposed as a four lane primary arterial highway with a fifth passing lane.

In conditionally certifying the LUP in 1982, the Commission specifically found:

> The underlying concept of the Irvine Coast LCP land use plan is a dedication of open space, to preserve it in its natural undisturbed state, mitigation for the impacts associated with residential and commercial development that would not otherwise be found to be consistent with the Coastal Act. The Commission finds that this approach is an appropriate way to maximize protection of environmentally sensitive areas, by concentrating development and preserving large contiguous areas of open space.

The Commission approved the LUP subject to conditions requiring that (1) the proposed Sand Canyon Avenue be limited to two lanes in order to minimize the significant adverse

impacts including destruction of the bottom of Muddy Canyon, significant impacts to the wildlife corridors connecting Los Trancos Canyon with the proposed conservation areas, as well as visual impacts to park users; (2) the provision of policies to ensure that grading activities protect coastal views and natural resources; (3) environmentally sensitive areas policies to ensure that the resources are mapped using current information, that the rate of run-off in streams and gullies associated with development does not cause excessive siltation and impacts on the off-shore environment, protection of land resources through fuel modification practices and the protection of environmentally sensitive resources by requiring that the least environmentally damaging alternatives are employed in development projects; (4) and modification to the land dedication program including the timing of dedication, the development to dedication ratio, and phasing and requiring the landowner, the Irvine Company, to enter into a Development Agreement with the County of Orange to assure the implementation of the approved dedication program.

As mitigation for the impacts of that development, 2,650 acres of undisturbed land in the southeasterly portion of the LCP area was to be dedicated to the public for environmentally sensitive habitat preservation, archaeological resource protection, visual resources protection and the provision of public access trails and low intensity public recreation use (Exhibit 12). Although the land dedication was to mitigate the impacts of development on the natural and cultural resources of the area, the LCP also contains policies to minimize the impacts of development by means such as site selection and grading controls to reduce erosion and siltation of off-shore waters; development edge controls, buffers and setbacks to reduce impacts on habitat and wildlife in conservation areas; retention of Los Trancos Canyon and Buck Gully as (private) open space allowing only minimal development to preserve the significant scenic and habitat resources within the development area while providing for on-site recreation opportunities for the new residents of the LCP area; and other policies to preserve significant riparian vegetation, archaeological and paleontological resources and reduce visual impacts of residential development.

In addition to the 2,650 acre open space dedication, the LUP also required the following additional open space area:

- 1,900 acre purchase of land by the Department of Parks and Recreation creating Crystal Cove State Park, and an additional 500 acre gift (Moro Ridge) from the Irvine Company for the state park;

- the right of the State to purchase an additional 393 acres of park land;

- 931 acres of the proposed Orange Coast National Urban Park; and

- 570 acres of private open space recreation areas within the development Planning Areas.

The public lands dedication and purchase combined with the private open space areas resulted in 60% to 74% of the LUP area being devoted to open space use.

LCP First Amendment

In 1988, the Commission approved the first amendment to the Irvine Coast LUP and certified the Implementing Actions Program to carry out the amended LUP. The amended LUP proposed substantial changes to the residential, visitor-serving commercial and park/open space areas as well as the resource protection policies and the resource dedication program. The Commission approved the LUP amendment and IAP as submitted by the County of Orange. The highlights of the amended LUP were (1) deletion of permitted office use (200,000 sq. ft.); (2) expansion of hotel and visitor-commercial use near the intersection of Pelican Hill Road (now Newport Coast Drive) and PCH to include two 18-hole golf courses encompassing 367 acres, 400 additional hotel rooms (total 1,900) and 25,000 sq. ft. of additional commercial retail use (75,000 sq. ft. total); (3) clustering of 2,600 market rate residential units on the ridges; (4) preservation of open space in Buck Gully, Los Trancos Canyon, the frontal slopes of Pelican Hill, Muddy Canyon and 2,666 acres of land between the recently established 2,807 acre Crystal Cove State Park and the City of Laguna Beach.

Although the amended LUP allowed an increase in the number of residential units, from 2,000 to 2,600, the actual amount of land area devoted to residential use was reduced from 38% to 23%. The total percentage of the LCP area devoted to open space use was increased from 61% to 74%, not including the two golf courses. The Commission found that the policies proposed to protect the marine environment in conjunction with golf course use were consistent with Section 30231 of the Coastal Act. Those provisions included the creation of a riparian corridor within the Category "D" ESHA (similar to what is being proposed in PA 5 in the subject permit), control of fertilizer, pesticide and herbicide use, and the preparation of a water quality monitoring program with regular reporting to the Regional Water Quality Control Board and the County of Orange. With respect to grading and urban runoff control policies, the amended LUP also required the preparation of a Master Drainage and Urban Runoff Management Plan to assess the cumulative impacts of development as well as reducing the land area devoted to low priority residential use.

The Commission's 1988 findings approving the amended LUP, as submitted, state "the findings adopted by the California Coastal Commission in approving the 1982 LUP contain a detailed analysis of Coastal Act consistency regarding the manner in which the open space dedication area mitigates the development impacts of 1982 land uses", thereby incorporating by reference the previous findings. Additionally, the Commission found:

> Among the primary goals of the Coastal Act are the protection of coastal resources and provision of public access to the coast. The Legislature, also recognized that conflicts might occur when carrying out all of the Act's policies. The legislature, therefore, established a "balancing" test. This test allows the Commission to approve a plan which, although it may cause some damage to an individual resource, on balance is more protective of the environment as a whole (Coastal Action Section 30007.5) Public acquisition of large, continuous open space areas, as specifically determined in the findings of approval for the 1982 LUP, is recognized as a superior means to guarantee mitigation of development impacts through the preservation of coastal resources such as vegetation, wildlife, and natural landforms, and to create new public access and recreation opportunities rather than preserving small pockets of open space surrounded by development.

The 1988 LCP findings went on to explain how the LCP balances Coastal Act required resource protection and public access and recreation against individual impacts to ESHAs. The Commission found that the LUP carries out Section 30240(a) of the Coastal Act through the preservation in its natural state a 2,666 acre open space area containing major canyon watersheds, visually significant ridgelines, stream courses with riparian vegetation (Category "A" and "B" ESHAs), archaeological and paleontological sites, coastal chaparral and other wildlife habitats. Additionally, 1,155 acres of habitat areas in Los Trancos Canyon, Buck Gully and Muddy Canyon would be conveyed into public management under the amended LUP in contrast to the 1982 LUP where these special use parks were under private ownership. Finally, consistency with 30240(a) was further achieved with the realignment of Sand Canyon Avenue to require that it be relocated out of Muddy Canyon and located up onto Wishbone Ridge in the LUP amendment along with the dedication of the canyon to the County. The Commission further found that the 2,666 dedicated open space area would be contiguous with the 2,807 Crystal Cove State Park to allow better management of the 5,473 acres of public recreational use.

The Commission also found that the amended LCP was consistent with Section 30240(b) of the Coastal Act that requires that development adjacent to ESHA areas not adversely impact the ESHA resources. The LCP policies that carried this out were the strengthening of the policies regarding protection of Category "A" and "B" ESHAs by limiting allowable development, fuel modification and development edge policies, the comprehensive Master Drainage and Runoff Management Plan that would be required to be approved before the first coastal development permit draining into Buck Gully, Los Trancos or Muddy Canyon could be approved, that the 2,666 acre open space area be designed as wilderness park land use as opposed to a more intensive recreational use so that the natural resources of the area are preserved. The Commission found that the above method of habitat protection was more protective of the environmentally sensitive resources of the entire LCP area than would be afforded by the protection of individual

ESHA designated streams and associated riparian vegetation if they were surrounded by residential and commercial development.

LCP Second Amendment

In October 1996, the Commission approved the second amendment to the LCP which included a change in the name of the LCP segment to Newport Coast. The second amendment also proposed additional changes affecting environmentally sensitive habitat areas. According to the County, the main purpose of the second LCP amendment was to modify the LCP to include agreements that had been made between the County of Orange, the Irvine Company as landowner, the Department of Fish and Game and the U.S. Fish and Wildlife Service through the Central and Coastal Subregional NCCP (Natural Communities Conservation Plan) HCP (Habitat Conservation Plan). As a result of the NCCP and other considerations, the LCP amendment proposed changes to further reduce development impacts on environmentally sensitive habitat areas by providing a physical connection of the open space being preserved under the certified LUP in Buck Gully and Los Trancos Canyons with the open space land being preserved in Muddy Canyon, Crystal Cove State Park and the wilderness dedication areas.

To accomplish the habitat improvements, Sand Canyon Avenue was deleted from the LCP. Under the previously approved LCP, Sand Canyon Avenue would have been built along the ridgeline separating Los Trancos Canyon and Muddy Canyon and would have resulted in significant landform alteration and the loss of 150 acres of natural open space (including coastal sage scrub) and interfered with a prime wildlife crossing corridor in the upper area of the coastal zone. (Exhibits 11 and 12). The residential development that flanked the Sand Canyon Avenue on both sides was also eliminated. Residential Planning Areas PA 4A and 4B were pulled back to concentrate development adjacent to the residential development proposed along the landward side of PCH. PA 5 and 6 were also pulled back toward San Joaquin Hills Road and reconfigured in the upper portion of the LCP area thereby leaving a natural open space corridor connection between Pas 4A and 4B and Pas 5 and 6 connecting Los Trancos and Muddy Canyon (Exhibit 11). PA 6 was decreased in size by 115 acres and the land area was changed from "residential" to "conservation" land use to accommodate the wildlife connection corridor. This reconfiguration of PA 5 and 6 also resulted in Muddy Creek being relocated to PA 5 instead of PA 6 (Exhibit 11 and 12).

The Commission approved an increase in the residential density of PA 4A and 4B from low to medium density in order to facilitate the concentration of residential development adjacent to and along PCH. However, the total number of residential units was not increased from 2,600 units. The Second LCP Amendment findings again reference the Commission's certification of the LCP based on concentrating development adjacent to existing roads and the conservation of large expanses of continuous open space areas in exchange for allowing impacts to individual habitat areas in designated development areas.

E. LCP CONSISTENCY

1. Environmentally Sensitive Habitat Areas (ESHA)

a. Definition and Designation of ESHA

The LCP designates the coastal waters, streams, wetlands and estuaries as environmentally sensitive habitat areas (ESHA). The definition of ESHA is found in Section I-3 Resource Conservation and Management Policies and reads as follows: *"For purposes of Section 30107.5 of the Coastal Act, natural drainage courses designated . . . on the USGS 7-minute series map, Laguna Beach Quadrangle, . . .(hereafter referred to as "USGS Drainage Courses), coastal waters, wetlands, and estuaries are classified as "Environmentally Sensitive Habitat Areas" (ESHAs)."* The LCP recognizes that the habitat value of the numerous streams, and along the length of individual streams, is not equal. The coastal waters also have a different habitat value. For this reason, four categories of ESHA were created to denote the differing habitat values. This classification was based on a biological inventory done at the time of the original Land Use Plan certification more than 18 years ago. The applicant has submitted a current biological assessment of the ESHA areas that are proposed to be filled. These areas still meet the LCP ESHA criteria and basically have not changed in habitat value (Exhibits 18 and 19). The streams are designated either Category "A", "B", or "D" and the coastal waters are Category "C" ESHA. The ESHAs are depicted on Exhibit H of the LCP (Exhibit 11). Although ESHA is defined to include wetlands, no wetlands were indicated on the ESHA map, Exhibit H. However, the Commission notes that riparian vegetation associated with streams is considered wetlands under the wetlands definition of the Coastal Act.

The LUP states that Category "A" USGS Drainage Courses contain the most significant habitat areas and are subject to the most protection and are thus located entirely within Planning Areas that have Recreation or Conservation land use designations. Although Category "B" ESHAs support less riparian vegetation than Category "A streams and contain water only when it rains, the LCP also seeks to preserve these USGS Drainage Courses. Category "D" ESHAs are deeply eroded and are of little or no riparian habitat value. These drainages are characteristically incised as a result of erosion, resulting in rapid runoff and steep narrow side slopes generally incapable of supporting vegetation. For this reason, the portions of streams that have a Category "D" ESHA designation are generally located within residential or other planning areas allowing them to be significantly modified or eliminated altogether.

The proposed project also includes development in areas containing other unique land resources. The project area also contains remnants of a once abundant native Southern California Needlegrass grassland habitat, Purple Needlegrass (Nassella pulchra). Purple Needlegrass is not designated ESHA in the LCP nor would it meet ESHA standards of

the Coastal Act due to the fact that the patches of Needlegrass are very small and are surrounded by non-native grasses and forbs, instead of other native grasses. It is located in patches along the existing unpaved fire access road that connects the upper and lower Planning Areas (Exhibit 2). The applicant is however proposing to avoid Needlegrass impacts to the extent possible and to mitigate any unavoidable impacts.

b. ESHA Policies of the LCP

As stated above, all wetlands, estuaries, coastal waters and all USGS (United States Geological Service) "Blueline" streams are designated ESHA in the LCP. The LCP states that the coastal waters are protected by the Runoff Policies of the LCP. There are no LCP policies specifically pertaining to wetlands or estuaries and no wetland or estuaries were identified on the LCP ESHA Map, Exhibit H (Exhibit 11).

However, the LCP further classifies the USGS Blueline streams based on their habitat value into Category "A", "B" or "D" with Category "A" streams being characterized as having fairly significant riparian vegetation and Category "D" streams having the least habitat value. The LCP also affords differing levels of protection for these ESHAs based on their classification. ESHA Policy D.1 pertains to Category "A" and "B" ESHAs and reads as follows:

LCP ESHA Policy D. 1:

> **D. CATEGORY "A" & "B" ENVIRONMENTALLY SENSITIVE HABITAT AREA POLICIES**
>
> **The following policies apply to Category A and B ESHAs only, as delineated on Exhibit H.**
>
> 1. Except for the ESHA B located in Planning Area 4A, the natural drainage courses and natural springs will be preserved in their existing state. All development permitted in Category A and B ESHAs shall be set back a minimum of 50 feet from the edge of the riparian habitat except as provided for in the following subsections. If compliance with the setback standards precludes proposed development which is found to be sited in the least environmentally damaging and feasible location, then the setback distance may be reduced accordingly.
>
> a. Where existing access roads and trails cross streams, where emergency roads are required by State or County fire officials, and/or where access roads are required to serve residential units and

recreational facilities I Muddy Canyon, the drainage course may be modified to allow the construction and maintenance of existing or new road or trail crossings. Such modification shall be the least physical alteration required to maintain an existing road or to construct a new road or trail, and shall be undertaken, to the extent feasible, in areas involving the least adverse impact stream and riparian habitat value.

b. Where drainage and erosion control and related facilities are needed for new development and/or to protect the drainage course, the drainage course may be modified to allow construction of such facilities. Modification shall be limited to the least physical alteration required to construct and maintain such facilities, and shall be undertaken, to the extent feasible, in areas involving the least adverse impact to the drainage course. Where feasible, drainage and erosion control and related facilities will be located outside the drainage course.

c. Where the construction requires filling or the modification of drainage courses substantially as shown in Exhibit L, drainage courses may be modified.

d. Where the construction of local collectors, requires filling or other modifications of drainage courses in PA 6, PA 12C, and/or the upper portion of PA 12A and where the alignment is shown to be the least environmentally damaging feasible alternative, drainage courses may e modified.

e. Where access roads and trails exist or where new emergency roads are required by State or County fire officials, vegetation may be removed in the maintenance or construction of such roads and trails. Any required vegetation removal will be minimized.

f. To the extent necessary, existing riparian vegetation may be thinned or selectively removed

when required for habitat enhancement and/or fire control. Existing vegetation which is not classified as riparian may also be removed.

g. Where drainage and erosion control and related facilities are needed to implement the Master Drainage and Runoff Management Plan and related programs, vegetation may be removed in the construction and maintenance of such facilities. Vegetation removal will be limited to the least required to construct and maintain such facilities and shall be undertaken, the extent feasible, in areas involving the least adverse impact to riparian vegetation.

h. Upon the recordation of an Offer of Dedication for Planning Area 12E, the ESHA B located in Planning Area 4A may be altered as required for development authorized by this LCP.

The LCP allows modification or elimination of all of the Category "D" ESHA drainage courses within the project area. All of the Planning Areas proposed for residential development, (PA) 4A, 4B, 5 and 6 contain some portion of a Category "D" ESHA (Exhibit 11). The applicable LCP Policy is F. 2. which reads:

F. <u>CATEGORY "D" ENVIRONMENTALLY SENSITIVE HABITAT AREA POLICIES</u>

2. PA 1A, PA 1B, PA 1C, PA 2A, PA 2B, PA 2C, PA 3A, PA 3B, PA 4A, PA4B, PA6, PA8, PA 9, PA 10A, PA 10B, PA 11A, PA 12A, PA 12B, PA 12C, PA 12D, PA 12E, PA 12F, PA 12G, PA 12H, PA 12I, PA 12J, PA 13A, PA 13B, PA 13C, PA 13D, PA 13E, PA 13F, PA 14, PA 16A, PA 16B, PA 20A, PA 20 B, and PA 20C: Vegetation and drainage courses will be modified or eliminated by development. The Open Space Dedication Programs and Riparian Habitat Creation Program will mitigate any habitat values lost as a result of such drainage course modification or elimination. (Addendum, p.21, #9)

E. CATEGORY "C" ENVIRONMENTALLY SENSITIVE HABITAT AREA POLICIES

The protection of water quality in marine resource areas is subject to the authority of the State Water Resources Control Board". Protection of water quality is provided by the LCP Runoff Policies and will be reviewed by the Regional Water Quality Control Board in conjunction with subsequent coastal development permits and related environmental impact reports (EIR's).

A water quality monitoring program shall be submitted to the Regional Water Quality Control Board prior to initial implementing approvals for the golf course, for the purpose of monitoring runoff entering the ocean as well as the riparian corridors. Copies of the results o f the monitoring program shall be forwarded to the Regional Water Quality Control Board and the County of Orange on a regular basis for their review to determine whether corrective action is required pursuant to the authority of said agencies.

Use and application of chemicals on the golf course and other landscape areas shall be limited to those approved by State, County, and Federal agencies. The landowner shall be responsible for notifying tenants and/or prospective initial purchasers of this requirement.

c. USGS Blueline Streams

A total of approximately 37,000 linear feet or slightly more than seven miles of streams and other minor drainages are proposed to be filled under the current project proposal. Of this figure, 9,400 linear feet or roughly 1.7 miles are USGS Blueline streams and the remaining 27,200 linear feet or roughly 5 miles are other minor drainages. All of the Blueline streams are designated Environmentally Sensitive Habitat Areas (ESHAs) in the LCP. However, the minor drainages are not considered streams by the Commission's regulations or the certified LCP. These minor drainages, are classified as "jurisdictional non-wetland waters of the U.S." by the Army Corps of Engineers and are discussed below.

The proposed project involves impacts to 9,400 linear feet or 1.7 miles of USGS Blueline streams. Some of the streams contain riparian wetlands. All of the "blueline streams" are designated ESHA in the LCP. However, the proposed fill of ESHA designated blueline streams is consistent with the LCP. The Commission also incorporates its findings justifying impacts to environmentally sensitive habitat areas based on Section 30007.5 of the Coastal Act which are contained in the Commission's actions on the County of Orange LCP at this point as if set forth in full. (See also discussion summarizing such findings in earlier section of this report entitled "Previous LCP Balancing.). Further, the LCP requires no mitigation for the loss of the ESHA, with one

exception. The fill of the Category "B" ESHA in PA 4A can not occur until the applicant records an offer to dedicate the 289.6 acre open space area, PA 12E.

Most of the "blueline streams" that will be filled as a result of the proposed residential development are Category "D" ESHA, which are characterized as steep drainages with little or no riparian vegetation. The Commission notes that in the certification of the LCP certain individual streams were allowed to be filled due to their less significant resource value in an effort to concentrate development adjacent to existing development and existing and/or planned roadways in areas more suited to development in exchange for the preservation of large tracts of more biologically significant natural areas for habitat, scenic and cultural resource protection, public access and recreational opportunities. The open space preservation areas contain mainly Category "A" and "B" streams.

Although the LCP allows the significant modification or elimination of the Category "D" ESHAs within development planning areas, ESHA resources within the development planning areas are still recognized and protected. Most of the Category "A", "B" and "C" ESHAs are protected and development of these resources are either prohibited or limited. In most Category "A" and "B" ESHAs only development that can not be located outside of the ESHAs are allowed and only if the development is designed and sited to be the least environmentally damaging development alternative.

The Commission found in the Substantial Issue portion of this appeal that because PA 5 is not listed in the LCP ESHA Policy F.2. that indicates where Category "D" drainages can be filled, that the appeal raised Substantial Issue with regards to protection of ESHAs. However, as discussed further below, the Commission finds that the fill of this Category "D" stream was allowed to be eliminated or significantly altered in the originally certified LUP as well as in the first amendment to the LUP. The Commission also incorporates its findings justifying impacts to environmentally sensitive habitat areas based on Section 30007.5 of the Coastal Act which are contained in the Commission's actions on the County of Orange LCP at this point as if set forth in full. (See also discussion summarizing such findings in earlier section of this report entitled "Previous LCP Balancing.). The Commission finds that the fact that PA 5 is not listed in the above policy is a typographical error given its listing in the previous LCP Policy F.2 allowing its elimination.

Exhibit 12 is a map of the ESHA designated streams and the Planning Areas as they were configured in the originally certified LUP and the first LUP amendment. As the map indicates, the portion of Category "D" Muddy Creek that is currently in PA 5 was at that time located in PA 6. ESHA Policy F.2 in the original LUP and the first amendment allowed this same portion of the stream to be filled when the Planning Areas were configured such that it was in PA 6. Under the second LUP amendment, the Planning Area boundaries were reconfigured by the County. As shown in Exhibit 11, the same portion of Muddy Canyon stream that was allowed to be filled when it was in PA6 is now located in PA 5 due to a boundary reconfiguration of the second LCP amendment.

However, when the County revised the Planning Area boundaries in the second LCP amendment, they apparently inadvertently neglected to revise the listing in above Policy F. 2 to include PA 5. There is no basis in the Commission's findings or the County's proposal that the Commission intended to prohibit the fill of this segment of ESHA Category "D" stream once it was relocated to PA 5 through a planning area boundary reconfiguration. Therefore, the Commission finds that the fill of the ESHA Category "D" stream in PA 5 to be consistent with the certified Newport Coast LCP .

d. Jurisdictional Non-Wetland Waters of the U. S.

The project also includes the fill of roughly seven miles of streams and other minor drainages that are not defined as streams or ESHA in the LCP and not considered streams under the Coastal Act. The minor drainages are considered "non-wetland waters of the United States" and are regulated by the Army Corp of Engineers (See Exhibit 15). These drainages, typically two feet or less in width, are not considered streams by the Coastal Act and are therefore not mapped in the LCP or the post-certification maps that are certified by the Commission after the LCP is certified.

The minor drainages are ephemeral or contain water only when it rains. When it rains, the drainages rapidly convey water to Muddy Creek or other tributaries but, at all other times, they are dry due to their short length, steepness (Addendum, p.21,#10)and narrowness. However, because they convey water to streams, which ultimately empty into navigational waters, they are "waters of the U.S."

Although these drainages are not considered streams in the Coastal Act, according to June 4, 1999 letter of U.S. Fish and Wildlife Service (FWS), they possess important functions and values that are commensurate with, if not well in excess of, some of the portions of the drainages that are "blueline streams" (Exhibit 16). Similar opinions were made in the June 4, 1999 letter of the U.S. Environmental Protection Agency (EPA) (Exhibit 14). Both FWS and EPA were objecting to the Army Corps of Engineers (Corps) issuance of a Nationwide Permit NW26 for the proposed project, citing cumulative impacts to 37,000 linear feet of streams and ephemeral drainages. On July 14, 1999, the Corps denied a NW26 permit without prejudice.

However, on August 18, 1999, the Corps determined that the application did qualify for a NW26 permit subject to certain special conditions including mitigation for the loss of these non-wetlands jurisdictional waters (Exhibit 16a). Additionally, on July 14, 2000 the Corps submitted a letter to the Commission commenting on the project as now revised. The letter states that the project changes have further minimized aquatic impacts and that with the proposed changes and habitat mitigation that the project would still qualify for nationwide permit 26(Exhibit 16b).

Finally, on July 19, 2000 EPA submitted a letter stating appreciation for the additional analysis that had been requested by the Commission. However they expressed the

same concerns of their previous letter regarding the fill of six miles of streams and associated wetlands. The letter concludes that they believe that the mitigation is inadequate given the significance of the loss and that potential non-point source pollution impacts may not have been adequately evaluated (Exhibit 14b). The Commission notes that the applicant's proposed wetland/riparian enhancement and creation plan is being proposed primarily to mitigate the impacts of fill of these jurisdictional non-wetland waters of the U.S. in order to obtain a 404 permit or waiver from the Corps. Most of the proposed wetland/riparian areas are also being proposed for water quality enhancement purposes. The wetlands/riparian mitigation and monitoring plan is discussed below.

e. Wetlands

As stated above, although the LCP defines wetlands as environmentally sensitive habitat area (ESHA), no wetlands are designated on the LCP ESHA Map, Exhibit H of the LCP nor are there specific wetland policies in the LCP. The Commission however notes that riparian vegetation associated with streams is considered wetlands under the Coastal Act definition of wetlands. The LCP does not define wetlands.

With the exception of the proposed fill of 0.05 acres of seasonal wetlands in PA 4A, the wetlands fill proposed in conjunction with the proposed project is consistent with the LCP. The other wetland impacts are (1) the fill of 100 sq. ft. or 0.002 acres of wetlands in Los Trancos and Muddy Canyons (50 sq. ft. each) to place low flow interceptor concrete gutters, part of the water quality program, in the bottom of the creeks and (2) wetland shading impacts totaling 40 sq. ft. or 0.0009 acres due to the proposed Muddy Canyon bridge that replaced the previous Muddy Canyon detention basin. These latter impacts are allowed by the certified LCP because they will occur in conjunction with the construction of a new road pursuant to ESHA Policy D.1.a that allows new access roads to serve recreational facilities in Muddy Canyon if it is the least physical alteration required and is located in an area involving the least adverse impact to the stream and its associated riparian habitat. (Addendum, p.21, #11). The Commission also incorporates its findings justifying impacts to environmentally sensitive habitat areas based on Section 30007.5 of the Coastal Act which are contained in the Commission's actions on the County of Orange LCP at this point as if set forth in full. (See also discussion summarizing such findings in earlier section of this report entitled "Previous LCP Balancing.).

1. Fill of Seasonal Wetlands

The project as proposed includes the fill of 0.05 acres of wetlands in Planning Area (PA) 4A. The existing wetlands in PA 4A are seasonal in nature and occur as four small separate wetland areas on a ridge above Upper Wishbone (Exhibit 3). The four isolated wetland depressions (with two adjacent to each other) in three locations were, according to the applicant, created in upland areas during the period of cattle grazing operations.

These linear depressions appear to have been scooped out with a backhoe and probably served to hold standing water into the early portion of the annual dry season, providing drinking water for cattle. They would likely continue to provide a similar function for wildlife and they support low diversity wetland vegetation consisting primarily of exotic annual herbs. The depressions are hydrologically isolated and the wetlands are supported only by rainfall. During the dry season, they are invaded by upland grasses and forbs[3].

These four constructed depressions meet both the Army Corps of Engineers (ACOE) and the Coastal Act definitions of "wetland."[4] Due to the abrupt boundary between the depressions and the surrounding upland, the area of these seasonal wetlands is the same under both the federal and Coastal Act definitions and is a total area of about 0.05 acre. For notification to the ACOE and mitigation calculations, this figure was rounded up to a nominal 0.1 acre of impact.

The wetlands are referred to by the applicant as isolated seasonal agricultural wetlands. The proposed fill of 0.05 acres of seasonal wetlands in PA 4A is for residential development purposes and not agricultural purposes. Nonetheless, the applicant contends that the four (Addendum, p.21, #12) wetlands in PA 4A are exempt from the Commission's appeal jurisdiction under Section 13577(b)(2) of the Commission's regulation. Section 13577(b)(2) provides that wetlands subject to the Commission's appeal jurisdiction do not include:

> "...wetland habitat created by the presence of and associated with agricultural ponds and reservoirs where the pond or reservoir was in fact constructed by a farmer or rancher for agricultural purposes; and there is no evidence [...] showing that wetland habitat predated the existence of the pond or reservoir. Areas with drained hydric soils that are no longer capable of supporting hydrophytes shall not be considered wetlands."

In support of their contention, the applicants have submitted statements by those familiar with the past agricultural operations. Aerial photographs have also been submitted documenting that the wetlands did not predate their agricultural operations. However, the applicant's evidence also documents that the agricultural operations ceased in 1995. Although these areas may have originally been created for agricultural purposes, the proposed development will not continue this or any other agricultural use of the site. Further, despite the cessation of the agricultural operations, the wetlands remain viable. Since the site no longer contains an agricultural use, the remaining wetlands are no

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[3] LSA. 2000. Wetland/riparian mitigation and monitoring plan: Crystal Cove/Newport Coast phases IV-3 & IV-4, Orange County, California. A report submitted to the U.S. Army Corps of Engineers, Ca Department of Fish & Game, and the Ca Coastal Commission dated Mary 16, 2000.

[4] LSA. 1999. Addendum to delineation of wetlands and jurisdictional waters and calculation of impacts to waters - Crystal Cove/Newport Coast phases IV-3 & IV-4

longer associated with or created by an agricultural pond. The Commission finds that the exemption provided in Section 13577(b)(2) does not apply to wetlands that currently exist independent of and disassociated from preexisting agricultural activities. The Commission also finds that the exemption is not (Addendum, p.22,#13) applicable to the proposed fill of wetlands for other than agricultural purposes.

The proposed wetland fill for residential purposes is inconsistent with the certified LCP. The LCP identifies wetlands as an environmentally sensitive habitat area (ESHA) even though no wetlands were designated on the LCP ESHA Map. The LCP contains no policies authorizing the fill of wetlands. It is possible that the LCP omits wetland specific policies because the wetlands at issue did not exist at the time the LCP was certified. Because there are no LCP policies specifically authorizing the fill of the wetlands, the Commission finds that the fill of the existing 0.05 acres of seasonal wetlands in PA 4A for residential purposes is inconsistent with the ESHA protection policies of the certified LCP. This finding is also supported by the appellate court decision in Bolsa Chica Land Trust v. Superior Court (1999) 71 Cal. App.4th 493. The Bolsa Chica decision involved the Coastal Commission's approval of a local coastal program amendment that authorized development within wetlands and environmentally sensitive habitat areas. The Court of Appeal held that the Commission acted improperly in approving residential development in parts of the site that included wetlands. Given the existence of newly discovered wetlands and the omission of LCP policies that authorize permissible fill, the Commission finds that, in light of the Bolsa Chica decision, the County's LCP must be interpreted consistent with Section 30233 of the Coastal Act.

Therefore the Commission can approve the fill of the seasonal wetlands which is inconsistent with the ESHA protection policies of the certified LCP only if it finds that the proposed project is the least environmentally damaging alternative and that the project provides benefits over and above that which is required by the LCP and only if the project is found to be on balance, most protective of the land resources pursuant to Section 30007.5 of the Coastal Act. An analysis of the approvability of the proposed fill pursuant to Section 30007.5 of the Coastal Act is provided in a later Section of this staff report entitled, Use of Balancing in Conflict Resolution.

The applicant is proposing mitigation for the fill of the seasonal wetlands although they continue to argue the Commission's jurisdiction to regulate such wetland fill. As part of the Wetland/Riparian Mitigation and Monitoring Plan, prepared by LSA Associates, Inc., revised May 16, 2000, the applicant proposes 4:1 mitigation of the fill of the seasonal wetlands by creating 0.40 acres of seasonal wetlands in selected sites within the permanently dedicated open space area of PA 12E. PA 12E is required to be offered for dedication to the County of Orange for open space purposes pursuant to the requirements of the LCP land dedication program established at the time of LCP certification. The land dedication policies are found in the Resource Conservation and Management Policies. Policy A.2.c requires the landowner to record an Offer of

Dedication for PA 12E to the County of Orange prior to or concurrent with the recordation of the first final development map, other than a large-lot subdivision in PA 4A, 4B, 5, or 6 (Exhibit 17). The applicant's de novo application includes the offer of dedication of PA 12E to the County of Orange for open space purposes. In fact, offer of dedication has already been made and is scheduled for acceptance by the Board of Supervisor's in August.

The proposed mitigation is on-site and in-kind. It would be accomplished by creating a total of 0.4 acre of similar linear depressional wetlands at three locations about 2500 feet to the northeast of the existing wetlands. Construction will entail grading, installation of a clay liner, and covering with topsoil salvaged from the seasonal agricultural wetlands that will be filled. The constructed wetlands will probably hold water for a longer period after rainfall events than the existing wetlands because the clay liner will be less pervious than the sandy bottom of the agricultural depressions. As a result of the method of construction and their larger area, the constructed wetlands can reasonably be expected to provide wetland functions equal or superior to those made available by the existing wetlands.

The proposed wetland/riparian mitigation plan states that the wetlands can and will be constructed at different times during the development process. If the existing wetlands were filled without the replacement wetland being constructed there would be an additional temporary loss. Under this scenario, full mitigation is not occurring for the habitat impacts. The replacement wetlands can easily be constructed early in the development process. They will be located in a natural open space area that will be dedicated for habitat purposes. Only as conditioned to construct the seasonal wetland mitigation prior to disturbance of the existing wetlands and to ensure that the wetland mitigation produces conditions that will generate hydric soils by meeting a specific performance standard is the proposed project consistent with the ESHA protection policies of the LCP which balanced the protection of certain individual ESHAs to achieve a greater goal of the protection of higher quality wetlands associated with streams and preserved in large open space areas. The special condition recognizes the fact that natural ponding of water in depressions generally occurs after a series of rainfall events over a period of one or two weeks. The volume of water to be added is based on the volume that would result from the wettest two weeks each year. The median volume will be used which means that half the years would experience a wetter two-week period and half would experience a drier peak two-week rainfall event. If the performance standard is met, the ponds will be wet enough to produce conditions that will generate hydric soils. The test is to take place during a period without natural rainfall (Addendum, p2, #1).

2. Wetland Impacts Due to Water Quality Improvements

The proposed project will result in the impact of a total of 0.002 acres of riparian wetlands in Los Trancos and Muddy Creeks in order to construct water quality improvements. The specific water quality improvements resulting in wetland impacts are four foot wide concrete interceptor gutters or swales that are necessary in the bottom of both creeks in order to divert the low flow or summer runoff to proposed buried pump stations for conveyance to the adjacent sanitary sewer lines (Exhibit 20). The low flow diversion structures will be placed in the bottom of the creeks just landward of Pacific Coast Highway where the riparian vegetation is minimal. The applicant's biological consultant recently resurveyed the interceptor swale location and determined that the location in Los Trancos creek is already lined with grouted rip rap and that small patches of cattails grow seasonally in the sediment that accumulates on the lined channel bottom. The location in Muddy Creek is virtually unvegetated, with a rocky bottom. The applicant is however proposing to mitigate the potential loss of riparian vegetation that could occupy the 100 sq. ft. of area that will be displaced due to the construction of the water quality facilities. The mitigation is included in the May 16, 2000 wetlands/riparian mitigation and monitoring plan.

This low flow diversion is a significant water quality enhancement in that the urban runoff, which would be normally discharged onto Crystal Cove State Beach during the peak summer beach use period will not occur. To accomplish the nuisance flow diversion to the Orange County Sanitation District facility the applicant must construct pump and interceptor structures in and adjacent to both Los Trancos and Muddy Creeks. In each creek 100 sq. ft. of potential wetlands area would be impacted in order to accommodate the diversion structures.

Based on a recent field visit by the applicant's biological consultant to determine the exact of habitat that exists in the location of the interceptors, the proposed location of the structures will not displace any wetlands. The biologist reports that in Muddy Creek that the site is now covered with grouted rip rap. The bottom of Los Trancos Creek at the interceptor location is lined with concrete. However, periodically sediment accumulates in the creek bottom and cattails and other vegetation grows on top of the concrete lining. Therefore there is a potential to impact low quality wetlands with the construction of the water quality devices.

The fill of riparian wetlands for water quality facilities, while not an allowable use under the Coastal Act, would be allowed under the certified LCP. The Commission also incorporates its findings justifying impacts to environmentally sensitive habitat areas based on Section 30007.5 of the Coastal Act which are contained in the Commission's actions on the County of Orange LCP at this point as if set forth in full. (See also discussion summarizing such findings in earlier section of this report entitled "Previous LCP Balancing.). The fill occurs in the portions of Los Trancos and Muddy Creeks that are designated Category "B" ESHA on the LCP ESHA Map but are in

actuality lined with concrete, in the case of Los Trancos and filled with grouted rip rap in the case of Muddy Creek. ESHA Policy D.1.b. states that Category "B" ESHAs shall be preserved in their existing state unless specifically allowed to be filled. All other development must be set back a minimum of 50 feet from the riparian vegetation of the stream. However, the policy goes on to allow drainage and erosion control and related facilities to modify a Category "B" ESHA if the facility is sited in the least environmentally damaging and feasible location and the modification is limited to the least physical alteration required to construct and maintain such facilities. The wetland fill is subject to a Department of Fish and Game Streambed Alteration Agreement. DFG has reviewed the proposed wetland fill and the proposed mitigation contained in the May 16, 2000 Wetland/Riparian Mitigation and Monitoring Plan and found it acceptable (Exhibit 21).

The proposed low flow diversion interceptor structure is part of the runoff management system and one of the key elements of the water quality enhancement program. The interceptor pump is located in the bottom of the creeks in order to pick up the maximum amount of summer nuisance flow coming down the creeks . The Department of Parks and Recreation was consulted in the location of the facility in Los Trancos Creek. The location was chosen because it affords an opportunity to also collect the runoff from the Los Trancos public beach parking lot and divert it to the sewer system. Therefore the Commission finds that the interceptor swales are located in the least environmentally damaging location and the location that will allow the maximum water quality benefit.

The LCP does not contain specific wetland mitigation policies. However, the applicant is proposing to mitigate the loss of the wetlands in the proposed wetlands/riparian mitigation and monitoring plan through enhancement of existing riparian wetlands and creating riparian wetlands in portions of Muddy Creek where it does not exist. The Commission therefore finds that the potential fill of 0.002 acres of riparian wetlands for water quality purposes is consistent with the ESHA policies of the LCP.

3. Wetland Impacts Due to Bridge Shading

The proposed project no longer includes the construction of a detention basin and road in Muddy Canyon. The private road was for vehicular access for residents of the future gated community to get to the private recreation facility proposed on the opposite side of Muddy Canyon in PA 12C. Both the detention basin and road have been eliminated in favor of a bridge. The proposed bridge, like the previous detention basin, is located primarily within PA 17, Crystal Cove State Park (Exhibit 22). Specifically, the bridge is located within the easement area retained by the Irvine Company in the sale of the park land to the Department of Parks and Recreation. Although the bridge will have some minor shading impacts on the wetlands within the Muddy Canyon, no wetlands fill will occur as the bridge supports are not located in the creek. The bridge will cause shading impacts to 40.5 sq. ft. or 0.0009 acres of riparian wetlands. This shading impacts is minor and is environmentally superior to the previous Muddy Canyon detention basin that would have resulted in the fill of 0.12acres of wetlands. Therefore this alternative is

the least environmentally damaging alternative as required by ESHA Policy D.1.a. that allows modification of the Category "B" creek section due to new access roads provided that the modification is the least physical alteration necessary and that it occurs in a manner involving the least adverse impact to the stream and riparian habitat values.

Based on written information submitted by the applicant the proposed bridge will be approximately 33.5 feet wide, approximately 200 feet long and 40 feet above the bottom of the Creek channel. According to the applicant's biologist, the width of the wetlands area under the proposed bridge is approx. 12 feet. The bridge supports will be well outside of the wetland area and the wetlands will not be disturbed during the construction of the bridge. The applicant has not however submitted adequate bridge plans. The bridge is shown on grading plans but which do not include a site plan showing the location of the proposed bridge in reference to the existing wetlands and creek. The plans also do not include scaled plan view drawings, cross-sections or elevation plans. Therefore the Commission is imposing special condition 12 requiring the submittal of adequate final bridge plans. Because the bridge is located on Department of Parks and Recreation (DPR) property, the applicant is required to obtain DPR review and approval prior to submittal to the Executive Director. DPR has reviewed preliminary bridge plans and have indicated to Commission staff that the bridge is environmentally superior to the previous detention basin and will have minimal visual impacts on users of the Park.

The wetland vegetation is expected to decrease in density due to shading by approximately 9%. However, it is likely that wetland vegetation more tolerant to shade will offset the small decrease in density of the existing vegetation. Therefore the Commission agrees that the shading impacts of the Muddy Creek wetlands will be insignificant. However, the applicant is proposing to mitigate this impact in the proposed wetland/riparian mitigation and monitoring plan.

Therefore, as proposed to mitigate the potential shading impacts on 0.0009 acres of wetlands caused by the proposed Muddy Canyon bridge by the creation of 0.002 acres of new riparian expansion within Muddy creek pursuant to the May 16, 2000 Wetlands/Riparian Mitigation and Monitoring Plan prepared by LSA Associates, is the proposed project consistent with the applicable ESHA protection policies of the certified LCP.

4. Purple Needlegrass Impacts

The existing 3,800 ft. long fire access dirt road which connects PA 4A to PA 5 is required by the Orange County Fire Authority (OCFA) to be widened from the current 12 ft. to 26 ft. wide. Adjacent to the existing fire access road is several patches of Purple Needlegrass, a component of once widespread environmentally sensitive native Needlegrass grassland. The Purple Needlegrass remnant however, is no longer

considered ESHA due to it small size and isolation from other native grassland vegetation. The Commission however notes that Purple Needlegrass is listed in the Department of Fish and Game Natural Diversity Data Base as a sensitive natural community.

The applicant has petitioned OCFA to grant a variance to allow the road to be narrower where it is adjacent to Needlegrass. The applicant submitted plans for the road indicating that the road will be a minimum of 14 ft. wide. In order to avoid the Needlegrass that is adjacent to the road it must be shown at its maximum width and alignment. Although the road is proposed to be narrowed to a maximum of 14 feet where it is adjacent to Needlegrass to avoid impacting it, 0.4 acres of Needlegrass will be loss due to proposed residential development in PA 4A and PA 5 (Exhibit 2). Therefore special condition 10 requires the applicant to submit final revised plans indicating the maximum width and alignment of the road to assure that the Needlegrass that can be avoided is saved.

The applicant is proposing to mitigate the loss of Purple Needlegrass due to residential development through the creation of a 1.6 acre Southern Coastal Needlegrass grassland (4:1 ratio). The created grassland will be adjacent to an existing healthier stand of Needlegrass located away from the road (Exhibit 2). The Southern Coastal Needlegrass Grassland Restoration Plan, by LSA Associates, Inc., date December 14, 1999 has been reviewed by the Commission staff biologist and found to be adequate in terms of the mitigation proposal and monitoring plan. The Commission notes that the applicant has successfully created another Needlegrass grassland mitigation site near Signal Peak.

2. STREAM SEDIMENT SUPPLY AND BEACH NOURISHMENT IMPACTS

a. Project Setting

The proposed project is within an area identified as the Crystal Cove Littoral Sub-Cell. The east jetty of Newport Harbor and Abalone Point, near Laguna Beach bound the longshore extent of this sub-cell. The inland boundary follows the upland watershed divide and both Los Trancos Canyon and Muddy Canyon are sediment sources for this littoral sub-cell.

There have been many modifications to this sub-cell both to the supplies of sediment to the sub-cell and to the transport through the sub-cell. The biggest impact was the construction of the Newport Harbor jetty system that began in 1918. By 1936, the jetties were built out to water depths of about –50' Mean Sea Level. These jetties block most sediment from being transported from the Balboa Peninsula to any of the beaches south of the jetties (Jenkins and Wasyl, 2000, pg. 52).

The Crystal Cove Sub-Cell now consists of a number of pocket beaches that are stabilized by shore normal rock outcrops that have formed a natural groin system. The beaches that form between these outcrops are thin veneers of sand over wave cut

platforms. Since completion of the Newport Harbor jetties, these pocket beaches have become relatively stable, with the sand losses balanced by the influx of new material from the terraces, streams and dredge disposal. (Noble, 2000, pg. 2)

b. Consistency of proposed project with LCP

The Resource Protection Program Findings of the LCP states, in part:

> The major objective of the Erosion and Urban Runoff Management for The Newport Coast is to assure that erosion and runoff rates do not significantly exceed natural rates, while at the same time assuring sand replenishment provided within the coastal watershed is maintained. (The Newport Coast littoral "cell" is limited and partially dependent on the local watershed for sand replenishment.)

The LCP contains erosion control, sediment and runoff policies to carry out the above objective of preserving the beach sand replenishment process while maintaining the stability of the natural streams. LCP Sediment Policy J.4 states:

J. **SEDIMENT POLICIES (in part)**

4. Sediment movement in the natural channels shall not be significantly changed in order to maintain stable channel sections and to maintain the present level of beach sand replenishment.

Further, Runoff Policy K.1 states:

K. **RUNOFF POLICIES (in part)**

1. Peak flood discharge rates of storm water flows in the major streams shall not exceed the peak rate of storm water runoff from the area in its natural or undeveloped state, unless it can be demonstrated that an increase in the discharge of no more than 10% of the natural peak rate will not significantly affect the natural erosion/beach replenishment process.

c. Peak flood discharge rates

The proposed project will substantially alter the drainage, erosion and sediment deposition of the project site. 86 acres that are now in the Los Trancos watershed will be graded to drain to Muddy Canyon. Development in both watersheds, will include 224.2 acres of impervious surfaces (130.8 for Los Trancos and 93.4 acres for Muddy Canyon); 180.4 acres of common irrigated area (116 acres for Los Trancos and 64.4 acres for Muddy Canyon); 92 acres of residential irrigated areas (56.2 acres for Los Trancos and 35.8 acres for Muddy Canyon); 710.9 acres of fuel modification and natural canyon areas

in Los Trancos; 64.6 acres of fuel modification area for Muddy Canyon and 625.8 acres of natural canyon area in Muddy Canyon.

Both watersheds will have a large increase in water inputs for the summer months, due to irrigation. Total water inputs to Los Trancos will decrease by over 36 acre-feet, primarily due to the reduction in the watershed area (Exhibits 25-32). Muddy Canyon will have an increase in total water inputs of 163 acre-feet, due to the increase in watershed area and to irrigation (Exhibits 25a-32a). The increase in impervious surface will cause an increase in volume of runoff in both watersheds --10 acre-feet for Los Trancos and 110 acre-feet for Muddy Canyon. Six detention basins will be used to control drainage in the watersheds and reduce post-project peak flows. (Exponent (April 20, 2000) Projected Water Balance for Los Trancos Canyon, Crystal Cove Area, California; and Exponent (April 20, 2000) Projected Water Balance for Muddy Canyon, Crystal Cove Area, California.)

Flood discharge of storm water flows in Muddy Canyon and the 25-year and 100-year peak discharge of storm water flows in Los Trancos Creek shall not exceed the peak rates of storm water runoff from the area in its natural or undeveloped state. The 5-year and 10-year peak flood discharge of storm water flows from Los Trancos Creek will exceed the peak rates of storm water runoff from the area in its natural or undeveloped state; but the increase in discharge is less that 10% of the natural peak rate. With implementation of the beach sand replenishment program outlined in Special Condition 6 and discussed further below, this increase in peak flood discharge of storm water flows will not significantly affect the natural erosion/beach sand For Los Trancos, peak 100-year flows are modeled to be 1,637 cubic feet per second (cfs) for pre-project conditions and 1,563 cfs for post project conditions. For Muddy Canyon, peak 100-year flows are modeled to be 960 cfs for pre-project conditions and 952 cfs for post project conditions. (John Tettemer and Associates (June 2000). Proposed Runoff Management Plan Watershed Map, Figure 2.) Post-project peak flow durations will be far longer than pre-project peak flow durations to accommodate the increased runoff volume. At some locations in both watersheds, the peak flows for smaller events (5-year, 10-year and 25-year events) are projected to be larger for post-project conditions than for pre-project conditions (Exhibit 24) (Addendum, p.22,#15). These increases will occur within the limits defined in Policy K1 of the certified LCP; the post-project peak discharge rates from Los Trancos for both the 5-year and 10-year events will exceed the pre-project discharge rates by 1.4% and 0.7% respectively, but the post-project peak rates will not exceed the pre-project discharge rates by more than 10% consistent with Policy K1.

The proposed project will be designed so that all peak flood discharge of storm water flows in Muddy Canyon and the 25-year and 100-year peak discharge of storm water flows in Los Trancos Creek shall not exceed the peak rates of storm water runoff from the area in its natural or undeveloped state. The 5-year and 10-year peak flood discharge of storm water flows from Los Trancos Creek will exceed the peak rates of

storm water runoff from the area in its natural or undeveloped state; but the increase in discharge is less that 10% of the natural peak rate. With implementation of the beach sand replenishment program outlined in Special Condition 6 and discussed further below, this increase in peak flood discharge of storm water flows will not significantly affect the natural erosion/beach sand replenishment process. Therefore, the Commission finds the project as conditioned consistent with Policy K1 of the certified LCP.

d. Channel stability

LCP Policy D1 states, in part, that:

> ...the natural drainage courses and natural springs will be preserved in their existing state...

LCP Policy J4 elaborates on two aspects of this requirement:

> Sediment movement in natural channels shall not be significantly changed in order to maintain stable channel sections and to maintain the present level of beach sand replenishment.

The matter of beach sand replenishment is addressed in the following section. In this section, the issue of channel stability within Muddy and Los Trancos Canyons is discussed. Consistency with the LCP also requires that there will be no significant scouring or erosion of the channel bed. Bank undercutting and collapse is not a significant erosion mechanism in Muddy and Los Trancos canyons in that, for the most part, no banks are developed in these steep-sided, canyon-defined streams.

The amount of both coarse- and fine-grained sediments carried by Muddy and Los Trancos canyons is expected to be reduced as a result of development (Chang, 2000). Further, the duration of peak flow (storm) events will be far longer than pre-project peak flow durations to accommodate the increased runoff volume (Tettemer, 2000). These conditions raise the concern, expressed by some of the appellants and by EPA, that streams will become more erosive, leading to instability of the channel sections.

The greatest reduction in sediment volume as a result of development is expected in the finest size fractions—silt and clay (Chang, 2000). Most of this material is carried in the wash load of streams; that is, it is carried in suspension without interacting with the bed of the stream. The amount of wash load is driven by sediment supply—it will be reduced as a result of development primarily because of the increase in impervious surfaces and in changes in the nature of vegetation cover. The loss of wash load as a result of development will not, as the appellants

claim, result in increased erosion, incision, or destabilization of the banks. These processes depend on the shear stress of the water upon the stream's bed and banks and not on the amount of sediment in the wash load. Accordingly, increased erosion is not expected as a result of the reduction of fine sediments that will occur as a result of development.

There also will be, however, modest reductions in the sediment yield in the coarser size fractions—sand and gravel (Chang, 2000). Most of this material is carried in the bed load of a stream; that is, it is rolled along or bounced along the bed of the stream. A stream has a certain capacity to carry materials as bed load. Thus, the amount of bed load is driven not only by sediment supply, but also by the shear stress of the water (a function of velocity) and by the percentage of its capacity that is occupied. Thus, if a stream is carrying its maximum bed load capacity for a given flow velocity, then a reduction in sediment supply may be compensated for by increased erosion of the stream's bed. There are two reasons why, in the case of Los Trancos and Muddy canyons, such increased erosion is not likely to occur to any significant amount. First, it appears that the coarse sediment supply is currently not high enough to ensure that the streams presently are carrying their bed load capacity. Thus, the bed load may, like the wash load, be limited by the supply of sediment in pre-development conditions. In fact, the relatively low sand and gravel yields estimated for Muddy Canyon (Chang, 2000) suggests that the stream is not near its bed load capacity in its current state. Second, there is evidence that much of the bed of Muddy Canyon is armored (Tettemer, 2000; David Pryor, personal communication)—that is, the bed consists either of bedrock or of boulders so large that they cannot be moved by all but the largest floods. Armored stream beds are not subject to scour. Los Trancos canyon appears to be less well-armored, and may be subject to somewhat more scouring. The development will have far less impact on Los Trancos canyon than on Muddy Canyon, however, and significant increases in scour are not anticipated.

Finally, although post-development peak discharge rates will, in most cases, be kept at pre-development levels or even reduced (Tettemer, 2000) the duration of flood events will be greatly increased as a result of the detention of some of the runoff and the greater volume of runoff resulting from the development. Longer flood events could lead to greater scouring, even if peak discharges are not appreciably increased. Because of the armoring of Muddy Canyon mentioned above, however, increased scouring is not likely to be significant. Further, the berm associated with the former agricultural reservoir in the upper reaches of Muddy Canyon will serve as an additional detention basin. LSA (2000) predicts that water reaching this pond, which is dry for most of the year, will be lost through evapotranspiration and infiltration. At the east end of the berm at the lower end of this reservoir, several feet above the level of the pond, there is a deep ravine that discharges into the stream below the berm. Following extreme rainfall events, the pond will act as a detention basin with excess water flowing out through this ravine. In smaller flood

events it is unlikely that any additional runoff will enter Muddy Canyon between this structure and the tributary draining watershed M2r (Tettemer, 2000).

Thus, it is unlikely that the proposed development will result in a significant increase in scour of Muddy or Los Trancos Canyons, and the stability of the channel cross section should be maintained consistent with LCP policies J4 and D1. Inasmuch as this has not been the case in Los Trancos canyon as a result of existing development in its watershed, the conditions in Muddy Canyon differ such that such a comparison is not valid. The proposed development will have little additional effect on Los Trancos canyon because the watershed of Los Trancos canyon is little impacted by the proposed development—most of the runoff would be diverted into Muddy Canyon where it would be discharged into the stream immediately upstream from the Pacific Coast Highway.

e. Changes to natural erosion/beach sand replenishment process

Certified LCP Sediment Policy J4 requires that sediment movement in the natural channels shall not be significantly changed in order to "maintain the present level of beach sand replenishment." This policy is a recognition of the fact that LCP approved development will cause some changes to the conditions of the natural channels or Blueline streams. Accordingly, the proposed project must be reviewed to ensure that it "maintains the present level of beach sand replenishment."

The changes in peak discharge events will change the sediment transport characteristics of both Los Trancos Creek and Muddy Canyon. In predicting the total sediment yield from watersheds, fine-grained material (wash load) and coarser material (bedload) are treated differently. Yield of the fine-grained material (such as silts and clays) correlates well with supply and can be estimated from the characteristics of the drainage area. Yield of the coarser material (sand, gravel, and cobble) is limited by either the availability of sediment or the flows that have enough energy to carry sediment. Once on the beach, the fine material tends to remain in suspension once it reaches the ocean and will be quickly carried from the beach. The coarser material will remain on the beach and contribute to the littoral sediment supply. Due to the different transport mechanisms and fates of these materials, they are regularly modeled differently (Exhibit 23b).

The proposed changes to the watersheds will reduce the available supplies of fine-grained sediment. The computed annual average yield of fine material are 694 tons for pre-project conditions and 164 tons for post-project conditions (Chang, 2000, pg. 5). No error analysis or sensitivity analysis was provided with this study; however, an overall summary report provided by the applicant noted that "the accuracy of individual estimates are on the order of $\pm$ 50% (Inman, Jenkins and Masters, 2000A, pg. 23.) This reduction in fine sediment yield of 530 tons per year will reduce the volume of fines

in the nearshore area. Since fine material can be a detriment to water quality and visibility, a reduction in fines can benefit overall nearshore water quality.

For coarse sediment yields, both Los Trancos and Muddy Canyon, in general, have more sediment available than there is stream flow available to erode or carry the material and are called capacity limited (as opposed to supply limited). Therefore changes to flow characteristics will change the sediment transport and the amount of inland material that will reach the beach. A 100-year flood series was created and used to predict pre-project and post-project average annual sediment transport rates. The flood series was made up of various peak storm events that can be expected to occur during a 100-year period. The proposed development will result in a 23.8 ton/yr. reduction in sand-sized coarse sediment from the two watersheds combined (Chang, 2000, pg. 7), a 12.1 ton/yr. reduction of fine sand and a 172.1 ton/yr. reduction in coarse sand, gravel, cobble and boulders. The overall reduction in all coarse sediment will be 208 tons/yr. (Chang, 2000, pg. 6). Again, no error analysis or sensitivity analysis was provided with this study; however, the applicant provided an overall summary report that noted that "the accuracy of individual estimates are on the order of ± 50% (Inman, Jenkins and Masters, 2000A, pg. 23.)

The applicant's consultants examined the effects of the 23.8 tons/yr. (18.3 cubic yards per year or 14 cubic meters per year) reduction in sand-sized coarse sediment. This volume is well within the annual fluctuations of sediment within the Crystal Cove Sub-Cell. Based on conservative estimates of volumes of beach sand within the entire Crystal Cove Sub-Cell, this 23.8 ton/yr. decrease would represent about 0.005% of the existing beach sand volume (Jenkins and Wasyl, 2000, pg. 2)

Both peak flows and sediment yields vary greatly from wet period events and dry period events and the applicant's' consultants also provided estimates of sediment yield reductions for wet and dry period conditions. Sediment yield during wet years is about 2.8 times higher for wet periods versus dry periods (Jenkins and Wasyl, 2000, pg. 51). The project will result in a reduction in sand-sized coarse sediment of 10.5 cubic yards per year (8 cubic meters per year) for dry periods and 32.9 cubic yards per year (25.2 cubic meters per year) for wet periods (Jenkins and Wasyl, 2000 pg. 52.) "After 20 years of cumulative impact during a wet climate period, the net impact of the project would be a 24 cm (10 inch) net retreat of the mean high tide line. This is insignificant relative to the natural cycles of beach retreat and recovery which cause net excursions in the mean high tide line of as much as 8 meters during the wet climate period." (Jenkins and Wasyl, 2000, pg. 2).

The projected changes in sand-sized beach material are small, but quantifiable reductions in beach sand. These reductions may result in impacts that are small in comparison to current changes in the littoral system; however they constitute new changes that can be directly attributable to the proposed project. The reduction in fine

sediment can be viewed as a positive water quality impact from the proposed project, but this does not offset the anticipated impacts to sand supply.

The proposed project will also result in an annual reduction in coarse beach material, other than the material that compares in size with the average composition of sand now found on the beach. The proposed project will reduce the total coarse sediment yield by 208 tons per year, or 160 cubic yards per year (122.3 cubic meters per year). These coarser fractions are in the streambeds and "were later found in gravel and cobble beds underlying the present beach sand deposits in the neighborhood of the bluff toe" (Jenkins and Wasyl, 2000, pg. 19) (Exhibits 23 and 23a). These coarser sediments remain close to the toe of the bluff, and affect the slope of the backbeach. These coarser sediments were not included in the littoral sediment budget or the analysis of how the proposed project will alter the sand replenishment from the watersheds. Nevertheless, the reduction of these coarser sediments to the coast will alter the overall beach profile and beach condition. In particular, this reduction of coarse sediment volume will deflate the dry beach profile.

The project-related changes will result in an estimated reduction in total coarse sediment of 208 tons per year, or 160 cubic yards per year (122.3 cubic meters per year) ± 50%. (Inman, Jenkins and Masters, 2000A, pg. 23) The estimated error for this volume of material, ± 50% would provide a range from 80 cubic yards per year to 240 cubic yards per year. The provided estimate of 160 cubic yards per year is the median value within this range. This 160 cubic yards per year is a small amount of material when compared to the overall volumes of sand transport in the sub-cell. Total yield of coarse grained sediment in the sub-cell averages 2,900 cubic yards per year (2,220 cubic meters per year) and net littoral transport averages 1,300 to 1,960 cubic yards per year (1,000 to 1,500 cubic meters per year) southward. (Jenkins and Wasyl, 2000, pgs. 51 and 68) However, this sub-cell has been experiencing a small deficit in total sediment such that over a 20 year period, the average volume of material into the cell averages 1,230 cubic yards per year (941 cubic meters per year) less that the average volume of material leaving the cell. As proposed, the project would add to and increase this deficit.

The project related impacts to sediment supply are all tied to the hydrologic modifications, runoff detention and efforts to maintain the range of peak flood discharge of storm water flows at or below the peak rates of storm water runoff from the area in its natural or undeveloped state. Small reductions in overall peak flows and other hydrologic modifications will reduce the sediment carrying capacity of the watersheds and reduce sediment transport to the beach areas. On-site retention could substantially increase the amount of coarse material held on site and further reduce the sediment supply to the coast.

As stated above, LCP Policy J4 requires proposed development to "maintain the present level of beach sand replenishment." The impacts to sediment yield can be

mitigated by annual replenishment of a comparable volume of beach-quality material. Ideally, the replenishment would add all the coarse-grained material in proportion to the pre-project supply rates and in a way to mimic pre-project distribution of the coarser material. However, for the various reasons provided below, the full range of coarse-grained material cannot be provided as replenishment material. A comparable volume of sand-sized material can approximate, but not replicate the pre-project conditions.

Gravel and cobble are readily identified components of many beaches. However, little is known about gravel and cobble transport mechanisms or whether beach nourishment projects could reestablish the same gravel and cobble distribution that exists currently. The normal method of beach replenishment is to deposit new material over the existing beach and grade the overall slope to match pre-established contours. This technique would not place the coarse gravel and cobble at the base of the bluff. Even if a trench were excavated at the toe of the bluff, it would be difficult to mimic the natural slope or distribution of these coarser materials. If the gravel and cobble were placed in the beach uniformly with the sand-sized material, its initial exposure on the surface would detract from the overall quality of the beach, and there is no available information on how this coarser material will function. Eventually it could settle below the beach surface and could be transported to the toe of the bluff, but there are no studies to assure this or to estimate how long it would take for the redistribution to take place. Due to these uncertainties, a complete replenishment of all the coarse-grained material with coarse-grained materials is not appropriate.

However, beach replenishment using sand-sized material has been undertaken regularly and is well understood. The general distribution and transport of sand-sized material has been studied for the Crystal Cove Sub-Cell and is reasonably well understood. Replenishment by sand-sized material is an appropriate mitigation for the project-related losses of all the coarse material.

The required replenishment program would be established to place approximately 160 cubic yards per year of beach size sand onto beaches in the Crystal Cove Sub-Cell. Since this a small pocket beach, material should be placed on the beach in small increments, comparable to a one to five year supply, otherwise the material will quickly be carried downcoast. Prior to any in-kind replenishment, a program to achieve littoral sediment replenishment should be established. The development of a comprehensive program will provide a means to maximize the benefits of individual mitigation efforts in the area now and in the future. A comprehensive program would include, among other items, a suggested schedule for replenishment, identification of sand sources, environmental review of the replenishment efforts, design of the replenishment program and follow-up monitoring.

The Watershed and Coastal Resources Management Division of the Orange County Public Facilities and Resources Department is attempting to develop a number of programs relating to coastal and watershed management. A beach replenishment

program for the Crystal Cove Sub-Cell would fit well with the general direction of this Department; however, a full program is not now available. State Parks is also concerned with the continued stability of the state beaches and may also be interested in developing a replenishment beach sand program that could be implemented in the Crystal Cove Sub-Cell. There is not now a full replenishment program that evaluates and guides the use of the most appropriate sites and methods for introducing the material so that it will mitigate this project's impacts and maximize benefits to sandy beaches in the Crystal Cove sub-cell. Absent such a program, the Commission cannot specify a direct in-kind placement of sandy material as mitigation for this particular project.

The in-lieu fee is an alternative mitigation mechanism that is used when in-kind mitigation of impacts is not presently available. The Commission has successfully used the in-lieu fee mechanism to mitigate sand supply impacts in the San Diego region and the Santa Cruz region. To implement this mechanism, the sand supply impacts must be quantified and then translated into a specific dollar amount. This fee is then put in an interest-bearing special deposit account for future allocation to an identifiable sand replenishment effort developed through a program that is specifically designed to address the impacts caused by the project at issue. In-lieu fees are particularly appropriate in cases such as this, where although there may be as yet unidentified opportunities for beach replenishment in the future within the Crystal Cove Sub-Cell, in-kind replacement today, by a single applicant, is not an undertaking likely to result in successful resource impact mitigation. Nonetheless, the impacts must be mitigated. This is also particularly important to acknowledge given that the project is adjacent to a state public beach.

Overall, absent any other mitigation proposals for the sand supply impacts of the project, the Commission is obligated to require in-lieu fee mitigation in order to approve the proposed project. Special Condition 6 therefore requires the applicant to establish an in-lieu fee account based on the quantifiable impacts of the proposed project.

Inquiries by the Commission staff find that costs for local sand replenishment in the Orange County area vary widely, depending upon the particular location of the source material, method of transportation and total volumes being considered. Undelivered sand from landfills in Southern California are as low as $1/cubic yard. However, transportation costs for this material increase these costs significantly. Nourishment of the Crystal Cove Sub-Cell would have to be done in small amounts at regularly repeated projects. These would be land-based efforts, since the costs to mobilize and demobilize a dredge would make offshore supplies prohibitively expensive.

In 1996, sand was trucked to and placed on Seal Beach at a total project cost of $11.50 per cubic yard. (personal communication from Chris Webb, Moffatt-Nichol Engineers, 20 July 2000) In 1998, a second nourishment project at Seal Beach brought sand in by rail at a total cost of $15.80 per cubic yard (op.cit). Sand was placed on a small beach

in Huntington Harbor at a total cost of $25 per cubic yard; however, this cost included sieving the sand to meet a very close grain size tolerance (op.cit). The City of Encinitas annually nourishes Moonlight Beach. From 670 to 1,020 cubic yards of sand are purchased, hauled and placed on this city beach each year at costs ranging from $30 to $36 per cubic yard of sand (Sand Import – Moonlight Beach, Fiscal Year 92/93 through Fiscal Year 98/99; provided by City of Encinitas).

Nourishment averaged $13.65 for the two separate projects at Seal Beach, cost $25 at Huntington Beach for a individual project and averaged $34.39 for 7 separate events at Encinitas. Using the most economical estimate for beach replenishment ($13.65 per cubic yard for the two separate projects at Seal Beach) and based on a total loss of 160 cubic yards per year for 75 years, the anticipated economic life of the approved development, a one-time lump sum obligation would be:

(160 cy/yr) x (75 yrs.) x ($13.65/cy) = $163,800.

This estimate for annual nourishment of 160 cubic yards of sand is conservative. Using the average nourishment cost for the small nourishment projects at Moonlight State Beach, this same volume of nourishment would cost $412,680. The City of Encinitas purchases sand from a commercial supplier, rather than acquiring opportunistic sand and over half the replenishment cost is for the sand alone. If efforts were made to obtain opportunistic sand, these costs would compare better with those for Seal Beach. It is conservative, but reasonable to assume that the nourishment costs for the Seal Beach projects could reflect costs for nourishment in the Crystal Cove Sub-Cell. The Commission further notes that special condition 6 requires that the applicant's fair share participation in a beach nourishment program to be a minimum of $163,800. Therefore if sand costs are greater than $13.65/cy the applicants will have to increase their fair share amount to make sure that it is adequate to mitigate the actual quantity of sand lost due to project impacts and to share the cost of longterm monitoring of beach sand quantities (Transcript, p. 139, line 1-7; p. 140, line 23 - p. 141, line 4; p. 143, line 19-22; p.156, line 2-5.)

As specified in the Special condition 6, the purpose of these in-lieu funds shall be to support a beach replenishment program for the Crystal Cove Sub-Cell, including the establishment of longterm monitoring of beach sand quantities and the preparation of a program for beach sand replenishment as well as the implementation of beach replenishment to the beaches within the Crystal Cove littoral sub cell. This sub-cell is logically related to the direct, indirect and cumulative impacts of the project. This subcell is a small area, however there are several beaches and local entities within the Crystal Cove littoral sub-cell, which includes the area between the east jetty of Newport Beach and Abalone Point, Laguna Beach. In addition, several entities have formed and studies are underway that are concerned with the issue of beach erosion within the greater Orange County coastal region and the state as a whole. The Orange County Coastal Coalition, the Coast of California Storm and tideway study by Orange County

and the Army Corps of Engineers, and the coastal sediment working group including many agencies within the Resources Agency and the Army Corps are some of these groups and studies (Transcript, p.142, line 8-17, p. 150, line 14-19). The Commission therefore finds that it is feasible to establish, implement and maintain beach nourishment projects within the Crystal Cove littoral sub-cell As conditioned, the Commission finds the proposed project consistent with the requirement of Policy J4 to maintain the present level of beach sand replenishment.

3. MARINE RESOURCES PROTECTION

Water Quality and related Resource Protection LCP Policies

The LCP Resource Conservation and Management Policy E designates the off-shore coastal waters as ESHA Category "C" due to its diverse marine life and kelp beds and recognizes its designation as a Marine Life Refuge by the Department of Fish and Game (DFG) and an Area of Special Biological Significance (ASBS) by the Water Resources Control Board. LCP. ESHA Policy E. states:

> **E. CATEGORY "C" ENVIRONMENTALLY SENSITIVE HABITAT AREA POLICIES**
>
> The protection of water quality in marine resource areas is subject to the authority of the State Water Resources Control Board". Protection of water quality is provided by the LCP Runoff Policies and will be reviewed by the Regional Water Quality Control Board in conjunction with subsequent coastal development permits and related environmental impact reports (EIRs).
>
> A water quality monitoring program shall be submitted to the Regional Water Quality Control Board prior to initial implementing approvals for the golf course, for the purpose of monitoring runoff entering the ocean as well as the riparian corridors. Copies of the results of the monitoring program shall be forwarded to the Regional Water Quality Control Board and the County of Orange on a regular basis for their review to determine whether corrective action is required pursuant to the authority of said agencies.
>
> Use and application of chemicals on the golf course and other landscape areas shall be limited to those approved by State, County, and Federal agencies. The landowner shall be responsible for notifying tenants and/or prospective initial purchasers of this requirement.

The applicant is proposing a water quality enhancement program as part of their CDP application. It was not included in the project approved by the County. Concerning the water quality treatment program, the applicant states, "although not specifically

addressed in the LCP, recent interest in water quality measures and other matters expressed by the Commission and others have prompted the addition of these environmental enhancements". The applicant also contends that the Commission may lack any legal ability to impose a comprehensive mitigation program for water quality.

The Coastal Commission has the authority to address coastal water pollution associated with land use practices and constituting non-point sources of pollution. The authority of the Commission with regards to the enforcement of the non-point pollution control provisions of the Coastal Zone Management Act was discussed by the Commission's chief counsel and deputy counsel in a memorandum addressed to the Commission and Interested Parties, dated October 21, 1999. The memorandum concludes that where the Commission has certified a LCP, on appeal, the Commission may impose compliance with the standards in the certified LCP, including any management measures to prevent or mitigate non-point source pollution. The applicable LCP provisions are specifically addressed below. Additionally, since the Commission is reviewing the proposed development for consistency with the certified LCP, and the certified LCP requires consistency with all permit requirements of the Water Board, the Commission finds that their review of the proposed development's consistency with the certified LCP is necessarily consistent with the limitations of Section 30412 of the Coastal Act.

The applicant next states that the LCP does not contain "water quality" policies. However, with respect to erosion and urban runoff control associated with the protection of marine water quality in particular, the LCP states the following:

> Marine water quality will be protected by directing runoff to natural drainage courses such as Los Trancos Canyon, Buck Gully, and Muddy Canyon...and by means of erosion control techniques to slow runoff so that habitat areas are protected from flows significantly in excess of natural rates of flow. Additional control of non-point sources will be implemented if necessary to comply with state, regional, and county standards. **[Emphasis added].**

In consideration of the applicable State, regional and County standards described herein and as discussed further below, the Commission finds that in addition to the erosion control techniques referred to in the LCP excerpts above, non-point source control measures, such as those proposed by the applicant and further augmented by conditions herein, are necessary for the proposed development in order to ensure runoff from the developed site will be consistent with State and local standards, and therefore consistent with the provisions of the Newport Coast LCP.

Analysis of Water Quality Issues

The Newport Coast LCP provides for the protection of surface water quality in coastal streams and marine waters primarily through the Runoff Policies, and the ESHA Policies. The Commission notes the Grading Policies and Erosion & Sediment Policies listed with the Runoff and applicable ESHA Policies above, and discussed in other sections of this report, are also however, related to water quality.

Muddy Canyon and Los Trancos Canyon contain at present, ephemeral streams, which will receive drainage from the proposed development. Both of these streams are tributary to coastal waters that are encompassed in an area designated as a Marine Life Refuge by the Department of Fish and Game, and an Area of Special Biological Significance (ASBS) by the State Water Resources Control Board (SWRCB).

In the LCP, protection of surface water quality and sensitive resources in coastal streams and ocean waters, is heavily reliant upon applicant compliance with the regulations which govern this project under the authority of the State and Regional Water Boards. This is evident in LCP Policy 3.E., which states:

> *The Category "C" ESHA area is encompassed within Crystal Cove State Park. The protection of water quality in marine resource areas is subject to the authority of the State Water Resources Control Board. Protection of Water Quality is provided by the Runoff Policies and will be reviewed by the Regional Water Quality Control Board in conjunction with subsequent coastal development permits...*

The applicable runoff policies are noted above. Since these policies specifically address processes associated with natural erosion and beach replenishment which required technical analyses of the development specific to those issues, they are discussed in a separate section of this report.

State and Regional Water Board Actions

The project is subject to State Water Resource Control Board (SWRCB) and Santa Ana Regional Water Quality Control Board (SARWQCB) regulations with regard to stormwater and non-stormwater runoff associated with new development during and after construction. Relevant permits include the State Water Resources Control Board (SWRCB) National Pollutant Discharge Elimination System (NPDES) General Permit No. CAS000002 Waste Discharge Requirements (WDRs) for Discharges of Storm Water Runoff Associated with Construction Activity, the County of Orange Municipal NPDES Stormwater Permit No. CA 8000180, and the Orange County Drainage Area Management Plan, an implementing plan approved by the RWQCB for compliance with the municipal permit. In addition, the SARWQCB issued

Waiver of WDR (9/30/99). Applicable regulations pursuant to the State and Regional Board authority indicated here are described below.

WDR Waiver of 401 Water Quality Certification Requirements

Pursuant to section 401 of the Clean Water Act (CWA), any person applying for a federal permit or license for an activity which may result in a discharge of pollutants into waters of the nation must obtain a state water quality certification verifying that the activity complies with the state's water quality standards. No license or permit can be granted until certification required by section 401 has been obtained or waived.

In response to the Irvine Company's request for 401 certification for the proposed development, the Santa Ana Regional Water Quality Control Board staff initially recommended denial without prejudice based on the following original assessment of record contained in a letter to Walt Petit, Executive Director of the State Water Resources Control Board from Gerard Thibeault, Executive Officer of the Santa Ana Regional Water Quality Control Board, dated September 20, 1999, RE: REGIONAL BOARD RECOMMENDATION FOR DENIAL WITHOUT PREJUDICE OF 401 WATER QUALITY CERTIFICATION FOR THE PROPOSED CRYSTAL COVE/NEWPORT COAST PHASES IV-3 7 IV-4 PROJECT, UNINCORPORATED ORANGE COUNTY (ACOE REFERENCE NO. 980071600-YJC) which states:

> Based upon an assessment that the proposed project will result in alterations to the natural landscape, the drainage patterns of Los Trancos and Muddy Canyon Creek and the natural water quality runoff, Regional Board staff believes that the proposed project could alter the water quality in the receiving ASBS waters. There is inadequate evidence in the record that the discharges resulting from this project would be located at a sufficient distance from the Irvine Coast ASBS to assure the maintenance of natural conditions therein. Therefore, we cannot conclude, based on the existing information, that the project would comply with State water quality standards.

The Regional Board staff indicated however, in the memo cited above, that they would be prepared to support certification, if it was determined that Ocean Plan standards applicable to areas of ASBS were not applicable to discharge from the proposed project. Subsequent to the recommendation above, the State Board Chief Counsel advised the SARWQCB that their application of the Ocean Plan discharge prohibition was inappropriate since discharges from the proposed project would be to tributaries to the ASBS rather than directly to the ASBS.

RWQCB staff found in reviewing the project absent ASBS considerations, it met RWQCB established criteria (discussed specific to water quality, below) for waivers from WDR certification requirements. Pursuant to this determination, the RWQCB issued a waiver of individual waste discharge requirements for Phases IV-3 and IV-4 of the Newport Coast Project, in response to the Irvine Company's request for 401

certification of the project as part of its application for a 404 permit from the U.S. Army Corp of Engineers, on September 30, 1999.

Relevant criteria (among other), specific to water quality on which the WDR waiver was based is found in the following condition:

> The project shall not cause a violation of any applicable water quality standard for receiving waters adopted by the Regional Board or the State Water Resources Control Board, as required by the Clean Water Act.

A letter directed to Coastal Commission staff dated December 29, 1999, from the Executive Director of the Santa Ana Regional Board, discusses the waiver. The letter states the following:

> *In issuing the waiver, Board staff recognized that the project would be regulated under existing waste discharge requirements both during and after construction, namely, the State Water Resources Control Board's general construction activity stormwater permit, and the areawide urban stormwater permit issued to Orange County and co-permittees. Board staff would not have issued the waiver had we believed that the project regulated in this manner would result in impairment of receiving waters.**[Emphasis added].***

Additionally, the RWQCB has recently submitted a letter, dated July 14,2000 verifying that the WDR Waiver issued September 30, 1999 remains valid and applicable to the proposed development as revised and currently before the Commission. (EXHIBIT 40).

The Commission notes that project opponents contend that the RWQCB action with respect to the WDR waiver was/is inappropriate, and in fact illegal. They maintain that the Ocean Plan standards are applicable to discharge associated with the proposed development due in part to the fact that direct discharge from the development into the ASBS is occurring, based on an interpretation of the definition of a "direct discharge" associated with tributary drainage into the ASBS, and discharge which will allegedly drain from the proposed development directly through Pacific Coast Highway (PCH) pipes and/or culverts over the bluffs and directly onto the beach at high tide .

The applicant contends that no drainage from the proposed development will be discharged over the bluffs, directly to the beach through the PCH pipes or culverts. The following excerpt from a letter dated 2/18/00, from the applicant to the Santa Ana RWQCB, clarifies the applicants proposed drainage plans:

> *"...we do not plan to utilize the existing culverts, which were installed by Caltrans during the construction of PCH, for either low flows or storm flows for the Project. The exception is that we will be using the Caltrans culverts at Los Trancos*

Creek, Muddy Canyon Creek, and the 30 inch RCP that drains into Los Trancos Creek. Therefore there will be no direct discharges from our Project to the Area of Special Biological Significance (ASBS)".

The applicant has provided a map entitled *Tributary Area and Low Flow Diversion Map*, prepared by Hunsaker & Associates, dated 6/14/00, with color illustration added 7/31/00 (EXHIBIT 45), which depicts the drainage plans associated with the proposed development, consistent with the plans described by the applicant in the letter referenced above. The map supports the applicant's contention that no drainage from the proposed development will be discharged through PCH pipes or culverts over the bluffs and directly onto the beach. Further, at the public hearing on this matter (August 10, 2000), the applicant's representative offered testimony in response to contentions from project opponents regarding the issue of whether any discharge from the appeal area was being conveyed through a 3' by 4' box culvert directly on to the beach. Specifically, the applicant's representative stated the following: " This 3' by 4' box ...carries no appeal area discharge of any kind, none" [Transcript Page 93, lines 24 and 25; Page 94 line 1]. Commission staff has reviewed the letter, and map referenced above, and finds that based on a review of these documents, no drainage from the proposed development subject to appeal will be discharged through PCH pipes or culverts, over the coastal bluffs and directly onto the beach. The testimony excerpt (above) from the transcript of the public hearing on this matter, when combined with the drainage map and statement contained in the letter cited above, offers further assurance to the Commission, that while the 30 inch RCP will be utilized, no drainage from the appeal area development would ever discharge directly (without first entering one of the Creeks) on to the beach through the 3' by 4' box culvert or other PCH pipes or culverts.

With respect to the interpretation of "direct discharge" pertaining to flows entering Muddy Canyon and Los Trancos Creek, which are tributary to the Pacific Ocean, the Commission recognizes the policy interpretation of the SWRCB contained in a letter to the RWQCB, dated September 30, 1999, which served as the basis for RWQCB determination with respect to the Waiver of WDR for 401 certification.

Further, consistent with Section 30412 of the Coastal Act, the Commission finds that based on overall project analysis discussed herein, which includes a recognition of the assessment and determination of the Regional Board action on the 401 certification, described and attested to in the above letter dated December 29, 1999, the Commission does not expect that the storm water and/or non-stormwater discharge from the development will result in impairment of receiving water bodies, or that such runoff will otherwise significantly impact the Crystal Cove ASBS, recognized as Category "C" ESHA in the LCP, if the applicant achieves full compliance with the provisions of the State General Construction Activity NPDES permit , the Areawide Urban Stormwater NPDES Permit, the provisions of

the WDR waiver, as conditioned and issued by the Regional Board and the LCP, all of which are discussed in detail below.

SWRCB General Construction Activity NPDES Permit

The State Water Resources Control Board (SWRCB) NPDES General Permit No. CAS000002, Waste Discharge Requirements (WDRs) for Discharges of Storm Water Runoff Associated with Construction Activity, is applicable to construction projects which result in a disturbance of 5 or more acres of land. Under this Permit, the discharger is required to employ Best Available Technologically Achievable (BAT) and Best Conventional Pollutant Control Technology (BCT) to reduce or eliminate storm water pollution.

Opponents to the project have raised concerns about applicant compliance with the provisions of this Permit, with respect to the proposed development. This concern is based on video documentation of turbid runoff leaving an area adjacent to the appeal area that was under construction during storm events last winter and being discharged into Muddy Creek.

With respect to the video documentation of the site currently under construction and not subject to this appeal, BMPs designed to control erosion and sediment contained in stormwater runoff from development sites under construction is a regulatory requirement to which the development associated with the video is subject. Staff has observed the video, however, there is incomplete evidence in the record for staff to determine whether the turbid water contained fine sediment and clays beyond that which is practicable to eliminate through the use of BMPs consistent with applicable regulations, or whether in fact, the BMPs employed by the Irvine Company in this specific case were inadequate or had failed.

While the development that is the subject of the video tape is not before the Commission, the relevance of this discussion here is founded in a concern that 1) the BMPs/practices employed by the Irvine Company associated with development currently underway on property adjacent to the area where development is currently proposed, may have been inadequate or failed and 2) if so, it is conceivable that this may be indicative of what might occur on the area that is before the Commission in spite of the regulatory requirements to which the project is subject to for any reason – a flaw in scoping, preparation of the SWPPP, implementation, maintenance of BMPs or other reasons.

In addition, pursuant to Administrative Civil Liability Complaint No. 99-90, The Irvine Company was fined for a violation of Waste Discharge Requirements pertaining to an authorized non-stormwater discharge associated with the development currently underway. As indicated above, the State General Construction Permit requires:

> *" the SWPPP developed for construction activity to be designed and implemented such that ...authorized non-stormwater discharge shall not cause or contribute to an exceedance of any applicable water quality standards".*

A discharge in exceedance of those effluent limitations established by the Regional Board for chlorinated discharge may then constitute an action not in compliance with the State General Construction NPDES Permit.

With respect to the latter of the two issues noted above as a basis for concern on the part of the Commission, specifically the applicant's potential failure to comply with provisions of the State General Construction NPDES Permit in conjunction with development not subject to appeal but currently under construction, the Commission is aware of reports alleging the failure of some types of erosion control measures employed by the applicant. Commission staff discussed one such report with the applicant in a meeting occurring on 7/18/00. In response to staff inquiry about the possible failure of erosion control devices, the applicant indicated that the report may have been associated with the dislodging of sandbags located on or near Pacific Coast Highway, intended to control runoff and trap sediment and debris. The applicant indicated that it is believed that this incident may have occurred as a result of vehicle operation on Pacific Coast Highway (PCH). PCH is a heavily traveled roadway, involving automobiles moving at speeds in excess of 45 mph.

The Commission finds that in order to ensure the continued efficacy of erosion control measures and other BMPs required to control erosion and sediment during construction phase activity, site considerations, such as those which have the potential to affect the efficacy of BMPs by way of physical disturbance or other cause, must be addressed in the development and implementation of the SWPPP.

Construction Phase Runoff Control

The proposed development must be in conformance with applicable State and Regional Water Board regulations in order to be consistent with the LCP. While the State Water Resources Control Board (SWRCB) NPDES General Permit No. CAS000002, Waste Discharge Requirements (WDRs) for Discharges of Storm Water Runoff Associated with Construction Activity (General Construction Permit) does not require specific Best Management Practices or impose numeric effluent limitations, it places a requirement on dischargers to employ Best Available Technologically Achievable (BAT) and Best Conventional Pollutant Control Technology (BCT) to reduce or eliminate storm water pollution, and includes the following additional narrative standards:

DISCHARGE PROHIBITIONS:

1. Authorization pursuant to this General Permit does not constitute an exemption to applicable discharge prohibitions prescribed in Basin Plans, as implemented by the nine RWQCBs.
2. Discharges of material other than storm water which are not otherwise authorized by an NPDES permit to a separate storm sewer system (MS4) or waters of the nation are prohibited, except as allowed in Special Provisions for Construction Activity, C.3. of the SWRCB NPDES Permit.
3. Storm water discharges shall not cause or threaten to cause pollution, contamination, or nuisance.
4. Storm water discharges regulated by this General Permit shall not contain a hazardous substance equal to or in excess of a reportable quantity listed in 40 CFR Part 117 and/or 40 CFR Part 302.

RECEIVING WATER LIMITATIONS:

1. Storm water discharges and authorized nonstorm water discharges to any surface or groundwater shall not adversely impact human health or the environment.
2 The SWPPP developed for the construction activity covered by this General Permit shall be designed and implemented such that storm water discharges and authorized nonstorm water discharges shall not cause or contribute to an exceedance of any applicable water quality standards contained in a Statewide Water Quality Control Plan and/or the applicable RWQCB's Basin Plan.
3. Should it be determined by the discharger, SWRCB, or RWQCB that storm water discharges and/or authorized nonstorm water discharges are causing or contributing to an exceedance of an applicable water quality standard, the discharger shall:

    a. Implement corrective measures immediately following discovery that water quality standards were exceeded, followed by notification to the RWQCB by telephone as soon as possible but no later than 48 hours after the discharge has been discovered. This notification shall be followed by a report within 14-calender days to the appropriate RWQCB, unless otherwise directed by the RWQCB, describing (1) the nature and cause of the water quality standard exceedance; (2) the BMPs currently being implemented; (3) any additional BMPs which will be implemented to prevent or reduce pollutants that are causing or contributing to the exceedance of water quality standards; and (4) any maintenance or repair of BMPs. This report shall include an implementation

schedule for corrective actions and shall describe the actions taken to reduce the pollutants causing or contributing to the exceedance.

b. The discharger shall revise its SWPPP and monitoring program immediately after the report to the RWQCB to incorporate the additional BMPs that have been and will be implemented, the implementation schedule, and any additional monitoring needed.

c. Nothing in this section shall prevent the appropriate RWQCB from enforcing any provisions of this General Permit while the discharger prepares and implements the above report.

Since these narrative standards rely on the best professional judgement of local stormwater agencies and RWQCB staff to determine if a violation has occurred, it is in the interest of the Commission to review the specific Storm Water Pollution Prevention Plans for this project, as well as any other reports to the RWQCB regarding the compliance of this project with the General Construction Permit. The State Department of Parks and Recreation (DPR) has expressed interest in reviewing the wet weather erosion control plans. Due to the potential construction phase effects the development could have, if not properly managed, on the Crystal Cove State Park (because of it's proximity to the proposed development) and because of the obvious mutual resource interest of these two parties, the Commission finds it appropriate to require The Irvine Company to also allow DPR to review these plans [Transcript Page 105, lines 5-20].

Therefore the Commission finds it necessary to impose Special Condition No. 5 which requires that the applicant provide the Executive Director with a copy of the SWPPP. In addition, monthly status reports regarding the implementation of the SWPPP (including deficiencies noted and modifications imposed) and copies of any reports of inspection of the site for SWPPP compliance by the applicants third-party consultant inspectors or by government officials are required to be submitted to the Executive Director. Special Condition 5 also requires the applicant to submit a set of wet weather erosion control plans to DPR, concurrent with the submittal of such plans to the Executive Director [Transcript Page 105, lines 5-20].

The CCC will consult with the RWQCB and /or EPA on such reports. If reports indicate activity not in compliance with the Permit is occurring, corrective action will be required pursuant to this Permit. Corrective action may involve the incorporation of additional BMPs into the development in order to ensure compliance and shall require an amendment to this CDP unless the Executive Director determines no such amendment is required.

Areawide Stormwater Permit (Order No. 96-31; NPDES No. CAS618030)

The applicant has submitted a *Master Drainage and Water Quality Plan – Crystal Cove, prepared by Hunsaker and Associates* (6 sheets) Volume I and II (MDWQEP) dated *(7/24/00)*. The plan describes narratively and illustrates graphically the source

and treatment control measures proposed by the applicant to control nonpoint source pollution in the form of urban runoff from the development. These measures are consistent with the areawide municipal stormwater permit (CAS618030), issued to the County of Orange and co-permittees (Cities), as well as the Orange County Drainage Area Management Plan (OC DAMP), submitted to the Regional Boards for compliance with the NPDES permit by the County and co-permittees, as described below. In addition, the applicant has submitted a report entitled *Newport Coast Planned Community, Crystal Cove Storm Water Quality Evaluation Report, prepared by Peter Mangarella, Eric Strecker, and Seth Gentzler, dated June 14, 2000,* which discusses the proposed measures in the context of the overall water quality management plan, wherein the program is evaluated with results compared to applicable water quality objectives. The Report also contains recommendations specific to the program.

The OC DAMP is essentially the implementing program for the NPDES permit. It was developed based upon the principle criterion identified in the NPDES permit, that being the term Maximum Extent Practicable or "MEP." The NPDES permit defines "MEP" as follows:

> *"MEP" means to the maximum extent practicable, taking into account equitable considerations of synergistic, additive, and competing factors, including but not limited to, gravity of the problem, fiscal feasibility, public health risks, societal concern, and social benefits."*

The NPDES Municipal Stormwater Permit co-permittees (Orange County and Cities) have the responsibility of weighing economic, societal and equity issues as they define the policies and standards to be employed in implementing the OC DAMP program.

The OC DAMP includes a section focused on New Development Control (Section 7.0), which requires new development (such as Newport Coast) to incorporate non-structural, routine structural, and special structural BMPs *"to minimize the amount of pollution entering the drainage system."* The following are examples of non-structural, routine structural and special structural BMPs, proposed for incorporation per the Stormwater Quality Evaluation Report, dated 6/14/00, and graphically depicted in the Master Drainage and Water Quality Enhancement Program (MDWQEP) for the Newport Coast Planned Community (6 sheets), dated 7/24/00 (not a complete list):

> *Non-structural:* Fertilizer and Organic Soils Management, street sweeping and litter pick-up, homeowner education
>
> *Routine structural:* Inlet trash racks, energy dissipaters, efficient irrigation technology, vegetated swales, extended detention ponds, catch basin media filters

Special structural: Nuisance flow diversion

The applicant's water quality program includes both source and treatment control Best Management Practices. The plan includes the incorporation of approximately 5 "regional" storm drain filters, specifically "Drain Paks", and 40 Drain Pak inserts located throughout the proposed development. "Regional" is described as those which are "located in-line with the storm sewer system and are designed to treat low storm flows". The inserts are "located within storm drain inlets and treat storm water runoff before it enters the storm sewer system". Vegetated swales are proposed to be located along a portion of Reef Point Drive, which is along the frontage of the Crystal Cove commercial tract and selected locations within the recreation areas. Circular bio-filters designed to collect and treat local drainage from selected cul-de-sacs are proposed for implementation at cul-de-sacs where technically feasible. Six (6) detention basins designed to control peak flows will be constructed. In addition to contributing to the volume/velocity control function, detention basin # 6 will be designed to capture an estimated 85% of the mean annual runoff from 380 acres, approximately 260 of which are in the area subject to appeal, as well as provide a 40-hour draw-down period to allow settling and absorption of pollutants. An extended detention wetland is proposed to be located in conjunction with the agricultural reservoir. The wetland can provide water quality benefits through biological processes and functions such as, filtration, microbial degradation, and vegetative uptake. A riparian corridor will be located directly downstream of flood control detention pond #1.

The applicants consultants base assumptions about stormwater quality relative to performance from the BMPs that the applicant plans to use on results generated from the use of a model referred to as adaptation of an EPA method called the "Simple Method". The consultant evaluated the results of the model against California Toxics Rule (CTR) objectives for inland freshwater streams, and found that that for Muddy Creek: " the model results show that the predicted average concentrations for the trace elements in stormwater are well below the acute CTR objectives applied in Muddy Creek". Further the applicant's consultant contends that the constituents beyond those modeled which are associated with particulates (e.g. hydrocarbons and bacteria) will also be controlled through proposed BMPs, and that contaminants such as pesticides and herbicides are addressed through homeowner's education programs.

The proposed suite of permanent BMPs and the modeling effort to predict their performance was evaluated by an independent consultant hired by California Department of Parks and Recreations. The independent consultant, Dr. Michael K. Stenstrom of UCLA, in a draft report dated July 24, 2000 indicated that "the range and magnitude of BMPs is impressive" and confirmed that the model "is a fair and reasonable predictor of the impact of the development". He also made the following recommendations that he indicated would improve the "workability and robustness of the plan":

1. Low flow diversion. The diversion of low flow will create a continuing cost to prospective homeowners. In order to create an incentive to reduce this cost (and therefore maintain a willingness on the part of homeowners to pay it) the cost should be billed on the basis of volume of diverted flow. This can be done by installing flow meters and totalizers at each pump station. The totalizers can be checked periodically (i.e., weekly or biweekly) in the summer. The sanitary districts can be consulted to create a fee structure composed of a base fee and a progressive fee based upon total flow rate. The districts can make the fee commensurate with actual costs. If the districts do not want to install meters and totalizers, they can install simpler but more reliable elapsed time meters (the meter accumulates time only when the pump is running). The elapsed time is multiplied by the known, average flow rate of the pump to calculate the total flow. The totalizer will also be useful in monitoring performance of the pump station. Very low values may reveal failure in the pump station, or a rapid increase suggests a problem in the drainage area, such as a leaking water main. The totalizer data will give the homeowners' association, or other manager, a management tool. At present the diversions are only planned during the summer. The beach waters are used for bathing beyond these time limits. It would be useful if the flows could be diverted during other dry periods of the year. The Sanitation District may not accept these flows, but it would useful to see if an arrangement could be worked out.

2. DrainPacs must be monitored to determine when they are clogged. The best way to do this is observe them in the rain. Ideally, a maintenance contractor should be hired to perform this function. An outside stormwater contractor such as United Stormwater could do this function. The landscaping contractor could be charged with observing and photographing the units during rainfall. Litter could be removed from the collected material and the remainder may be suitable for mixed composting.

3. The DrainPacs have been sized using a rating of 50% of hydraulic conductivity. This rate was based in part upon my experiments at UCLA. None of the area DrainPacs have been designed. It might be wiser to rate them at 25% of the hydraulic conductivity, which would double the required area. This would reduce cleaning frequency and increase reliability. Some of the structures are quite small (i.e., < 20 sq. ft.), and doubling their size would not double their construction costs.

4. An aggressive street sweeping program is proposed. From my tour of previously developed areas, it appears that the proposed street sweeping may be more frequent than needed. Street sweeping is most effective in more populated land uses, with greater vehicle and pedestrian traffic. Weekly or bi-weekly street sweeping is probably adequate, except during construction periods. The

Development Company should consider directing some of the street sweeping effort to other BMPs, such as larger DrainPacs or construction-time BMPs.

5. Several detention basins are proposed. The success of these basins will depend in large part on their detailed design, which requires that the high flow does not flush out the material retained during the low flow or the first flush. I do not know of the plans for the detailed design. The Development Company should insure that the basins are optimally designed. Again, the Mangarella team has the expertise to design the basins or review the designs to insure success.

The above recommendations pertain to BMP design specificity associated with sizing and design criteria, and implementation methods to supplement proposed BMPs. The Commission finds that appropriate design is critical to the efficacy of structural BMPs. The primary water quality benefit a detention basin provides is attained through a settling function which occurs as detention time is increased, thereby allowing suspended solids to settle out in the bottom of the basin. Since at least one of the detention basins (Basin 6) is proposed to be designed to provide a dual function of water quality treatment and flood control, the Commission finds it important to require that all of the new detention basins (1,2, 3 and 6) be designed to prevent resuspension and/or flush out of material which has accumulated in the bottom of the basin, consistent with Dr. Stenstrom's recommendation cited above in number 5 [Transcript Page 107, lines 21-25].

The Irvine Company has agreed to rate the proposed regional Drainpak filter insert devices at 25% of hydraulic conductivity, consistent with Dr. Stenstrom's recommendation No. 3 above [Transcript Page 207, lines 11-19]. Further, the Irvine Company proposed to revise the plans for the storm drain system to allow stormwater flows from Planning Areas 3A, 3B, and 14, which are located in the non-appeal area, to be either routed through drainpak catch basin filter inserts, or to the water quality treatment detention basin (basin 6). The Irvine Company incorporated this proposal into their project description [Transcript Page 208, lines 1-24]. This proposal and the requirements pertaining to detention basin design discussed above have been incorporated into Special Conditions 14 and 15 as applicable.

While the Commission supports the BMP maintenance and other specifications and methods identified in Dr.Stenstrom's other recommendations (numbers 1,2 and 4) and encourages the applicant to utilize them where feasible, the Commission finds that the applicants post-construction water quality control program, as proposed and augmented by Special Conditions 14 – 18 contained herein, is in conformance with the applicable water quality related policies of the Newport Coast LCP.

Diversion System

Additionally, the applicant has proposed a low flow diversion system designed to intercept and divert all dry-weather nuisance flows from the appeal areas, as well as all flow draining into Los Trancos and Muddy Canyon Creeks from existing development in the Newport Coast to the north and west containing 509 residential units and a portion of the golf course, which drains into Los Trancos Creek. This includes portions of Planning Areas 1C, 2B, 2C, 10B, 11B, 13A and 13F which drain into Los Trancos Creek. Dry weather nuisance flows from areas generally described above and specifically indicated in Special Condition 15C will be diverted to the Orange County Sanitation District's (OCSD) wastewater treatment plant for treatment prior to discharge, from April 15 through October 31 of each year for the life of the project [Transcript Page 102, lines 14-19]. Runoff flows occurring during dry weather characterized as "nuisance" are not a natural occurrence. They are a result of urbanization, and therefore have the potential to alter natural dry weather conditions in sensitive coastal and marine ecosystems. They often have a higher concentration of pollutants due to the lower runoff volumes and relatively constant pollutant deposition.

Based on the OC DAMP, low flow diversion can be considered a "Special Structural" BMP, and therefore may be required for development in response to known or identified persistent water quality problems in receiving waters. Diversion of dry-weather nuisance flows has been required in other Southern California LCPs (e.g. Treasure Island) to eliminate the impacts of nuisance flows to the coastal zone.

While no persistent water quality impairments have been identified for the receiving waters associated with the proposed development, the Commission finds this low flow diversion system is consistent with the Best Management Practices being used by other coastal developments in Southern California, and will serve to further eliminate potential impacts associated with non-saline water on sensitive coastal and marine resources associated with the Marine Life Refuge, and ASBS, in a manner consistent with the LCP.
Moreover, with the recent approval of California's Non-Point Source Pollution Control Plan, the Coastal Commission and the State Water Resources Control Board have cooperatively embarked on implementation of a strategy for controlling nonpoint source pollution and improving coastal water quality. The plan includes a mechanism for identifying areas requiring special protection from nonpoint source impacts as "Critical Coastal Areas" (CCAs). The Crystal Cove ASBS is designated as an ESHA in the California Coastal Management Plan (CCMP) and in the certified LCP. As such, it is a likely candidate to be designated as a CCA with the additional protections that the California's Non-Point Source Pollution Control Plan recommends.

The Non-Point Source Pollution Control Plan states:

> California will use a combination of approaches in delineating CCAs. First, the State will designate special sections within the California coastal zone as CCAs. These include environmentally sensitive habitat areas (ESHAs) currently

designated in California's coastal zone management program, as well as California's National Estuarine Research Reserves, National Estuary Programs, and National Marine Sanctuaries. Within these areas the CCC will use it's existing authority under the California Coastal Management Plan (CCMP) to ensure that all appropriate Management Measures (MMs) are implemented and, where appropriate, that additional MMs are developed to protect these coastal waters.

Due to the sensitive and extremely valuable nature of the ASBS, the Commission finds that the diversion of dry weather nuisance flows as proposed by the applicant is an additional mitigation measure which will serve to further eliminate the potential for any such resource impacts associated with the introduction of non-saline runoff water to occur in the ASBS, and to ensure that the quality of water in the ASBS is preserved in a manner consistent with all State, regional, and County standards. As such the proposed diversion conforms to the LCP.
The Commission also finds that in addition to the BMPs proposed for controlling stormwater pollution, the diversion of dry weather nuisance flows to the treatment plant offers assurance that these nuisance flows which are not a natural occurrence, and therefore have the potential to alter natural dry weather conditions in coastal and marine environments, will not result in significant adverse impacts to the ASBS.

Prior to issuance of the coastal development permit, Special Condition No. 15D requires the applicant to obtain and submit a binding agreement with the Orange County Sanitation District (OCSD) and the Irvine Ranch Water District (IRWD) [Transcript Page 106, lines 2-11] which verifies the District's capacity and commitment to accept dry weather nuisance flows, from Planning Areas 3A, 3B, 4A, 4B, 5,6,12C, 14 and portions of 1C, 2B, 2C, 10B, 11B, 13A and 13F which drain into either Los Trancos Canyon or Muddy Canyon as proposed and generally described herein, from April 15th to October 31st [Transcript Page 102, lines 14 - 19]. of each year, for the life of the project. In order to ensure that the benefits of dry weather diversion at the project site, are implemented in tandem with construction impacts, the applicant is required to construct and implement the diversion system concurrent with the first phase of construction as indicated on the August 9, 2000 phasing plan [Transcript Page 120, lines 23-25 and Page 121, lines 1-18]. Additionally, Special Condition 15C requires the applicant or successors in interest to assume responsibility for the long-term operation and maintenance of the diversion system, and to perform any repairs or improvements necessary to maintain the functional operation of the diversion system consistent with the requirements of Special Condition 15C. Special Condition 15E requires the applicant to execute and record a deed restriction to this effect over the appeal area, which incorporates all of the terms of Special Condition 15C, and which will run with the land binding all successors and assigns to the terms of the restriction.

Due to the importance of this proposed measure in maintaining more natural (unaltered by the introduction of nuisance runoff) water quality conditions in Crystal Cove during the dry-weather season, the Commission finds it is critical to require the incorporation of measures designed to monitor the diversion system to ensure that it is functioning as proposed and therefore that no nuisance flow is discharging onto the beach (directly or via Los Trancos or Muddy Creeks) during the dry season [Transcript Page 196, lines 12-25, Page 197, lines 1-25, Page 198, lines 1-25 and Page 199, lines 1-16].

Special Condition 19 requires the applicant to install flow meter detection devices engineered to ensure that runoff which is proposed to be diverted, is not being discharged onto the beach directly, or by way of Los Trancos or Muddy Creek, as a result of the failure or otherwise inadequate operation of the dry-weather diversion system. Special Condition 19 requires the applicant to have flow meters installed in the wet wells at Los Trancos and Muddy Canyon Creeks and/or in pipes or culverts located downstream of the pump wells as necessary to ensure satisfaction of the criterion identified in Special Condition 19: specifically that they be located at a point where they will be capable of detecting and estimating flow which is discharging onto the beach either directly or indirectly by way of the Creeks.

As stated above, at the public hearing on this matter, August 10, 2000, wherein the Commission imposed Special Condition 19 based on the findings of fact described herein, the Commission determined that it is critical to require the incorporation of measures designed to monitor the diversion system to ensure that it is functioning as proposed, and therefore that no nuisance flow is discharging onto the beach (directly or via Los Trancos or Muddy Creeks) during the dry season [Transcript Page 196, lines 12-25, Page 197, lines 1-25, Page 198, lines 1-25 and Page 199, lines 1-16]. To accomplish this goal, the Commission finds that the flow meters shall be designed to detect flow at a rate of no less than 15 gallons per minute (gpm), based on the following. Exfiltration of groundwater conveyed through slope drains or directly into the existing stormwater conveyance system, and surface runoff from off-site areas such as Pacific Coast Highway, are both existing sources of dry weather flows that are not attributable to the proposed development. The amount of dry-weather flow from these sources is unknown at this time and may fluctuate in response to seasonal, yearly or storm variations. Therefore, in order to ensure that no nuisance flow is discharging to the beach, the limitation on flow includes a threshold, over which the applicant will be required to investigate and document the source of dry weather flow, specifically to determine if the flow is coming from project area Planning Areas specified in Special Condition 19.

Fifteen gallons per minute (gpm) is a rate of flow considered to be within the range of what can be expected from a standard garden hose. The Commission finds that flows in excess of 15 gallons per minute are sufficient to adversely affect Crystal

Cove Beach, and exceed flows that would be expected due to groundwater exfiltration or surface runoff from Pacific Coast Highway. Separate support of this threshold flow rate has also been provided by the applicant's water quality consultant Eric Strecker in a letter dated December 4, 2000, which states that "15 gallons per minute is a flow rate that is a reasonable starting amount [for a flow meter threshold flow], given the small quantity of such a flow [expected at this location]".

Special Condition 19 specifies flow detection response activities, and includes monitoring and reporting requirements. For example, investigation of the source of any water is required in response to flow detection exceeding the threshold level. An additional requirement involves the applicant conducting a site visit during the dry-weather season (each season) to investigate whether flows under the detection limit are coming from the project area, or from other (groundwater or off site) sources. Information from the site visit is to be recorded. The Commission recognizes that due to potential seasonal and yearly fluctuations in existing non-project related dry weather flows, one site visit per season, as is required (or even one per week), may prove to yield results of limited value. Even so, as a supplement to the primary method of monitoring, information gathered from even one physical site visit per season such as this, will involve visual observation, and may prove useful in determining whether the installed flow meters are adequate to effectively monitor permit condition compliance.

Long-term Operation & Maintenance of Structural BMPs

In order to ensure the efficacy of the overall water quality management program, proposed and conditionally required BMPs must be regularly inspected and maintained in effective working condition, for the life of the project. In order to ensure effective implementation and continued long-term management of the structural BMPs associated with the overall water quality management program, the applicant and successor in interest must accept long-term responsibility for such, subject to the criteria set forth in Special Condition No. 16.

Special Condition No. 16 requires maintenance activities to conform to the recommendations contained in the *California Stormwater Best Management Practice Handbooks* and Section 5.2 of the *Newport Coast Planned Community, Crystal Cove Stormwater Quality Evaluation Report*, and requires annual submittal of reports documenting maintenance activities to the Executive Director.

A post-development monitoring plan designed to evaluate BMP efficacy in reducing pollutants in stormwater and thereby protecting the quality of the receiving waters, is also required to be implemented pursuant to Special Condition 16. If pollutants are found in concentrations considered unacceptable by the RWQCB based on applicable standards contained in the California Toxics Rule and the California

Ocean Plan, the applicant is required to assess the potential sources of the pollutants and potential remedies. Based on the assessment, if it is determined that applicable water quality standards have not been met, as a result of inadequate or faulty BMPs, corrective actions or remedies are required [Transcript Page 122, lines 8-21 and Page 126, lines 11-17].

Additionally, in order to address concerns related to the operation and maintenance of structural BMPs, raised in part by State Parks, The Irvine Company has proffered an agreement with DPR, outlined and memorialized in a letter from Daniel Hedigan representing the Irvine Company, to Tim La Franchi representative for DPR, dated July 27, 2000. This letter, along with the DPR letter to Commission Chair Wan dated August 2, 2000, are included as Exhibit 46.

TIC incorporated the agreement set forth in the July 27, 2000 letter, into their project description [Transcript Page 213, line 25; Page 214, lines 1-5]. In order to memorialize the applicant's proposal to incorporate the La Franchi – Hedigan letter, the Commission imposes Special Condition 20.

Water Quality and Marine Ecological Monitoring Plan for the Crystal Cove Development Project

Finally, the WDR Waiver of 401 water quality certification referenced in the beginning of this section, was issued by the RWQCB on the condition that the Irvine Company develop and implement a comprehensive receiving water quality monitoring program, designed to identify any unexpected adverse impacts of the project. The applicant submitted a monitoring plan on January 12, 2000 entitled Monitoring Studies Concerning Water Quality and Marine Ecology for the Crystal Cove Development Project Phases IV-3 and IV-4 (Monitoring Plan). The Monitoring Plan was reviewed and approved by the RWQCB on January 14, 2000. The monitoring program is planned for a 5-year period, and sampling began in December of 1999.

The Monitoring Plan identifies four monitoring stations each in Muddy Canyon, Los Trancos Canyon and Emerald Canyon. Sampling stations are intended to represent four locations within each respective watershed: 1) upstream from significant development or future development, 2) near the mouth of the watershed, but above Pacific Coast Highway, 3) in the surf zone adjacent to the mouth of the watershed and 4) beyond the surf zone where the water is 20 feet deep at Mean Lower Low Water.

The following constituents are included in the Monitoring Plan:

12. SAMPLING AND ANALYSIS FOR PATHOGEN INDICATOR BACTERIA:
Sampling for total and fecal coliforms and enterococci at all stations during storm

and dry-weather runoff. Analysis of additional Orange County data for same study locations and adjacent sites.

13. SAMPLING AND ANALYSIS FOR PHYSICAL CONSTITUENTS OF RUNOFF:
Total suspended solids (TSS), Total dissolved solids (TDS), Freshwater hardness, Salinity, Standard observations of water clarity, color, degree of turbidity, and debris.

14. SAMPLING AND ANALYSIS FOR TRACE (HEAVY) METALS:
Full sampling at all stations for the 7 trace metals cadmium, chromium, copper, lead, nickel, silver, and zinc in both their total and dissolved forms.

15. SAMPLING AND ANALYSIS FOR PESTICIDES:
Full sampling at all stations for 26 organophosphorus pesticide compounds, including chlorpyrifos, diazinon, malathion, and parathion.

16. SAMPLING AND ANALYSIS FOR NUTRIENT CHEMICALS:
Full sampling at all stations for, Nitrate + nitrite, Total Kjeldahl nitrogen, Total phosphorus, Dissolved phosphorus

17. SAMPLING AND ANALYSIS FOR PETROCHEMICALS:
Total recoverable oil and grease at all stations

18. SAMPLING AND ANALYSIS FOR DRY-WEATHER RUNOFF:
Sampling once per month in each watershed exhibiting such runoff. All of the above described microbiological, physical and chemical constituents analyzed.

19. TOXICITY BIOASSAYS FOR STORM RUNOFF:
Acute (48 – 96 hr) toxicity testing using initial runoff water to assess its effects on a freshwater daphniid crustacean indicator species and a marine mysid crustacean indicator species. Testing conducted with water sampled during three representative storm events.

20. TOXICITY BIOASSAYS FOR DRY-WEATHER RUNOFF:
Acute (48 hr) and Chronic (7 day) toxicity testing in which a freshwater daphniid crustacean indicator species is exposed to dry-weather runoff water. Testing conducted 3-4 times per year for each watershed exhibiting runoff.

21. QUANTITATIVE ECOLOGICAL STUDIES OF ROCKY INTERTIDAL HABITATS NEAR MOUTHS OF THE THREE WATERSHED CANYONS:

d) Before and after storms, repeated sampling of the same groups of individuals in mussel and sea anemone indicator species associations (template photo quadrat sampling) to evaluate possible changes in relation to runoff.

e) Before and after storms, repeated sampling of five different indicator species groups (invertebrates and algae). Randomly placed photo quadrats used to determine possible storm-related and other changes in species composition and abundance.

f) Before and after storms, repeated sampling of algal epiphytes (species composition and % cover) living attached to surfgrass. These epiphytes are good indicators of higher than normal nutrient chemical concentrations.

22. QUANTITATIVE ECOLOGICAL STUDIES OF ROCKY SUBTIDAL HABITATS OFFSHORE OF THE THREE WATERSHED CANYONS:

c) Before and after storms, repeated sampling of several different indicator species groups (invertebrates and marine plants. Randomly placed photo quadrats used to determine possible storm-related and other changes in species composition and abundance. Depth 20 ft MLLW.

d) Before and after storms, repeated sampling of algal epiphytes (species composition and % cover) living attached to surfgrass. Depth 20 ft MLLW. These epiphytes are good indicators of higher than normal nutrient chemical concentrations.

Opponents to the development contend that the data collected during the winter of 1999/2000 that is intended to serve as baseline data for evaluating future conditions, is not representative of the natural conditions of the streams and marine environment in an undeveloped state, and therefore is inadequate to serve as baseline data and that analysis of all future results will be skewed based on this.

Los Trancos Canyon has been receiving drainage from developed areas (including residential housing and portions of a golf course) for several years. In addition the marine waters encompassing the Crystal Cove ASBS have been receiving drainage from developed areas via Los Trancos Canyon for several years and from PCH via culverts for at least 50 plus years. In addition, the Commission recognizes the construction project currently underway drains to both Los Trancos and Muddy Canyon, and did so last storm season, therefore ultimately draining to the ASBS. Therefore, the data collected associated with the approved monitoring program can not serve as an accurate reflection of conditions in the ASBS, or Los Trancos Canyon under undeveloped conditions.

In addition, the Commission finds that one-year, let alone one season, of data for any particular ecosystem or biological resource can not produce results that can be considered statistically significant for the purpose of establishing baseline conditions. Therefore the Commission finds that the proposed *Water Quality and Marine Ecological Monitoring Plan for the Crystal Cove Development Project,* designed by Richard Ford, Barbara B. Hemmingsen and Michael. A. Shane, will not serve to provide data which can be used to evaluate alterations as a result of the proposed development ,to Los Trancos Canyon, or the intertidal, subtidal or marine

waters and resources, over natural conditions of these areas when in an undeveloped state.

It is expected however, that the Monitoring Plan will serve to detect and demonstrate if and where exceedances of applicable water quality objectives are occurring provided that the list of monitoring station locations identified in the proposed Monitoring Plan is augmented to include an additional location, at the mouth of the Los Trancos watershed, where sampling of discharge from the 48 inch Reinforced Concrete Pipe (RCP) and 30 inch RCP above the surf zone can occur. Absent this modification to the Plan, important data associated with the composition of discharge from these points, undiluted by ocean water in the surf zone, will not be collected, This information is critical for the purpose of assessing development compliance with the terms and conditions of this permit. Therefore the Commission finds it necessary to require the addition of a monitoring station location at the mouth of Los Trancos watershed, at a point situated above the surf zone, and as more fully described in Special Condition 17 [Transcript Page 202, lines 17-25 and Page 203, 1-25 and Page 204, line 1 and Page 210, lines 13-25 and Page 211, lines 1-24]. Further, based on the sampling locations which include upstream locations in both Muddy and Los Trancos Canyon, and due to the relative confinement of the watershed, it should be possible to isolate relative contributions from the proposed development versus other development in the watershed.

As stated above, the Commission finds that the LCP requires compliance with state, regional and county standards. These standards include those contained within relevant NPDES Permits referenced earlier in this section, the WDR Waiver, also referenced above, the California Toxics Rule (CTR) Standards for Freshwaters of the State, and applicable Ocean Plan standards for ocean waters. This finding is based on project analysis which included a review of relevant water board issued permits and actions, written RWQCB correspondence with the SWRCB (September 20th, 1999 letter referenced earlier in this section), and CCC staff communication with RWQCB staff on 1/10/00.

Neither Muddy Canyon Creek nor Los Trancos Creek have been listed in the Santa Ana Region Basin Plan, and therefore no beneficial uses have been established for either of these creeks. The September 20th, 1999 letter cited above, and referenced earlier in this section, specifies the beneficial uses of the Pacific Ocean, to which these waters are tributary. During a Commission staff communication with RWQCB staff on 1/10/00, RWQCB staff confirmed that when no beneficial uses have been established for a particular water body, the beneficial uses of the waters to which a particular water body is tributary are assumed. RWQCB staff also indicated that beneficial uses of ocean waters and assumed beneficial uses for inland waters such as body contact and non-body contact recreation and Wildlife would be applicable.

The letter states:

> The proposed project will impact Los Trancos Creek and Muddy Canyon Creek, which are tributary to the Pacific Ocean. Neither Los Trancos Creek nor Muddy Canyon Creek are listed in the Basin Plan, and no beneficial uses for these water have been designated. Beneficial uses of the Pacific Ocean include navigation, body contact, and non-body contact recreation, habitat for rare and endangered species, habitat for spawning, marine aquatic habitat, shellfish harvesting and biological habitat of special significance.

The water quality objectives necessary to support the beneficial uses of the Pacific Ocean, where available, are found in the Ocean Plan. The Commission finds that water quality standards applicable to the waters of the Crystal Cove ASBS are contained in California's state-wide Ocean Plan [Transcript Page 119, lines 10-16; Page 120, lines15-22; Page 121, lines 19-25; Page 122, line 1].

Water quality objectives have not been established specifically for Los Trancos Creek or Muddy Creek. However, again, the beneficial uses of the waters to which these creeks are tributary are assumed. Absent specific inland stream water quality objectives for Los Trancos and Muddy Creeks, the Commission finds the applicable water quality standards to be used for evaluating the ability of the aforementioned Creeks to support assumed beneficial uses are those found in the California Toxics Rule standards for Freshwaters of the State, consistent with Federal law (40 CFR Part 131).

Therefore, the Monitoring Plan will serve to document the development's conformance with the State and Local standards and hence conformance with the LCP. If it can be determined by the CCC, the RWQCB, or the applicant, based on monitoring results, that the proposed development is not in compliance with applicable water quality objectives and/or standards, the development will not be in compliance with the conditions of this permit which requires conformance with all applicable State, regional and County standards. Corrective action which may include incorporating additional measures into the development will be required. Any such action or measures will constitute a change to the approved development and will require an amendment to the permit unless the Executive Director determines no such amendment is necessary. Special Condition 17 requires the applicant to submit a final water quality and marine ecological monitoring plan consistent with the specifications of Special Condition 17 to the Executive Director for review and approval. In addition, the applicant is required to submit quarterly reports documenting the results of the monitoring program to the Executive Director pursuant to the specifications of this condition. The Commission will base consultation and coordination with the RWQCB on matters affecting joint responsibilities, on such reports. In addition to the applicant's own reporting obligations, the applicant will be notified by Commission staff in accordance with

standard enforcement procedures if a determination of non-compliance occurs and action on the part of the applicant is required.

Finally Special Condition 17 requires monitoring to be conducted for a period of 5 years, as calculated from a commencement date for monitoring, considered for the purposes of this coastal development permit, to be December 15, 1999. This is the date at which sampling associated with the applicant's water quality monitoring program, required and approved by the RWQCB began, referenced above. The Commission finds the monitoring program approved by the RWQCB is in substantial conformance with the Plan conditionally required by Special Condition 17 of this coastal development permit, and therefore recognizes and accepts the results provided in the *Water Quality and Marine Ecological Monitoring Studies for the Crystal Cove Development Project, First Quarterly Report for 2000* associated with applicants RWQCB approved plan.

Revised Master Drainage and Water Quality Enhancement Program

In order to clearly describe the applicant proposed water quality measures, and to specifically define the water quality related special condition requirements, the applicant's *_Master Drainage and Water Quality Plan – Crystal Cove, prepared by Hunsaker and Associates* (6 sheets) Volume I and II (MDWQEP) dated *(7/24/00,* is referenced in the findings of this report, and in Special Conditions 14-17. However, Commission staff has identified internal inconsistencies within the MDWQEP, and inconsistencies between the MDWQEP and the applicants water quality program described and evaluated in the *Newport Coast Planned Community, Crystal Cove Storm Water Quality Evaluation Report (SWQER), prepared by Peter Mangarella, Eric Strecker, and Seth Gentzler, dated June 14, 2000.* Therefore, Special Condition 18 requires the applicant to submit a revised MDWQEP consistent with the program described in the SWQER and further specified by Special Condition 18, and which clearly illustrates where all runoff from the project is being discharged, and what level of treatment it is receiving, if any [Transcript Page 111, lines 3-19]. Consistent with Special Condition 18, Special Conditions 14-17 refer to the MDWQEP, as modified by Special Condition 18.

Conclusion

The water quality measures proposed by the applicant described herein are consistent with the regulations governing the project as described above. In order to ensure full compliance with those regulations, however, Commission staff recommends eight special conditions be included which pertain to the following subject areas: (1) construction phase runoff control measures; (2) post-construction water quality measures and BMPs; (3) operation and long –term maintenance of the diversion system and other post-construction BMPs; (4) compliance with proposed and

conditionally required water quality monitoring plans; and (5) revisions to the *Master Drainage and Water Quality Plan – Crystal Cove,* (6 sheets) Volume I and II (MDWQEP) dated *(7/24/00.* As conditioned, the Commission finds the proposed development is in conformance with the applicable water quality and resource protection policies of the Newport Coast LCP.

Other LCP Policies Which Protect Water Quality

The LCP contains Erosion, Sediment and Grading Policies in addition to the above cited Runoff Policies that all serve to protect the quality of the marine environment. Although ESHA Policy E states that the LCP Runoff policies provides for the protection of water quality, the Erosion, Sediment and Grading Policies are also clearly aimed at protecting the streams and coastal waters from adverse impacts that can degrade them, inconsistent with their ESHA status. Suspended sediments constitute the largest mass of pollutant loading to receiving waters from urban areas. None of the Erosion, Sediment, Runoff or Grading policies of the LCP specifically address other forms of pollution such as nutrients, oxygen-demanding substances, heavy metals, hydrocarbons or pathogenic bacteria which are also a major problem in urban areas. Although the LCP does not specifically mention these other forms of pollution, they often enter surface waters via runoff that contains sediment and from irrigation and storm water.

Previous sections of this staff report discuss the consistency of the proposed project with the Erosion, Sediment and Runoff Policies of the LCP in terms of the potential impacts to stability of the natural streams and beach nourishment issues within and adjacent to the appeal area. The purpose of this section of the report is to evaluate the proposed project's consistency with the Erosion, Sediment, Runoff and Grading Policies in terms of protecting water quality of the streams and ultimately the off-shore marine environment. As stated the coastal waters of the LCP area are designated both a Marine Life Refuge and ASBS and as such are afforded special protection.

The Erosion, Sediment, Runoff and Grading Policies are contained in the Resource Conservation and Management Policies of the LCP and are duplicated in their entirely in Exhibit 17. The Erosion Policies of the LCP are Section I of the Resource Conservation and Management Policies (Exhibit 17, Pages 25 and 26) Water quality is protected by regulating grading and construction activities, specifically requiring that disturbed soil be reseeded or otherwise covered on a temporary basis in conjunction with grading operations (Policy I.2); that erosion control devices be installed in a timely manner and properly maintained throughout clearing, grubbing and grading operations (Policy I.3); and that when grading operations occur during the rainy season (October 15 to April 15) that erosion control measures be in place

by October 15 and that grading be carried out consistent with the County of Orange Grading Code (Policy I.4).

The Sediment Policies of the LCP are found in Section J of the Resource Conservation and Management Policies of the LCP (Exhibit 17, Pages 26-28) . Sediment Policies J.1, 2, 3 and 5 require that structural and non-structural sediment control devices and techniques be designed and employed for grading operations in a timely manner and maintained to prevent sediment from leaving the site with storm water runoff. Such devices include, but are not limited to hay bales, berms, sand bags, debris basins, desilting basins, silt traps, temporary and permanent hydroseeding and planting. Sediment catch basins and other erosion control devices are also required to be constructed and maintained in accordance with the County of Orange Grading Code (Policy J.5).

The Runoff Policies of the LCP are found In Section K (Exhibit 17, pages 28-29). The Runoff Policies require that drainage facilities be properly designed and constructed (K.2); that stormwater runoff be directed to storm drains or suitable water courses to prevent damage to graded slopes (K.3); and that retention basins be maintained (K.4). The Grading Policies are found in Section L of the LCP Resource Management Policies. The grading policies require that soils engineering and geologic studies, where necessary be prepared assessing the potential for slope instability, and seismic impacts, and that a grading schedule be provided showing when each stage and element of the project will be completed, including the total area of soil surface to be disturbed during each stage of grading, among other things (L.1) ; requires that all grading activities occurring between October 15 and April 15 shall be subject to the Runoff, Erosion, Sediment and Grading Policies of the LCP (L.2); prohibits the placement of any materials other than drainage improvements and erosion control modifications in the 100year flood-plain of coastal waters and streams (L.4.c); requires that all completed cut and fill slopes be stabilized through planting of native or appropriate non-native plants, under the direction of a licensed landscape architect (L.6); and requires that removal of natural vegetation be limited to graded areas, access haul/roads and areas required for fuel modification (L.7).

The applicant has submitted grading plans, including grading phasing for some areas. However Grading Policy L.1 requires that this information be required for all grading activities. Therefore special condition 8 is being imposed to require complete grading plans and information as required by the LCP. Special condition 5 is being imposed because the applicant has not included the specific construction BMPs on the grading plans or a separate erosion control plan that will be implemented in order to prevent degradation of the habitat values of the coastal waters. Only as conditioned as required in special conditions 5 and 8 and the water quality special conditions (14-17) is the proposed project consistent with the Erosion, Sediment, Runoff and Grading Policies of the LCP, protecting the sensitive

off-shore marine resources and public access and recreation on the public Crystal Cove State Beach.

Section M of the Resource Conservation and Management Policies of the LCP contain the fuel modification policies. Section M is entitled "Development/Open Space Edges Policies (Exhibit 17, pages 31-35). The purpose of the fuel modification policies is to ensure that development located adjacent to natural habitat areas, which are often high fire danger areas, is sited to protect open space and habitat values while at the same time assuring fire safe development. The LCP policies require certain fuel modification standards and techniques for development adjacent to PA 17 and 12A. PA 17 is Crystal Cove State Park and PA 12A is a conservation open space area that has been dedicated to the County of Orange and is also part of the NCCP Preserve. Several of the Planning areas of the proposed project are adjacent to PA 17 and 12A. The LCP also requires that project developers acknowledge that they are developing in a fire hazard area and requires the annual maintenance of fuel modification zones.

Specifically, fuel modification Policy M.7.d. requires that fuel modification plans be prepared and submitted as a condition of approval of the coastal permit. The goal of the plan is to protect as much of the existing native vegetation as possible. In no event is thinning of more than 30% of native vegetation to extend beyond 170 feet from the outward edge of residential structures (or 150 feet from the 20-foot backyard setback) in extreme fire hazard potential areas. Further, fuel modification in the extremely hazardous zones shall not occur beyond 250 feet from the 20-foot backyard setback. In the low fire hazard areas fuel modification shall not occur more than 175 feet.

The applicant contends that the proposed development is consistent with the above fuel modification policies, that no fuel modification will occur in Crystal Cove State Park, PA 17 or in the NCCP Preserve PA 12A, and that they have consulted with the Department of Parks and Recreation in the preparation of the fuel modification and landscaping plans. To ensure this consistency, special condition number 9 requires the applicant to submit final fuel modification plans that are consistent with the above policies of the LCP and that the submitted plans be reviewed and at a minimum, conceptually approved by the Orange County Fire Authority. Only as conditioned is the proposed project, consistent with the applicable policies of the LCP (Addendum, p.44, #20).

Changes due to development

The ESHA Category A and B, as well as the Sediment, Runoff and Erosion Policies of the LCP address changes to the natural channels due to development. Both physical impacts to streams due to fill are addressed as well as impacts due to increased rate of flow and changes in the movement of sediment (Exhibit 17). While the LCP polices address increases in the peak rate of runoff in the stream courses and changes in sediment movement, no policies specifically address changes in the volume of water going through the streams independent of the

effects of the rates of discharge and the movement of sediment, which is usually carried by water. A strict interpretation of the first sentence of ESHA Policy D.1.is that no changes at all can occur to Category "A" and "B" segments of the natural streams and tributaries (Exhibit 17, page 18-19). However, this interpretation is not supported by the remaining language of the policy. The policy allows physical modifications to the Category "A" and "B" ESHAs for drainage and erosion control facilities if needed to protect the stream or to support new development as well as fill for roads, if done in the least environmentally damaging manner and no feasible alternative exists. Additionally, the Runoff Policies specifically require that stormwater be directed to the streams or storm drains which normally outlet in stream courses and that the streams be rip rapped or somehow stabilized. Change in the sediment movement in the streams is addressed in terms of potential instability of the stream course and not on the biological impacts (Sediment Policy J. 4.). It is a given fact that development adjacent to the streams will result in an increase in volume of runoff in the streams and tributaries.

Development of the Newport Coast will result in physical changes that potentially could result in environmental impacts to nearshore marine habitats. As a result of development, there will be alterations in the volume and periodicity of stream discharges, and changes in the sediment load of streams.

The qualitative changes in the hydrology of the two water courses will be similar. During intense storms when natural infiltration of water is low, there will be little change in runoff. The runoff from low and medium intensity storms will increase due to the increase in impervious surfaces and there will be summer flows due to irrigation. The rate of peak discharge of flows resulting from storms of various return periods (up to the 100-year storm) will seldom exceed existing conditions at either Los Trancos or Muddy Creek and will never exceed existing peak discharge rates by more than 7% at any point within those streams.[5] The proposed development will result in a about a 7% decrease in storm flow volumes and essentially no change in flow duration at Los Trancos Canyon because development will shift a portion of the watershed to Muddy Canyon. On the other hand, there will be a slight increase in dry weather flows due mainly to irrigation.[6] In Muddy Canyon, storm flow volumes and duration will increase substantially[7] and there will be a large increase in dry weather flows.[8] The increased runoff in Muddy Canyon will be about 60% of the total annual runoff volume, whereas the contribution from

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[5] Tettemer & Assoc. 2000. Newport Coast planned community proposed runoff management plan hydrologic analysis. A report to the Irvine Company dated April 2000; Exhibit 24 (Addendum, p.45, #21)Table of peak discharge for various return periods from Tettemer.

[6] Hamilton, D.L. 2000. Projected water balance for Los Trancos Canyon, Crystal Cove Area, California. A report to LSA dated April 20, 2000.

[7] Tettemer & Assoc. 2000. *op. cit.*

[8] Hamilton, D.L. 2000. Projected water balance for Muddy Canyon, Crystal Cove Area, California. A report to LSA dated April 20, 2000.

irrigation will amount to about 40% of the existing annual runoff volume. Dry weather flows will be captured near the Pacific Coast Highway and diverted to the sewer system.

In addition to the changes in volume and periodicity of the stream discharges, there will be changes in their sediment load. As a result of the increases in impervious surfaces and the conversion of natural vegetation to lawns, there will be a reduction in sediment supply. It is estimated that there will be a reduction of about 76% in the yield of silts and clays, and a reduction of about 17% in the yield of sand-sized and larger materials.[9]

Potential impacts to coastal marine habitats.

Five benthic habitat types are present in the nearshore area of the Newport Coast. These are sandy and rocky intertidal areas, sandy subtidal areas, low relief rocky subtidal areas that have periodically supported giant kelp forests, and high relief subtidal outcrops or "hogbacks." In addition, the water column supports a variety of marine mammals and a diverse assemblage of fishes. The biodiversity and high quality of these marine habitats was the basis for the declaration of this section of coast as an Area of Special Biological Significance by the California State Water Resources Control Board. The importance of these habitats also is attested by the fact that the California Department of Fish and Game has designated three areas along this section of coast as Marine Life refuges.

Nearshore marine communities could be affected by large changes in salinity, increases in sedimentation, and chronic increases in turbidity. Since there will be a substantial decrease in the discharge of fine sediments after the project is completed, there is no reason to expect a long-term increase in either turbidity or sedimentation. However, there has been some concern that the yield of fine sediments might be increased temporarily during the several years of construction. There have been no quantitative estimates of such a change. Shallow-water and intertidal habitats are unlikely to be significantly impacted because fine particles remain in suspension due to wave action and are carried off shore by currents. Near shore turbidity plumes following storms are natural annual phenomena and have not been shown to have significant deleterious effects on beach communities. The habitat most at risk from increases in sediment discharge is low-relief rocky reef that could support giant kelp. Currently, there are no kelp forests in the project area. The local kelp beds disappeared during the 1982-1984 El Niño and have never recovered.[10] Much of the low relief substrate apparently was buried by sand during a series of El Niño storms and the sand has been trapped by local

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[9] Chang, H.H. 2000. Sediment yield study for Muddy Canyon and Los Trancos Canyon. A r
[10] MBC. 2000. The status of kelp beds at Newport Coast and their relationship to the kelp bed along the Orange County Coast. A report to the Irvine Company dated April 2000;

topography. A recent survey indicated that sand cover was still high, there were moderate populations of other brown algae, and no giant kelp.[11] Suitable conditions for giant kelp recruitment apparently have been lacking for 16 years. If conditions were to become suitable for kelp recruitment, large increases in suspended sediments due to construction activities could have negative effects. The recruitment and growth of giant kelp can be impaired if turbidity chronically reduces light levels and the settlement and survival of the small life stages of kelp can be reduced if sediments cover rocky substrates. Therefore, Condition 5 and conditions 11-18 require (Addendum, p.45,#22) that Best Management Practices be employed to insure that water quality is not significantly impaired by construction.

The discharge of freshwater through Muddy Canyon will increase as a result of development. However, the resulting local changes in ocean salinity are unlikely to have negative effects on marine organisms. Significant negative effects of freshwater have been reported where the flow is directly over rocky intertidal areas.[12] Local influxes of freshwater can result in severe mortality, particularly of lower intertidal organisms such as sea urchins.[13] Such events are relatively uncommon and there is no opportunity for such catastrophic exposure to freshwater near the mouth of Muddy Canyon since the nearest rocky intertidal area is about 300 feet away. Generally, considerable mixing with seawater takes place when freshwater enters the ocean. Intertidal organisms are well adapted to cope with these natural reductions in salinity following storms. There is no reason to expect that the predicted changes in flow patterns in Muddy Canyon will result in conditions of lowered salinity so severe as to cause negative impacts to intertidal populations.

Changes in Riparian Communities.

The small hydrologic changes predicted for Los Trancos Canyon are unlikely to have measurable effects on the physical or biological environment. However, the predicted changes in Muddy Canyon are likely to result in alterations in the flow characteristics of portions of the stream and in the vegetative characteristics of the riparian corridor. The pertinent changes will be increases in groundwater recharge volume, increases in the volume and duration of flow from storm events of all return periods, and substantial dry weather nuisance flows from irrigation. Overall, the increase in storm water discharge will be equivalent to 60% of existing flows and the dry weather flows from irrigation will be equivalent to 40 % of existing

[11] Deysher, L.E. 2000. The potential effects of coastal development on subtidal kelp resources. A report to the Irvine Company dated June 16, 2000.
[12] Ford, R.F. 2000. Evaluation of water quality and marine ecological issues concerning freshwater runoff into the Irvine Coast Marine Life Refuge Area of Special Biological Significance. A report to the Irvine Company dated April 20, 2000.
[13] Dr. S. C. Schroeter, UCSB, personal communication.

flows. However, except for the graded slope in area M2r[14], the runoff from development adjacent to and immediately upslope from the Pacific Coast Highway (PCH) enters Muddy Canyon just upstream of the PCH culvert and therefore will have little effect on the canyon.

It is not clear what proportion of the 100% increase in annual flows will come from the development at the head of the canyon (Planning Areas 2C & 5) but, based on a visual examination of the areas of development, is likely to be on the order of 50%. This increase in flow will have the most significant effects on Muddy Canyon and its riparian habitat. Most of the potentially negative effects will be confined to the area above the existing agricultural pond. This agricultural pond in the upper portion of the canyon was created by a high berm across the canyon that will not be altered. The pond is dry much of the year. However, after rainstorms it probably acts as a retention basin for most flows. LSA predicts that water reaching this pond will be lost through evapotranspiration and groundwater recharge.[15]

At the east end of the berm, several feet above the level of the agricultural pond there is a deep ravine that discharges into the stream below the berm. Following extreme rainfall events, the agricultural pond would act as a detention basin with excess water flowing out through the ravine. Due to the presence of the berm and agricultural pond, most of the predicted change from intermittent to perennial flow will occur in the approximately 700-foot reach of Muddy Creek immediately upstream. Currently the agricultural basin in dominated by weedy herbaceous species that are common in wet areas, such as stinging nettle, tree tobacco and cocklebur. The drainage immediately upstream from the agricultural pond also supports arroyo willow and mulefat, typical riparian species. Farther up the canyon, the stream course is narrow and coastal sage scrub grows down the steep sides to the edge of the stream. The increase in flow volume and change to perennial flow will probably result in an increase in riparian vegetation, conversion of some coastal sage scrub to willow and mulefat, and perhaps conversion of some streambed habitat to emergent wetland vegetation. Perennial nuisance flows may also result in an increase of weedy herbaceous vegetation in some areas. Condition 2 requires that runoff from development, including all storm flow runoff and (Addendum, p.45, #24)summer nuisance flows, be discharged to the section of stream above the agricultural basin. This would be accomplished by not constructing the planned 6-inch low-flow diversion pipe in the small canyon toward the south end of Planning Area 5. Discharging (Addendum, p. 45, #24)development runoff to the upper reach of the stream will prevent increases in surface flow within the long central reach. The flow in the reach of stream below the agricultural berm is expected to remain intermittent. However, of the total amount of intermittent

[14] Tettemer & Assoc. 2000. *op. cit.*

[15] LSA. 2000. Analysis of coastal drainages and wetlands - comparative history and likely future habitat conditions in Muddy Canyon. A report to the Irvine Company dated April 20, 2000.

stream in Muddy Canyon, about 78 % is expected to become wetter to an unknown degree.[16] Below the agricultural basin this change in water regime is expected to take the form of an elevation of the water table and an increase in seep and spring flows. Although the effects of this increase in available water can not be predicted in any detail, there will probably be a gradual increase in the abundance and diversity of woody riparian vegetation such as willow, alder, sycamore, and coast life oak. This is a much more natural shift in vegetation than that which would be caused by introducing perennial surface flows to this area. The predicted changes in vegetation will probably be reflected in an increase in the local abundance and diversity of wildlife.

GEOLOGIC HAZARDS

Policy L1 of the certified Local Coastal Program requires that the applicant submit soils engineering and geologic studies that assess potential soil-related constraints and hazards such as slope instability, settlement, liquefaction, or related secondary seismic impacts. Portions of the project are also located in a high fire hazard area (Transcript, p.16, line 5) Policy L1 also requires that approved development incorporate the mitigation measures recommended in the reports generated by these studies. This section describes staff's findings related to geologic hazard issues. Geologic issues involving grading, erosion and sedimentation are discussed in separate sections of this report.

Slope Stability

The proposed project lies on a moderately steep hillside adjacent to the coast. The proposed development is on a ridge oriented approximately north-south, perpendicular to the coast, lying between two north-south-trending canyon systems—Los Trancos Canyon to the west and Muddy Canyon to the east. The overall slope of the hillside is moderate (5-10%), but side slopes in the two canyons and its tributaries may be steep to very steep (up to 1:1, or 100%). The geologic conditions are conducive to slope instability, in that many slopes expose bedding planes or other planes of weakness that dip outwards from the slope. Further, the southern half of the area is underlain by the Monterey Formation, a geologic unit known to be susceptible to landsliding. In fact, the area itself is known to be subject to landsliding, and numerous active and inactive landslides have been mapped (Addendum, p.45, #25) by the applicant's geotechnical consultants. Detention basins are planned for planning area 5 and 6 that have the potential to hold storm water on the site, potentially leading to increased infiltration of water into fill slopes, raising additional slope stability concerns.

[16] LSA, 2000. op. cit.

The applicant proposes massive grading for both remediation of identified landslides and for construction of building pads. Detailed grading plans and geotechnical investigations have been provided for planning areas 5, 6, and 2C (Transcript, p.17, line 18-20), and for part of Planning area 4B. However the grading plans do not include, among other things, a schedule showing each grading stage, estimated starting and completion dates, the total area of soil surface to be disturbed during each stage of grading, and the location of all on-site stockpiling, as required by the Grading Policies of the LCP. Therefore, only as conditioned to require the submittal of revised grading plans containing this required information is the project consistent with the certified LCP (Addendum, p.46, #26).

Policy L.1 of the LCP requires full geotechnical investigation for all areas to be developed. The geotechnical reports demonstrate that the proposed grading will mitigate for problems of slope instability, and provide plans for establishment of keys, mechanically stabilized earth (MSE) buttresses, and drainage devices to insure stability of the manufactured slopes. Staff finds that the natural, cut, and fill slopes proposed should be stable provided that all of the recommendations and designs contained within the June 6, 2000 report by NMG Geotechnical, the August 6, 1999 and August 30, 1999 reports by Goffman, McCormick and Urban, and the Leighton and Associates letter of 16 June, 2000 are followed during construction. Therefore, the Commission imposes Special Condition 11.

The applicant has not provided detailed grading plans or slope stability analyses for planning area (Addendum, p.46, #27) 4A, part of planning area 4B, or for PA 12C (Transcript, p.17, line 12 - page 18, line 1). Accordingly, special conditions 7 and 8 are imposed, requiring the applicant to submit, for the review and approval of the Executive Director, geotechnical analyses demonstrating the stability of the final grading designs consistent with specified criteria prior to issuance of a Coastal Development Permit. If the stability of the final grading plans cannot be established consistent with the specified criteria or modifications to the grading plan prove to be necessary, an amendment to the Coastal Development Permit will be required. The applicant requested that the Commission issue the subject coastal development permit in phases subsequent to the completion of slope stability analysis and detailed grading plans for PA 4A, 12C and the remainder of PA 4B. The Commission finds that such a phased release of the permit is impermissible.

However, the Commission modifies special conditions 7 and 8 to require slope stability analysis and grading plans at a scale of 1:100 for the proposed residential and recreation planning areas (4A, 4B and 12C) and at a scale of 1:40 for the fire access road that connects the lower planning areas with the upper areas of the project site. With this modification to the special condition, the applicant would be able to submit compliance documents and plans prior to the issuance of the permit and without a lengthy delay. The Commission notes that a slope stability analysis and grading plans at 1:40 have already been prepared, but not yet submitted to

staff, for PA 12C. (Transcript, p. 38, line 23 - p.39, line 1; p. 111, line 20 - p.112, line 10; p.118, line 8 - p. 119, line 1).

Seismic Hazards

The proposed project is not crossed by traces of active faults as defined by the Alquist-Priolo Act. The closest active fault is the Newport-Inglewood fault, located approximately 4 miles southwest of the site. This fault is considered capable of producing a large (magnitude 6.9) earthquake, that would subject the subject site to severe ground shaking. Ground shaking could lead to landsliding, but the slope stability analyses described above assure a reasonable factor of safety (1.1) even for these conditions. Liquefaction is not considered a significant hazard, since the groundwater table is not near the surface nor is it expected to be near the surface even if it is raised by post-development irrigation or other changes in hydrology. Fault rupture hazard is considered low because no known active faults cross the development. A hypothetical fault, the San Joaquin Blind Thrust Fault, has been postulated to exist below the San Joaquin hills and could extend beneath the site. No microearthquakes associated with this fault have been identified historically. This fault, if it exists, is too poorly understood to be used as a design basis.

The most significant seismic hazards at the site are severe ground shaking associated with a major earthquake on one of the many nearby faults, and seismically-induced landslides. The former may be mitigated for by conformance to appropriate California Building Code regulations. Seismically-induced landslides are unlikely provided that the recommendations and designs contained within the June 6, 2000 report by NMG Geotechnical, the August 6, 1999 and August 30, 1999 reports by Goffman, McCormick and Urban, and the Leighton and Associates letter of 16 June, 2000 are followed during construction as required by special condition 11.

Additionally, the Commission attaches Special Condition No. 4 which requires the landowner to assume the risks of extraordinary fire, (Transcript, p.16, line 5) erosion and geologic hazards of the property and waive any claim of liability on the part of the Commission. Given that the applicants have chosen to implement the project despite these risks, the applicant must assume the risks. In this way, the applicant is notified that the Commission is not liable for damage as a result of approving the permit for development. The condition also requires the applicant to indemnify the Commission in the event that third parties bring an action against the Commission as a result of the failure of the development to withstand hazards. In addition, the condition ensures that future owners of the property will be informed of the risks, the Commission's immunity from liability, and the indemnity afforded the Commission.

F. Use of Balancing in Conflict Resolution

The Commission can approve development that is inconsistent with the certified LCP only if it finds that the approval of the development raises issues of conflict between two or more LCP policies and that, on balance, the project as approved is most protective of coastal resources. The LCP policy conflicts which arise in this application is the LCP policies which concentrate development in the designated residential and recreational development planning areas and the fact that ESHA designated wetlands are found in the residential planning area 4A which neither the LCP or the Coastal Act or the appellate court decision in Bolsa Chica would allow to be filled.

Section 30007.5 of the Coastal Act provides the Commission with the ability to resolve conflicts between Coastal Act as well as LCP policies. When the Commission certified the Newport Coast LCP it did so based on this Coastal Act provision. As detailed in the LCP Balancing Provisions section of this staff report, the certified LCP, as amended, relies on Coastal Act Section 30007.5 in allowing the development of 2,150 acres of the 9,493 acre LCP area with residential, recreational and tourist commercial uses while requiring that 7,343 acres or 77% of the LCP area be designated and reserved for open space (public and private conservation, recreation and park) uses. In approving the LCP which allows development on 2,150 acres the Commission recognized that some of this area contained environmentally sensitive habitat areas such as streams, and their associated riparian wetlands, coastal sage scrub and other sensitive grassland communities, and scenic hillsides. However, the Commission found that the coastal resources of the LCP area were, on balance, best protected by concentrating allowable development in certain areas while preserving large expanses of the most environmentally sensitive vegetation and wildlife areas, natural landforms, cultural resources and the provision of new public access and public recreational opportunities. Pursuant to the Land Dedication Policies of the LCP, the Commission imposes special condition 13 requiring the applicant to submit evidence that an offer to dedicate fee title to PA 12E has been made to the County of Orange and an offer to dedicate fee title to PA 12G has been made to the County or the California Department of Parks and Recreation for public open space, habitat, and recreational purposes.

The Commission again relies on the balancing provision of the Coastal Act, which is incorporated into the LCP, in approving the fill of 0.05 acres of seasonal wetlands which is otherwise inconsistent with the certified LCP, the Coastal Act, and the appellate Court decision in Bolsa Chica. Section 30007.5 of the Coastal Act provides that:

> *The Legislature further finds and recognizes that conflicts may occur between one or more policies of the division. The Legislature therefore declares that in carrying out the provisions of this division such conflicts be resolved in a*

manner that on balance is the most protective of significant coastal resources. In this context, the Legislature declares that broader policies which, for example, serve to concentrate development in close proximity to urban and employment centers may be more protective, overall, than specific wildlife habitat and other similar resource policies.

A. Conflict. In order for the Commission to utilize the conflict resolution provision of Section 30007.5, the Commission must first establish that a substantial conflict between two statutory directives contained in the certified LCP exists. The fact that a project is consistent with one policy of the certified LCP and inconsistent with another policy does not necessarily result in a conflict. Rather, the Commission must find that to deny the project based on the inconsistency with one policy will result in coastal zone effects that are inconsistent with another policy.

In this case, as described above, the proposed project is inconsistent with the environmentally sensitive habitat policies of the certified LCP because the proposed fill of 0.05 acres of seasonal wetlands is not allowed in the Resource Conservation and Management Policies of the LCP which defines all wetlands as ESHA and does not provide for their fill, except for under limited circumstances. This finding is also supported by the appellate court decision in Bolsa Chica Land Trust v. Superior Court. As noted above, given the existence of newly discovered wetlands and the omission of LCP policies that authorize permissible fill, the Commission finds that, in light of the Bolsa Chica decision, the County's LCP must be interpreted consistent with Section 30233 of the Coastal Act. However, to deny the project based on this inconsistency with the Resource Conservation and Management Policies of the LCP would not allow the concentration of proposed residential development contiguous with otherwise approval residential development. The Commission clearly found in the certification of the LCP that it was environmentally preferable to allow the fill of certain streams and associated riparian wetlands in order to concentrate development than to preserve each wetland area.

It is noted that the wetland in question did not exist at the time of LCP certification. The subject wetland area is actually made up of four isolated wetland depressions (two adjoining) in three locations. The wetlands are isolated and are not connected to a stream or any other water source. They were created by ranchers when cattle were grazed on the property and are located at one of the highest elevations on the site. The Commission staff biologist agrees that the wetlands serve basically as a water source for wildlife into the early annual dry season summer because they retain rainwater. The vegetation, though hydrophytic, is of marginal value and the non-native grasses and forbs surrounding the wetland invade it when the water dries up in the summer.

The Commission notes that the applicant is proposing to mitigate the fill of the seasonal wetlands at a ratio of 4:1. It should also be noted that the replacement

seasonal wetlands will be located in a 290 acre NCCP preserve area (PA 12 E) and permanently dedicated for conservation open space use. As such the wetlands will serve a similar function of providing a water source for wildlife. However, the location of the replacement wetlands is environmentally superior containing high quality native vegetation compared to the existing wetland setting adjacent to invasive non-native exotic annual herbs and grasses.

The Commission also notes that the development of PA 4A is tied to a comprehensive hydrological regime including sediment and erosion control and water quality measures, and the need to do a substantial amount of remedial grading to correct adverse geologic conditions. To require that the wetlands be left in place would require substantial revisions to the proposed project which is otherwise consistent with all other applicable policies of the certified LCP.

The proposed project also provides additional resource benefits over and above those required in the LCP with the extension of the proposed water quality enhancement program to retrofit areas outside of the project area. In addition, the proposed project will divert dry weather nuisance flows both inside and outside of the project area. If the Commission were to deny the project based on the project's inconsistencies with the LCP wetland fill provisions, significant water quality impacts would not be reduced. Therefore, the Commission finds that the proposed project creates a conflict among Coastal Act policies.

B. Conflict Resolution. After establishing a conflict among Coastal Act policies, Section 30007.5 requires the Commission to resolve the conflict in a manner that is on balance most protective of coastal resources. In this case, the proposed project would result in the fill of 0.05 acres of isolated seasonal wetlands.

There are important factors in the Commission's use of the conflict resolution provisions of Section 30007.5 that, in this particular case, create a unique situation. The Commission relied on Section 30007.5 when it originally certified the LCP and twice amended it as discussed in earlier in this staff report. The purpose for the balancing in this particular application is, in part, for the same purpose of the original LCP balancing.

The proposed project includes wetland fill that is inconsistent with the wetland policies of the certified LCP. However, the proposed project also includes 4:1 mitigation for the wetland impacts and replaces the new wetlands within a habitat conservation area where it will be surrounded by high quality habitat instead of the invasive non-native plant material currently surrounding the existing wetlands. Thus, the mitigation site is likely to provide more viable habitat than currently exists in the isolated wetland area to be impacted.

The proposed project also provides additional resource benefits over and above those required in the LCP with the extension of the proposed water quality enhancement program to retrofit areas outside of the project area. In addition, the proposed project will divert dry weather nuisance flows both inside and outside of the project area. The additional water quality benefits include (1) for PAs 3A, 3B, 4A, 4B, 5, 6, 12C, 14 and portions of 1C, 2B, 2C, 10B, 11B, 13A, and 13F, the diversion of nuisance flows from April 15th to October 31st [Transcript Page 102 lines 14-19]. of each year to the publicly owned treatment works, ((2) for PAs 2C, 3A, 3B and 14, advanced street sweeping and litter pick-up and homeowners education regarding non-point source pollution for the residential portions of those PAs; (3) for PA 14, a grassy swale and (4) for Pas 3A, 3B, and 14 storm flows from will be routed either through drainpak catch basin filter insert devices or to the water quality treatment extended detention basin (Basin 6) [Transcript Page 208, lines 1-24].

These additional benefits are not required by either the LCP or Permits and are significant water quality benefits. The details of the water quality enhancement program are discussed elsewhere in this report. The Commission therefore finds that the proposed project would have significant resource benefits.

In resolving the identified Coastal Act conflict, the Commission finds that the concentration of development in the area proposed for residential development, in PA 4A is, on balance, more protective of the land resources than to require that they be retained in an area adjacent to residential development. Therefore, the Commission finds that approving the project is, on balance, most protective of coastal resources.

This finding that approving the project is most protective of coastal resources is based on the assumption that the wetland mitigation site will be constructed as proposed and as conditioned and maintained in perpetuity. This finding is also based, in part on the assumption that the water quality enhancement program will be extended to retrofit areas outside of the project area and will be continually managed and maintained in the designed manner in the future. Should either the constructed water pollution control facilities not be managed and maintained as designed, or the mitigation site not be implemented as proposed and as conditioned herein, the benefits of the project would not be realized. Therefore, the Commission attaches special conditions 1, 5 and 14 through 20 to ensure that the desired result is achieved; these have been discussed in detail in the previous findings addressing biological resources and water quality. The Commission finds that without the special conditions, the proposed project could not be approved pursuant to Section 30007.5 of the Coastal Act.

G. California Environmental Quality Act

Section 13096 of the Commission's Code of Regulations requires Commission approval of coastal development permit applications to be supported by a finding showing the permit, as conditioned by any conditions of approval, to be consistent with any applicable requirements of the California Environmental Quality Act (CEQA). Section 21080.5(d)(2)(A) of CEQA prohibits a proposed development from being approved if there are feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse effect which the activity may have on the environment.

The Commission incorporates its findings on conformity with LCP policies at this point as if set forth in full. For the reasons described in the Commission findings above, the proposed project, as conditioned, will not cause significant adverse impacts to the environment. Specifically, the Commission has required mitigation measures to enable the Commission to find the proposed project, as conditioned, consistent with the biological resources, stream sediment, beach nourishment, geologic hazards, slope stability and water quality policies of the certified LCP. There are no feasible alternatives or mitigation measures available which would substantially lessen any significant adverse impact which the activity might have on the environment. Therefore, the Commission finds that the proposed project is the lease environmentally damaging feasible alternative and can be found consistent with the requirements of the Coastal Act to conform to CEQA.

APPENDIX A

SUBSTANTIVE FILE DOCUMENTS

1. Irvine Coast (Newport Coast) Certified Local Coastal Program.
2. Local Coastal Development Permit Record No. PA 97-0152).
3. Master Drainage and Water Quality Enhancement Program, NCPC, revised December 10, 1999
4. Southern Coastal Needlegrass Grassland Restoration Plan, Crystal Cove/Newport Coast Phases IV-3 and IV-4, revised December 14, 1999.
5. Wetland/Riparian Mitigation Plan, Crystal Cove/Newport Coast Phases IV-3 and IV-4, revised May 16, 2000.
6. Substantial Issue staff report and Commission findings, A5-IRC-99-301(Irvine Community Development Company), 9/2/99
7. California Department of Fish and Game, 1603 Agreement No. 5-212-99, Irvine Community Development Company, as amended July 17, 2000.
8. California Water Resources Control Board, Waiver of Waste Discharge Requirements and Water Quality Certification for the proposed Crystal Cove/Newport Coast Phases IV-3 & IV-4 Project, (ACOE Reference No. 980071600-YJC), September 30, 1999.
9. Third Party Independent review of Hydrologic, Sediment Yield and Coastal Processes Results and Conclusions for Newport Coast Phases IV-3 and IV-4 Appeal, Ronald M. Noble, Noble Consultants, Inc. and Professor Robert L. Wiegel, June 28, 2000.
10. Newport Coast Phases IV-3 and IV-4 Appeal, Technical Reports, Community Development Company, August, 2000.

NEWPORT COAST

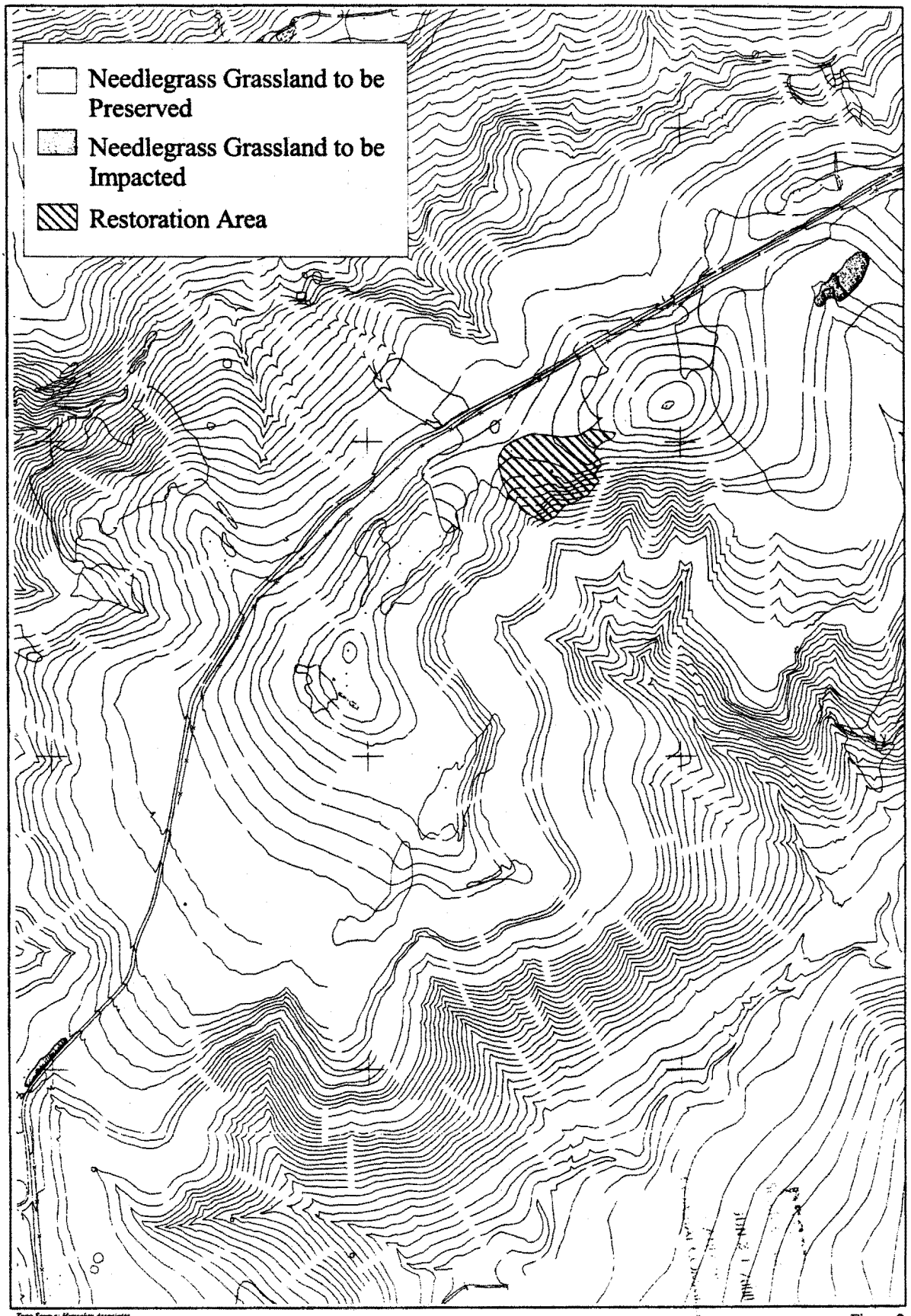
RECEIVED
South Coast Region
DEC 16 1999
CALIFORNIA
COASTAL COMMISSION

Project Location

FORMA
December 1999

Ex. 1

A5-IRC-99-301



Topo Source: Hunsaker Associates

(11/23/99) I:\ICD736\GIS\vegetation.apr - Needlegrass Grassland

N

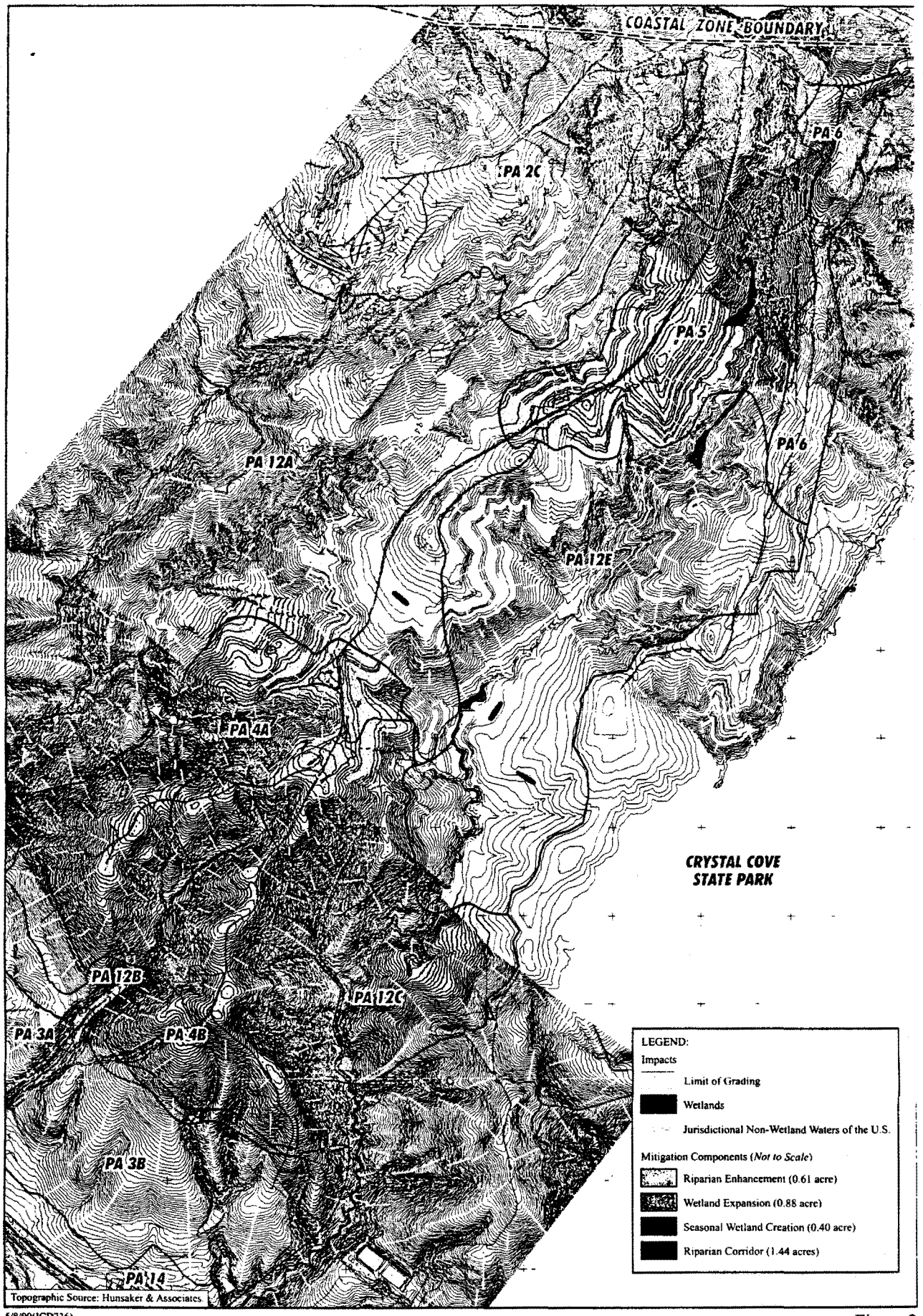
LSA

300 0 300 Feet

Figure 2

Ex. 2

Purple Needlegrass Grassland
Restoration Area



5/8/00(ICD736)

Figure 2

N

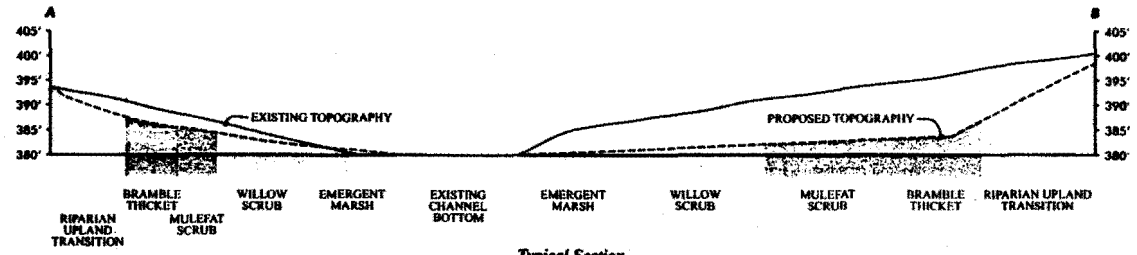
LSA

Scale in Feet

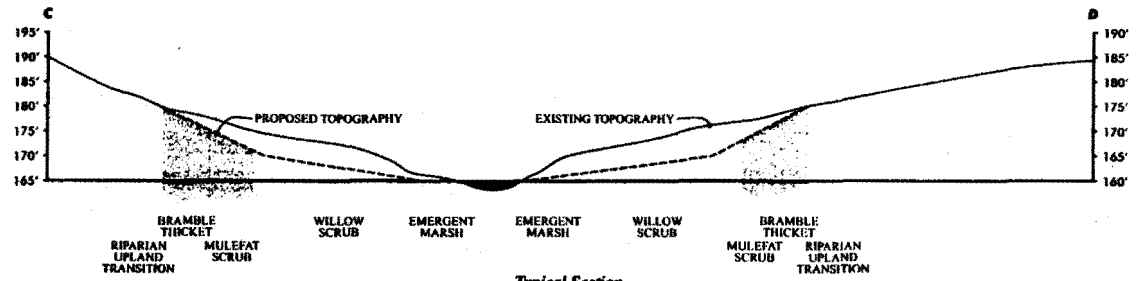
0 500 1000

Ex. 3, p.1

Wetland/Riparian Mitigation Areas



Typical Section
Wetland Expansion Upstream of Ranch/Edison Road



Typical Section
Wetland Expansion Upstream of Detention Basin

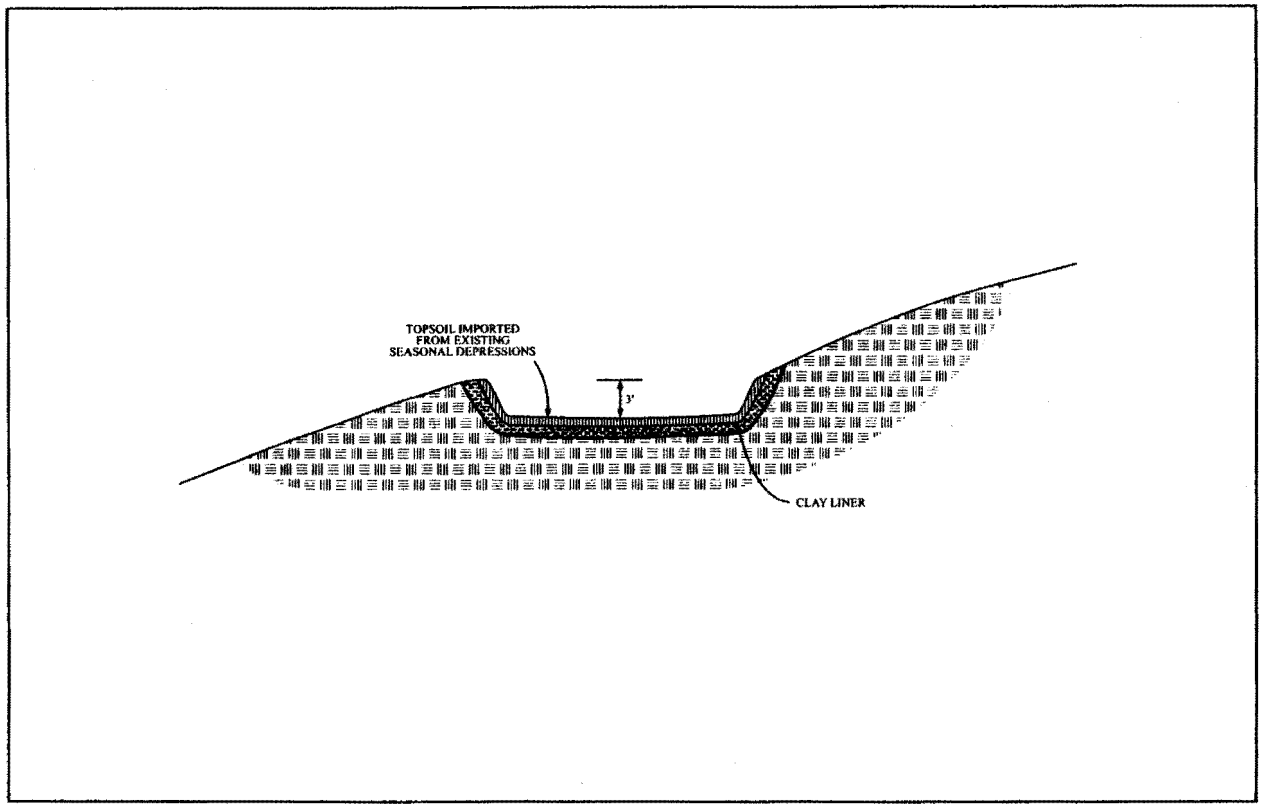
11/22/99(ICD736)

Figure 5

Ex. 3, p.2

LSA Scale in Feet 0 25

Representative Plans for
Wetland Expansion Areas



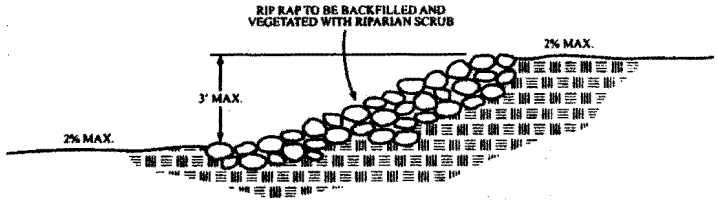
11/22/99(ICD736)

Figure 6

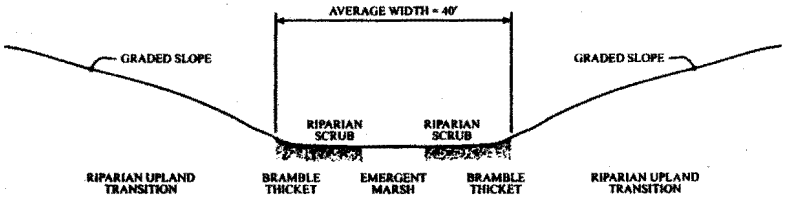
Ex. 3 p. 3

LSA Not to Scale

Representative Plan for
Seasonal Wetland Creation Areas



Drop Structure



Typical Cross Section

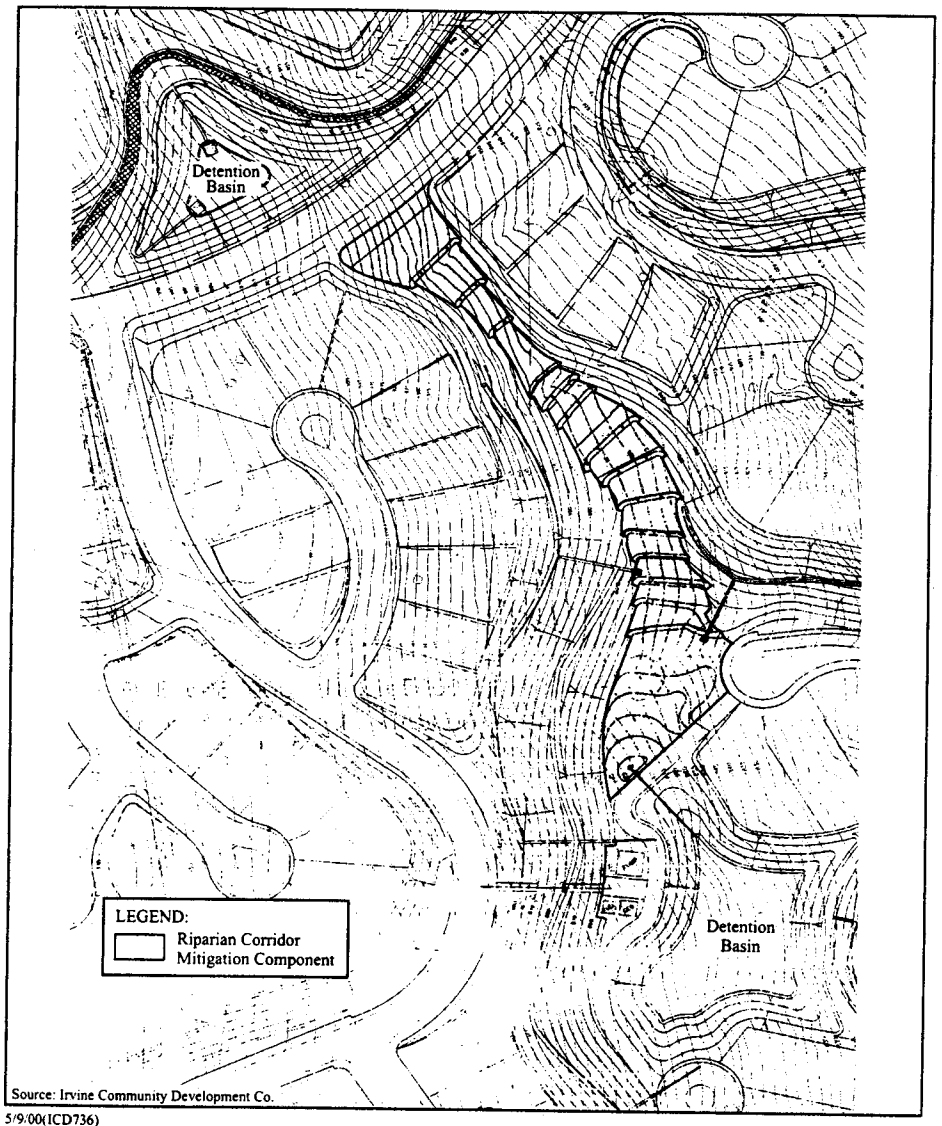
11/22/99(ICD736)

Figure 7

Ex. 3, p.4

Representative Plan for
Riparian Corridor

LSA Scale in Feet 0 25



Source: Irvine Community Development Co.

5/9/00(ICD736)

Figure 8

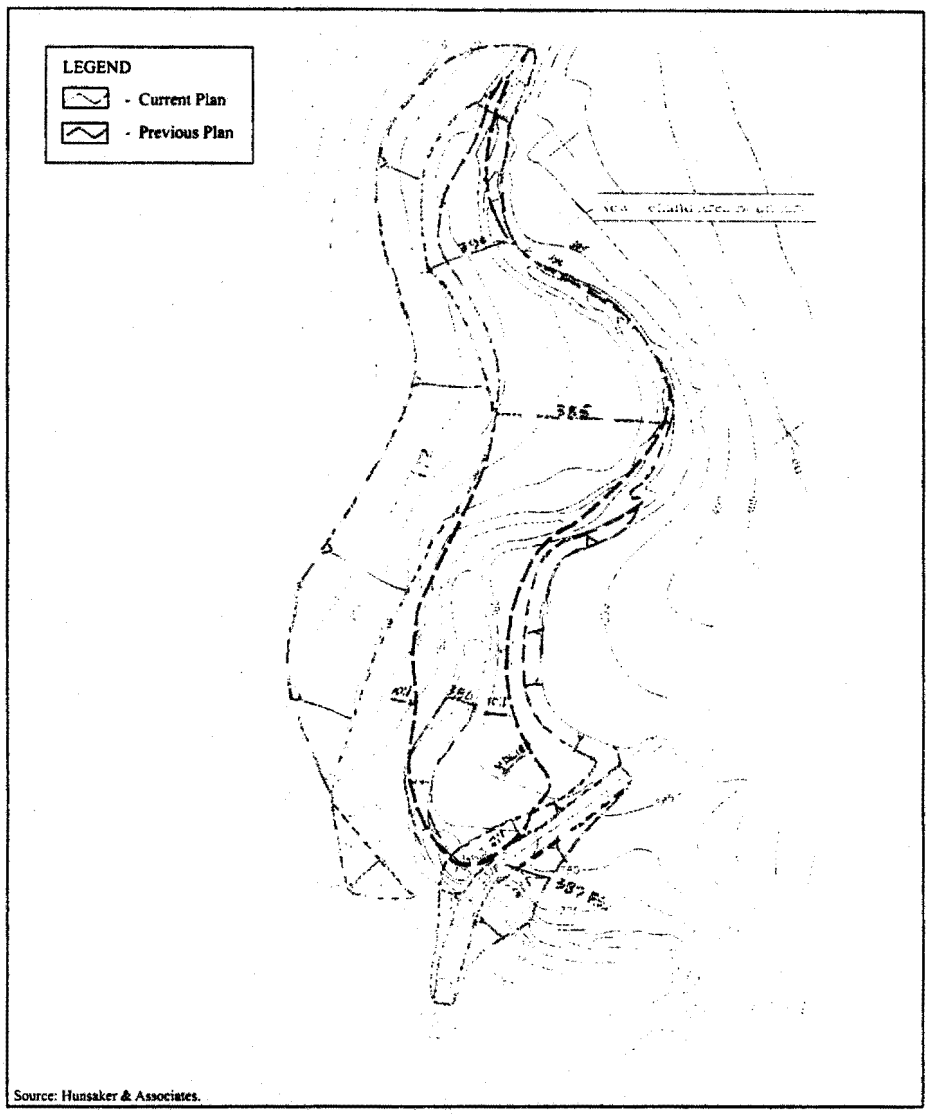
Ex. 3, p. 5

LSA

Scale in Feet

0 75 150

General Grading Concept for Riparian Corridor



Source: Hunsaker & Associates.

5/8/00(ICD736)

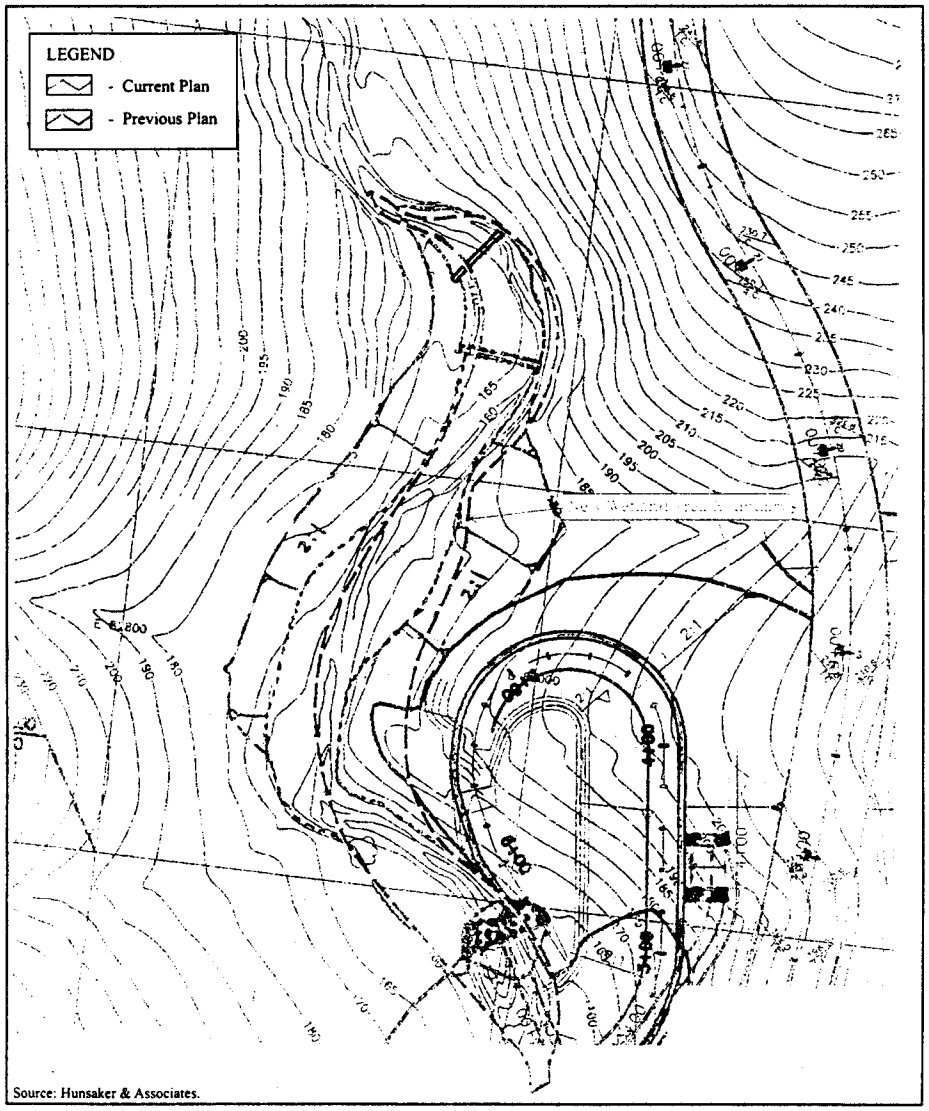
Figure A1

Ex. 3, p.6

LSA

Scale in Feet
0 35 70

Plan Comparison
Grading of Wetland Expansion Areas -
Edison Road Crossing



Source: Hunsaker & Associates.

5/8/00(ICD736)

Figure A2

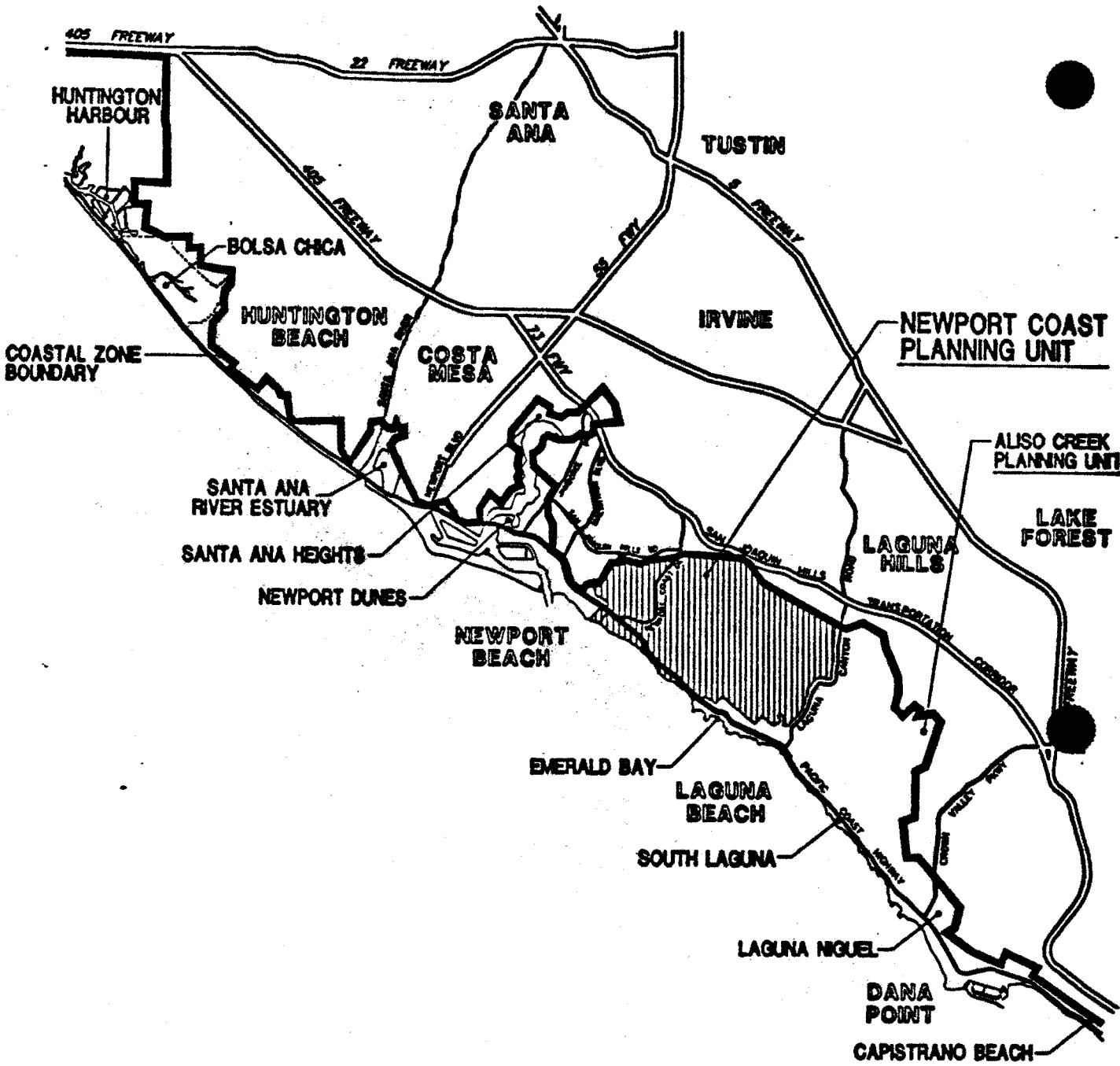
Ex. 3, p.7

N

LSA

Scale in Feet
0 40 80

Plan Comparison
Grading of Wetland Expansion Areas
Muddy Canyon Recreation Center Access



LOCATION MAP - Second Amendment

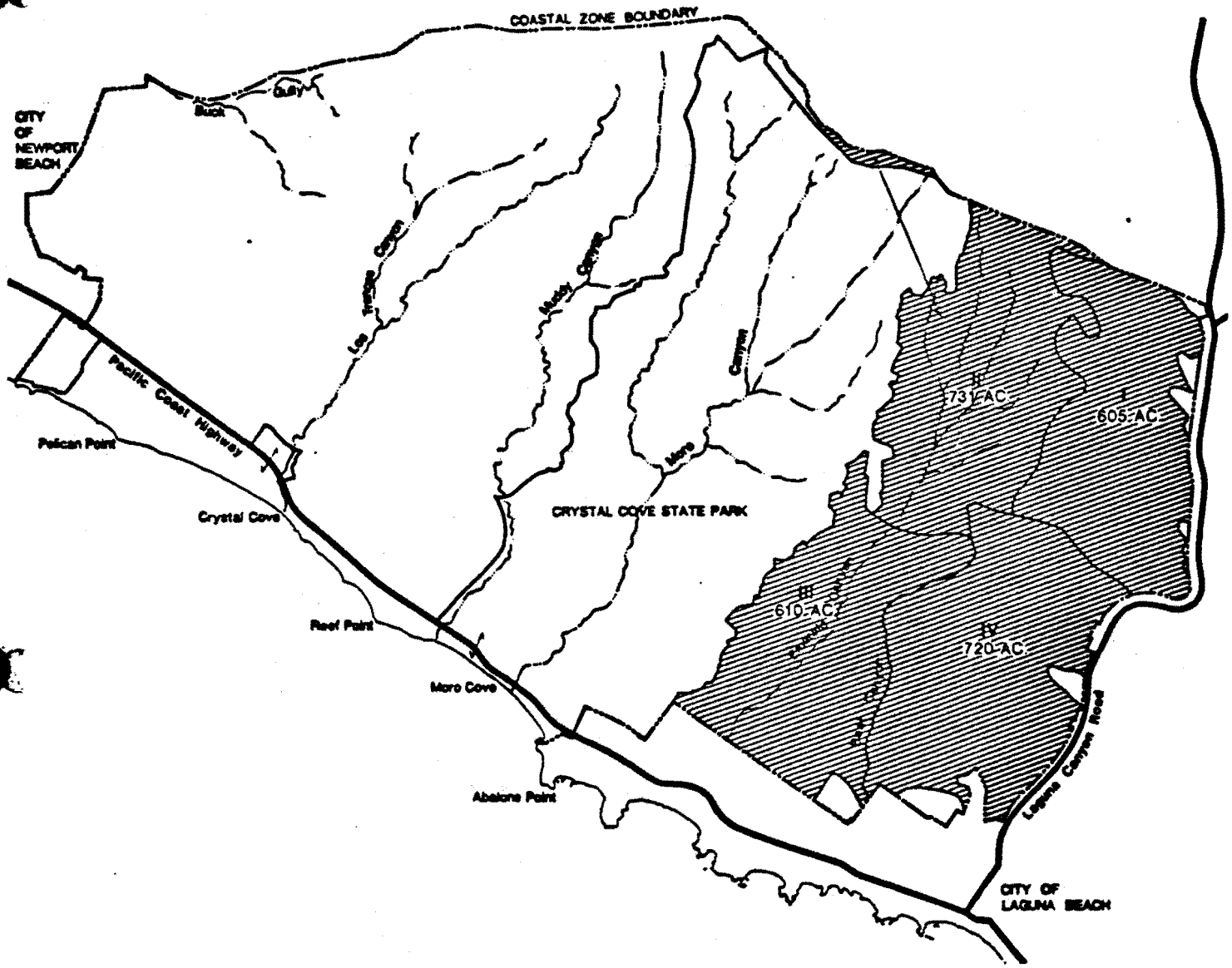
The Newport Coast Local Coastal Program

Exhibit A

NOT TO SCALE

JULY 16, 1990

Ex. 4



WILDERNESS DEDICATION AREA

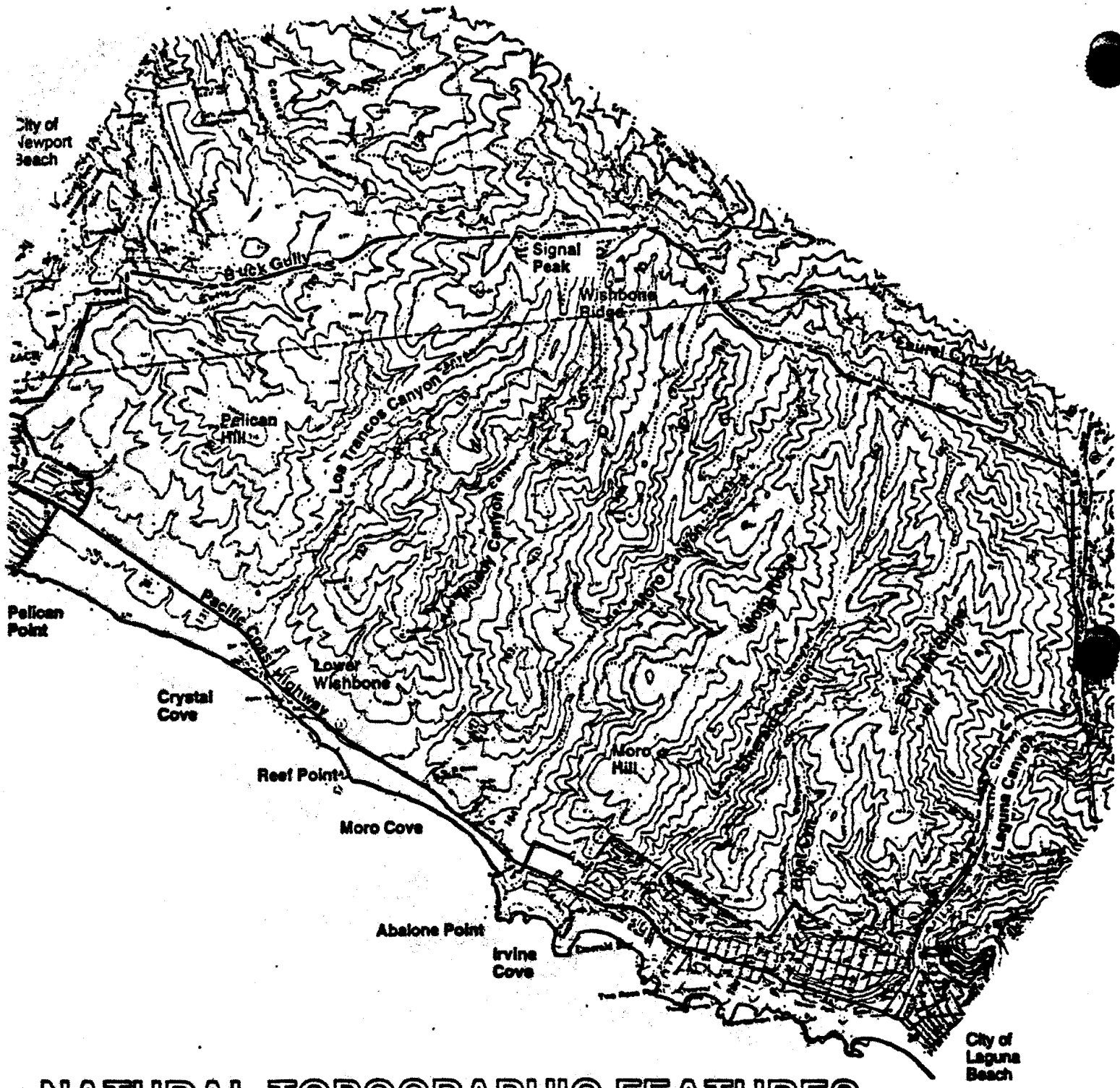
The Irvine Coast Local Coastal Program

LEGEND

MANAGEMENT UNIT AND SEQUENCE NUMBER

Ex. 5

Exhibit I



NATURAL TOPOGRAPHIC FEATURES-
Second Amendment

Exhibit B

The Newport Coast Local Coastal Program

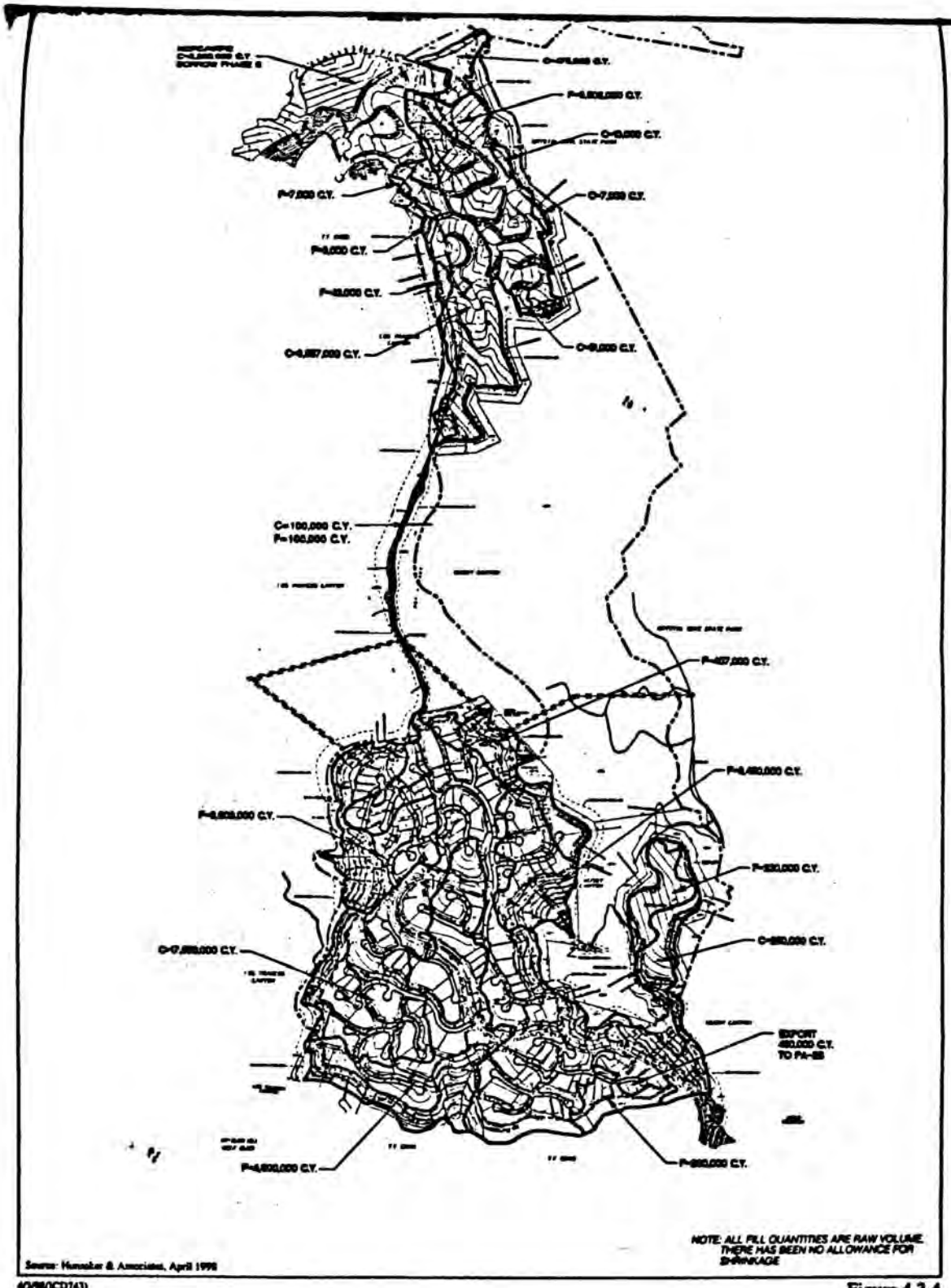
0 2000 4000

JULY 18, 1988

LEGEND

PLANNED COMMUNITY BOUNDARY

Ex. 5A



Source: Hunsaker & Associates, April 1998

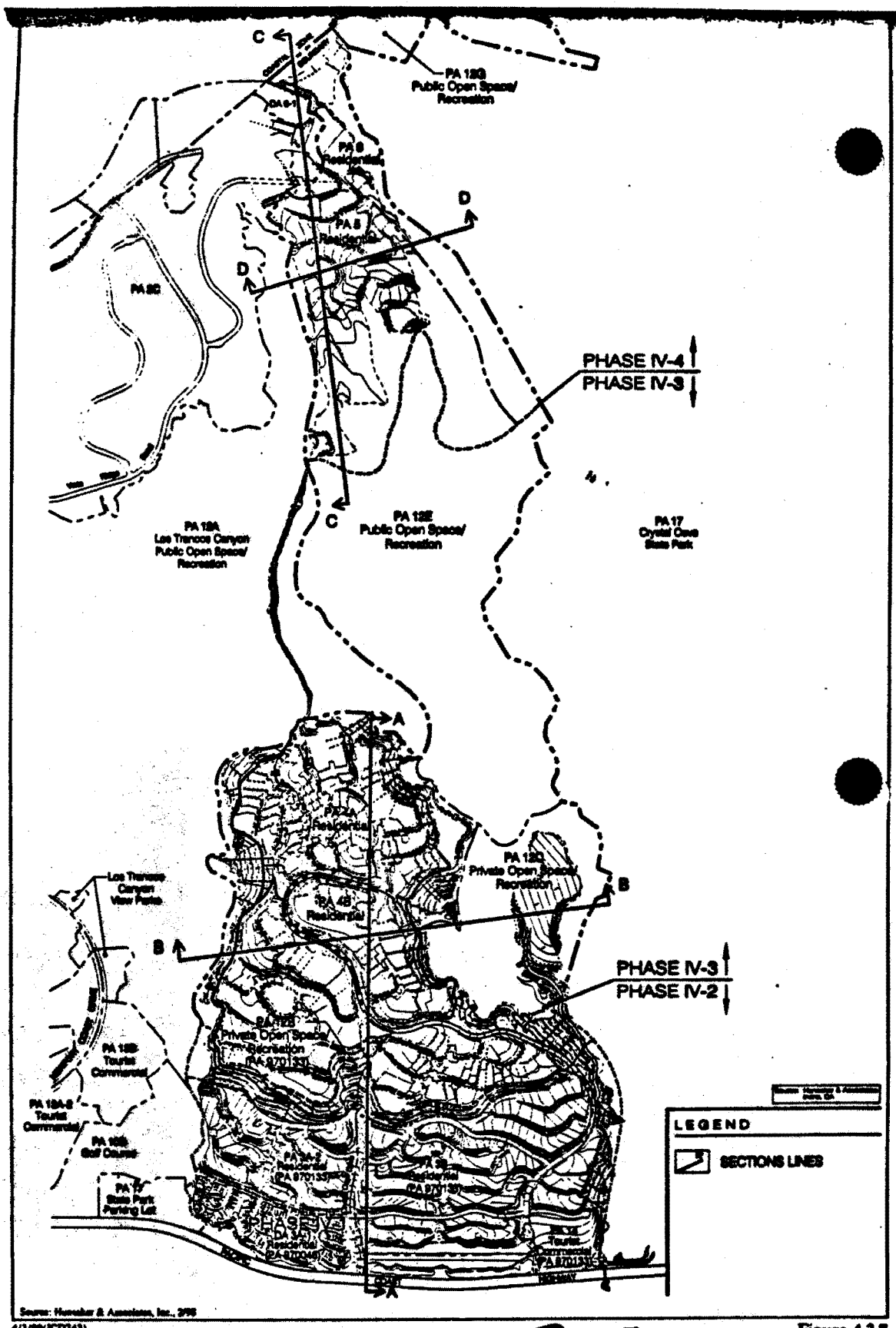
4/3/98(CD743)

Figure 4.3.4

Ex 6

LSA

Cut and Fill Locations



Source: Hunsaker & Associates, Inc., 2/98

4/3/98(ICD743)

Figure 4.3.7

Ex. 7

LSA

Scale in Feet

0 580 1160

Key Map - Development S[redacted]s

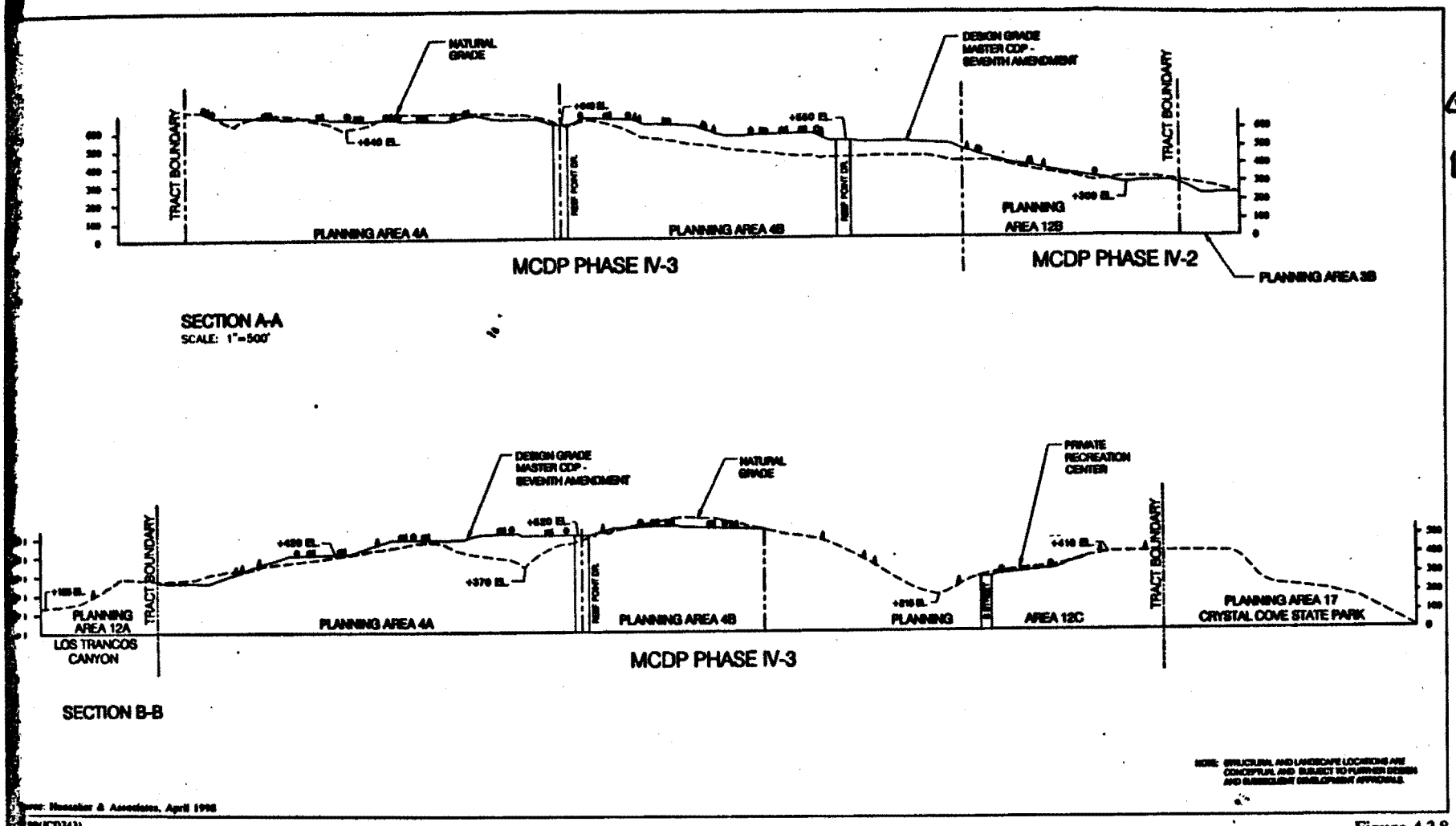
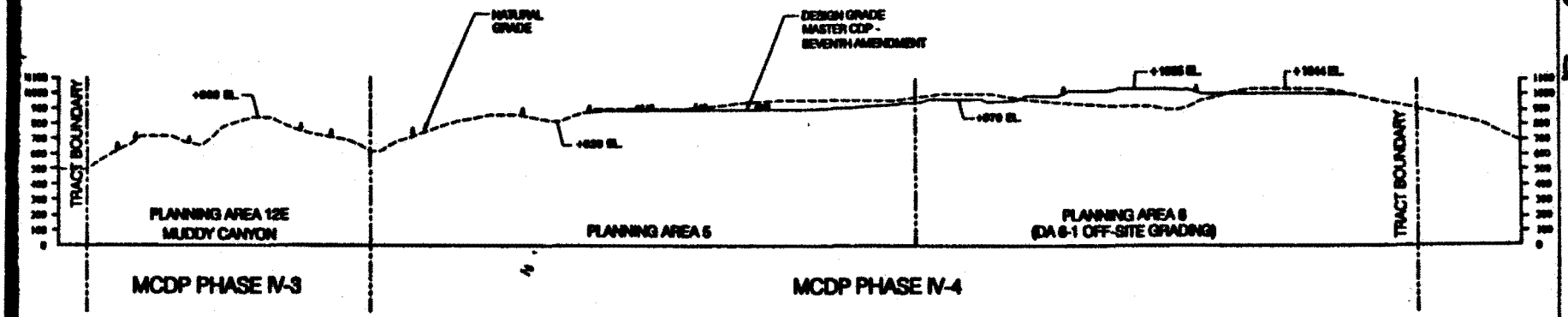
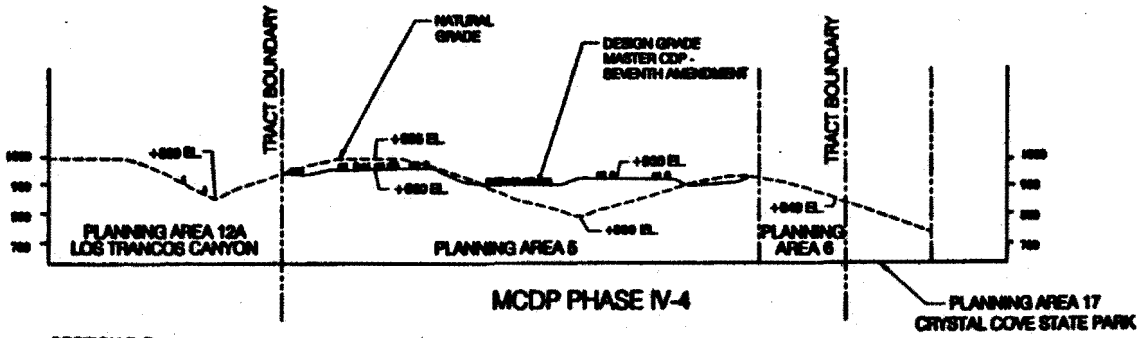


Figure 4.3.8

Development Sections A-A and B-B



SECTION C-C



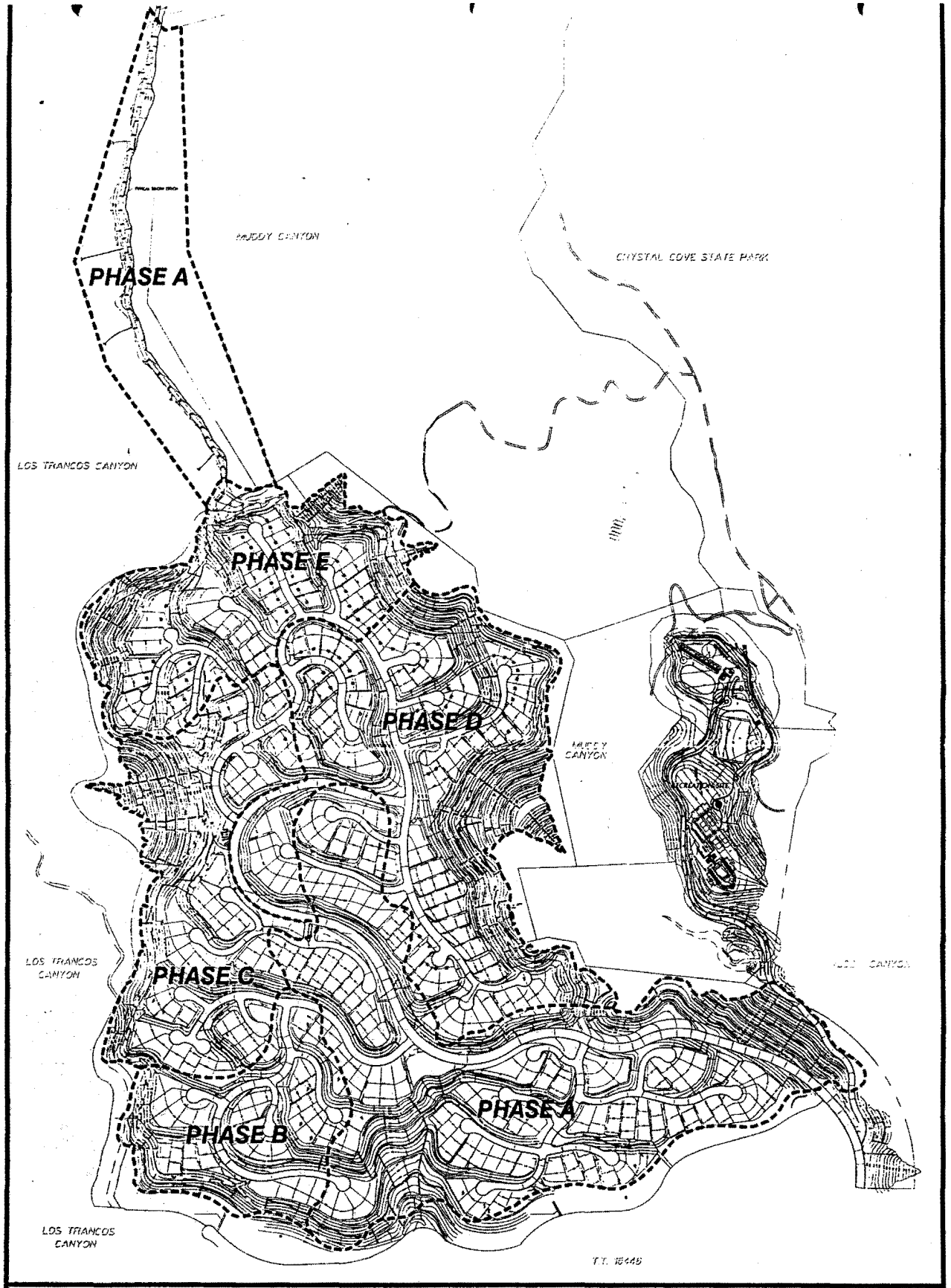
SECTION D-D

Source: Hunsaker & Associates, April 1998

Figure 4.3.9

LSA

Development Sections C-C and D-D



CRYSTAL COVE

Grading Phasing Exhibit

EX. 10

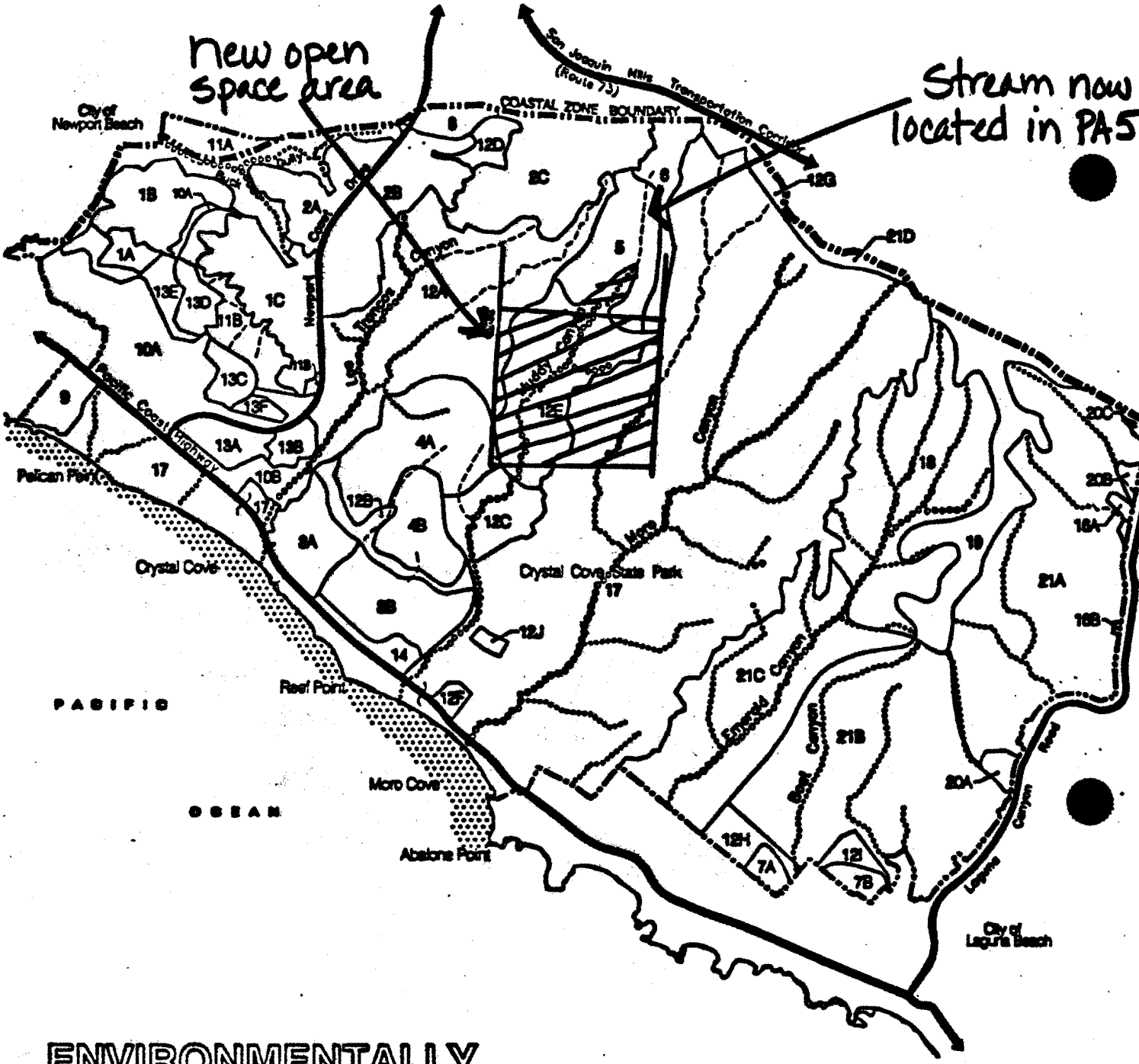
PREPARED FOR:

IRVINE COMMUNITY DEVELOPMENT COMPANY
A Division of The Irvine Company
550 Newport Center Drive
Newport Beach, CA 92660

PREPARED BY:

HUNSAKER & ASSOCIATES
IRVINE, INC.
PLANNING • ENGINEERING • SURVEYING
Three Hughes • Irvine, CA 92618 • PH. (949) 583-1010 • FX. (949) 583-0759

DATE: 5/21/99



ENVIRONMENTALLY SENSITIVE HABITAT AREAS - Second Amendment

Exhibit H

The Newport Coast Local Coastal Program

0 2000 4000

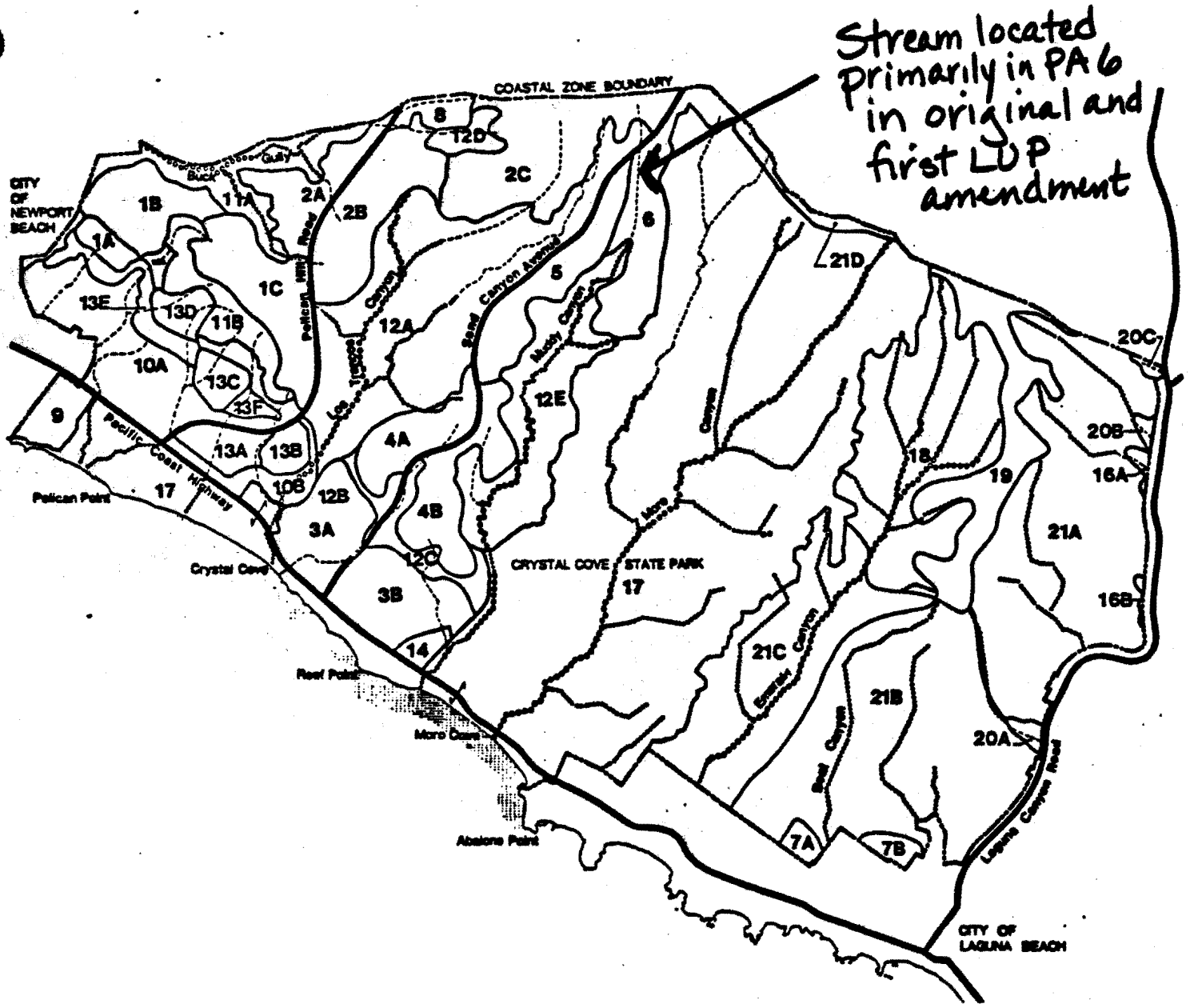
JULY 15, 198

LEGEND

- CATEGORY A - DRAINAGE COURSE/RIPARIAN VEGETATION
- CATEGORY B - DRAINAGE COURSE
- CATEGORY C - COASTAL WATERS
- CATEGORY D - DRAINAGE COURSE
- COASTAL ZONE BOUNDARY
- PLANNED COMMUNITY BOUNDARY
- PLANNING AREA BOUNDARY
- 7B PLANNING AREA

Ex. 11

Note: Category D ESHAs have been deleted in areas with previously approved Coastal Development Permits or permitted by land use policies and mitigated by the Riparian Habitat Creation Program.



ENVIRONMENTALLY SENSITIVE HABITAT AREAS

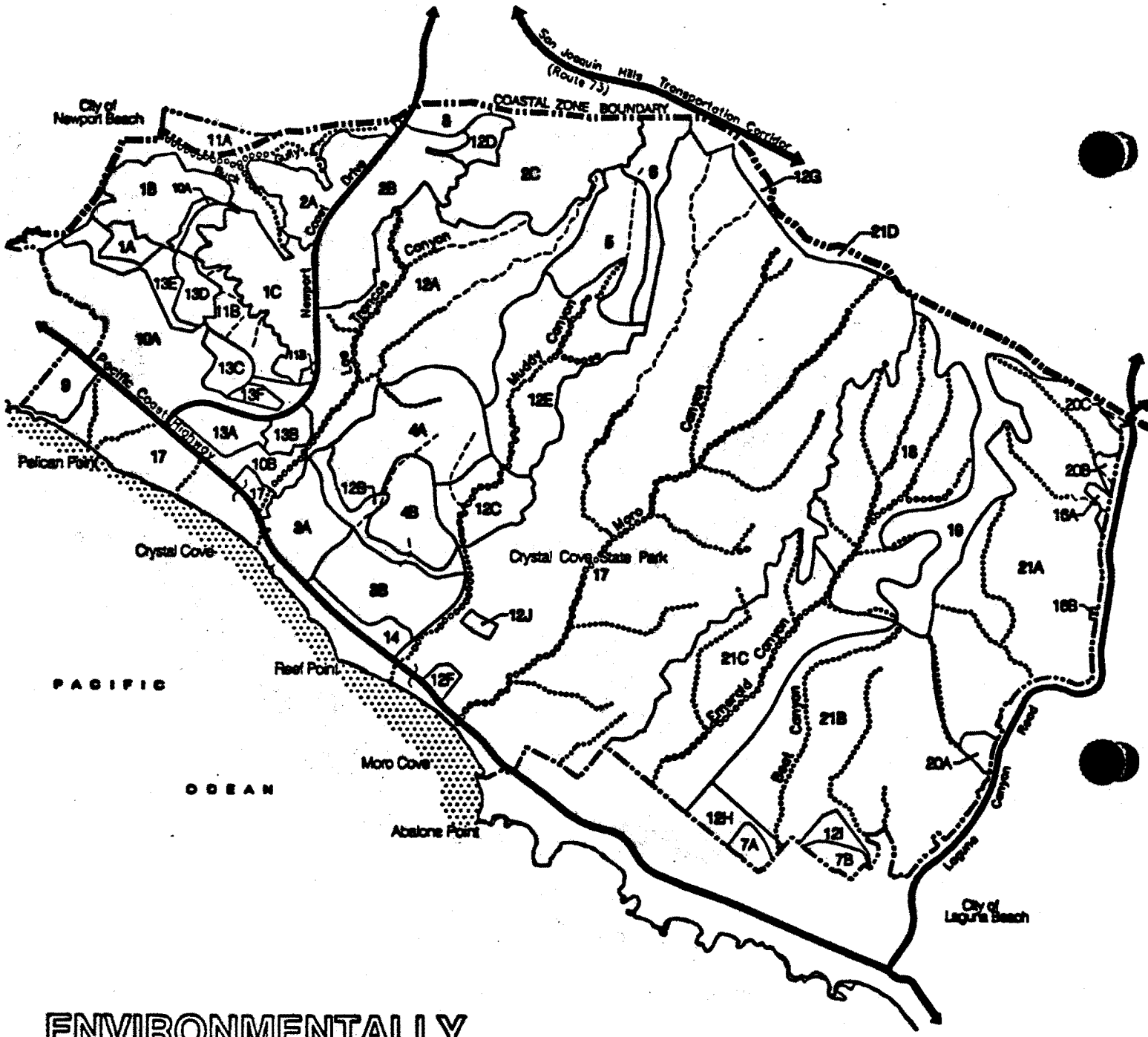
The Irvine Coast Local Coastal Program

LEGEND

- CATEGORY A - DRAINAGE COURSE/RIPARIAN VEGETATION
- CATEGORY B - DRAINAGE COURSE
- CATEGORY C - COASTAL WATERS
- CATEGORY D - DRAINAGE COURSE
- PLANNING AREA BOUNDARY

Ex. 12

Exhibit H



ENVIRONMENTALLY SENSITIVE HABITAT AREAS - Second Amendment

Exhibit H

The Newport Coast Local Coastal Program

0 2000 4000

JULY 16, 1986

LEGEND

- CATEGORY A - DRAINAGE COURSE/RIPARIAN VEGETATION
- CATEGORY B - DRAINAGE COURSE
- CATEGORY C - COASTAL WATERS
- CATEGORY D - DRAINAGE COURSE
- COASTAL ZONE BOUNDARY
- PLANNED COMMUNITY BOUNDARY
- PLANNING AREA BOUNDARY
- 7B PLANNING AREA

Ex 13

Note: Category D ESHAs have been deleted in areas with previously approved Coastal Development Permits as permitted by land use policies and mitigated by the Riparian Habitat Creation Program.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

RECEIVED
JUN 17 1999
REGULATORY BRANCH

JUN 4 1999

Colonel John P. Carroll, District Engineer
US Army Corps of Engineers
P.O. Box 532711
Los Angeles, CA 90053-2356

Attention: Jae Chung

RE: Preconstruction Notification (PCN) No. 980071600-YJC, dated May 13, 1999, Irvine Community Development Center, Muddy Canyon Creek, Orange County, California

Dear Colonel Carroll:

The Environmental Protection Agency (EPA) has reviewed the above referenced PCN (No. 980071600-YJC) regarding the Irvine Community Development Center's (applicant's) proposal to fill approximately 2.78 acres of jurisdictional waters of the U.S. (waters) for the purpose of developing a residential facility, private recreational areas, and associated arterials The proposed project will fill 30,000 linear feet of ephemeral drainage (approximately 6.0 miles of stream). These comments have been prepared under the authority of, and in accordance with the provisions of the Federal Guidelines (40 CFR 230) promulgated under Section 404(b)(1) of the Clean Water Act.

We do not believe that the applicant has clearly demonstrated that the proposed project will have minimal adverse effects and, therefore does not qualify for a nationwide permit. We recommend that you use your discretion and re-notice this project as an individual permit with an appropriate alternatives analysis. We are concerned about the loss of hydrogeomorphic and biological functions associated with the 6.0 miles of ephemeral drainages in the project site. Finally, the proposed mitigation is insufficient to compensate for the impacts to aquatic resources.

Project Description

The proposed development project, known as Crystal Cove, is a 980-acre site with a rolling hill and valley topography. This project site is upstream of an extensive wilderness area in Orange County. The area also contains 18 archaeological sites. The applicant proposes extensive filling and grading over 581 acres of the site with direct impacts to 2.73 acres of waters of the United States including: 0.05 acres of seasonal wetlands and approximately 6.0 miles of linear stream channel. The applicant proposes to mitigate a portion of the impacts on-site and a portion at the San Joaquin Marsh Mitigation Bank at an undetermined ratio. Off-site, indirect impacts that would occur to these drainages downstream of the project site have not been calculated.

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14
Ex 1

EPA has the following concerns with the project:

Adverse Impacts are More than Minimal: First, NWP 26 requires that the project impact no more than 500 linear feet of U.S. waters. The proposed project will impact over 30,000 linear feet; clearly over the threshold for use of NWP 26.

We are concerned that the proposed project does not meet the minimization of adverse individual and cumulative impacts criteria required for authorization under the Nationwide Permit (NWP) program. The proposal to fill over 6.0 miles of creeks will completely eliminate all of the functions provided by the aquatic resources on the site such as surface water storage, energy dissipation, nutrient cycling, retention of particulates, maintenance of characteristic plant and animal community, ground water recharge and habitat interspersion and connectivity.

In Southern California, the lower order, headwaters streams are typically narrow, linear, aquatic features and are predominantly intermittent or ephemeral. The various hydrological, biogeochemical, and plant and habitat functions performed by these tributaries are essential to maintaining the integrity of watersheds in this arid region. For instance, the capacity of lower order streams to store surface water, dissipate the energy of flows, and retain materials, benefits downstream reaches by reducing peak flows, and sediment delivery, improving water quality and maintaining characteristic channel dynamics. Intact headwaters streams are also important sources for the export of organic carbon which supports aquatic food webs and biogeochemical processes in downstream reaches. The plant communities that are characteristic of the various types of first order streams provide habitat and micro climatic conditions designed to support the completion of life histories of plants and animals.. The proposal to fill over 6.0 miles of creek channels would completely eliminate all of the functions provided by the aquatic resources on the site. We are concerned that the proposed project will result in an unacceptable loss or degradation of riverine ecosystem functions and contribute to significant cumulative impacts to waters of the United States.

Insufficient Information: We are concerned about the potential cumulative impacts to the water quality and physical integrity of the downstream watersheds that would result from the elimination or reduction of their headwaters. Until all the project related impacts are clearly quantified and described, we can not fully evaluate the effects of the proposed project on the aquatic ecosystem and are unable to make a reasonable judgement as to whether the proposed discharge will comply with the Guidelines (40 CFR 230.12). Further analysis of the potential cumulative impacts of this proposed project on the hydrologic, biogeochemical and hydrogeomorphic functions of the downstream watershed are needed (40 CFR 230.11 (g)(2)).

Mitigation: The proposed mitigation fails to compensate for impacts to the aquatic resources' acreage and functions. As described above, these first order streams perform many hydrologic, biologic and biogeochemical functions. There has been no mitigation proposed for the loss of over 6.0 miles of stream bed. Since it is extremely difficult to create a stream, we recommend a minimum preservation/restoration of a similar habitat and linear feet at a 2:1 ratio.

Furthermore, EPA has not approved of the San Joaquin Marsh Mitigation Bank and are concerned that mitigation at that site will not replace the functions of the existing wetlands. We recommend the applicant provide on-site mitigation for the loss of wetlands.

Ex. [redacted]
p. 2

Recommendation

In conclusion, we object to issuance of this permit and recommend that you exert your discretionary authority and require an individual permit for this project. This recommendation is based on 1) failure to meet the conditions required for authorization under NWP 26; 2) significant direct and cumulative adverse impacts to the watershed; and 3) inadequate mitigation.

Please contact Rebecca Tuden of my staff at (415) 744-1987 if you have any questions regarding this letter.

Sincerely,

Nancy Woo, Chief
Wetlands Regulatory Office

cc: USFWS, Carlsbad, Miller
CDFG, Long Beach
RWQCB, Santa Ana
SWRCB (Balaguer), Sacramento
Applicant

14
Ex. [redacted]
p.3

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, Ca. 94105-3901

SEP 2 4 1999

RECEIVED
South Coast Region
OCT 8 1999
CALIFORNIA
COASTAL COMMISSION

Ms. Teresa Henry
California Coastal Commission
200 Oceangate, Suite 1,000
Long Beach, CA 90802

RE: Proposed Crystal Cove Community Development Center, Muddy Canyon Creek (Appeal # A-5-IRC-99-301)

Dear Ms. Henry;

The U.S. Environmental Protection Agency (EPA) has reviewed The Irvine Development Company's (TIC) proposal to fill approximately 2.78 acres of jurisdictional waters of the United States (waters) for the purpose of developing a 980-acre site into a recreational facility, 635 single family residences, and other amenities. The proposed project will directly impact 36,000 linear feet of ephemeral and intermittent drainages (approximately 6.0 linear miles of streams). Off-site, indirect and cumulative impacts that would occur to the drainages downstream of the project site have not yet been calculated. We have also reviewed TIC's mitigation proposal (dated September 16, 1999). We ask the Commission to consider the following comments:

Non-Compliance with the federal Clean Water Act

EPA reviews projects for consistency with Section 404(b)(1) of the Clean Water Act. As stated in our earlier comments to the US Corps of Engineers (June 4, 1999 letter, attached), we do not believe that the proposed project has minimal cumulative impacts, nor has it been demonstrated that the proposed project is the least environmentally damaging practicable alternative. Therefore, we are concerned that the proposed project violates the Clean Water Act. We request that a more detailed alternatives analysis be prepared which examines opportunities for reducing and minimizing impacts to aquatic resources.

Significant Degradation

In Southern California, the lower order, headwaters streams are typically narrow, linear, aquatic features and are predominantly intermittent or ephemeral. The proposed project will completely eliminate all of the functions provided by 6 miles of streams including functions such as surface water storage, energy dissipation, nutrient cycling, retention of particulates, maintenance of characteristic plant and animal community, ground water recharge and habitat interspersion and connectivity.

Among the functions provided by these ephemeral drainages are their function as important habitat for sensitive reptile and amphibian species such as the spadefoot toad, coast range newt, California legless lizard, and southwestern pond turtle. These tributaries provide

14a
Ex. [redacted]
P

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wildlife and seed dispersal and also provide shallow ground water recharge that may support springs along the coastal bluff.

This watershed is one of the last relatively unaltered drainages within coastal Southern California. The various hydrological, biogeochemical, and plant and habitat functions performed by these tributaries are essential to maintaining the integrity of downstream and coastal watersheds region. Loss of these first order tributaries creates downstream impacts including increases in peak flow, increased sediment runoff, decreased nutrient uptake and degradation of habitat. We continue to be concerned that the downstream impacts from the proposed fill to the ephemeral network have not been adequately considered.

Inadequate Mitigation

We are concerned that the proposed mitigation is inadequate to offset the impacts to aquatic resources. First, there has been no mitigation provided for the downstream and cumulative impacts. EPA believes that the off-site mitigation proposed at the San Joaquin Marsh Mitigation Bank is technically flawed and relies on artificial hydrology that is not naturally sustaining.

Most importantly, there is no mitigation proposed for the loss of over 6.0 linear miles of stream. The replacement waters need to be provided on-site and need to offer in-kind replacement of functions that mimic the ephemeral system that is lost. While detention basins and seasonal wetlands may compensate for some of the on-site water quality functions, they will not replace other functions including habitat support and export of organic carbon for sustainment of the food web. We recommend that TIC restore or enhance other first order tributaries as mitigation. Lastly, all mitigation should provide adequate buffer zones and include a discussion of success criteria, monitoring protocols, and maintenance and management of the site.

We encourage the Commission to ask for a more rigorous analysis as to why it is not practicable to avoid more aquatic resources. In addition, we would like additional assessment of the downstream cumulative impacts of the project and adequate mitigation to offset the project impacts.

If you have any questions about these comments, you may contact me (415/744-1164) or have your staff contact Rebecca Tuden (415/744-1987). Thank you for your consideration.

Sincerely,

Nancy Woo, Chief
Wetlands Regulatory Office

Ex 14a
p. 2

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

JUL 19 2000

RECEIVED
JUL 25 2000
CALIFORNIA
COASTAL COMMISSION

Ms. Teresa Henry
California Coastal Commission
200 Oceangate, Suite 1000
Long Beach, CA 90802

RE: Proposed Crystal Cove Community Development Center, Muddy Canyon Creek (Appeal # A-5-IRC-99-301)

Dear Ms. Henry:

We have previously offered comments to the Coastal Commission about the proposed Crystal Cove project and raised major concerns about potential damage to the coastal ecosystem. Specifically, these concerns include: significant degradation of water quality related to the conversion of ephemeral streams to perennial streams; the increased discharge of pollutants; lack of consistency with the Clean Water Act and the Local Coastal Plan; and inadequate mitigation to offset the loss of six miles of ephemeral drainages, riparian areas, and seasonal wetlands. Also, we recommended conducting a more rigorous analysis of alternatives that would reduce negative impacts to aquatic resources, and requiring additional mitigation measures. As discussed below, we remain concerned the project will cause substantial water quality impacts and result in the loss of riparian habitat, and the complete fill of 36,000 linear feet of drainages within Muddy Canyon Creek, its tributaries, and portions of Los Trancos Canyon Creek. Thus, we continue to recommend avoiding alteration of the main stem of Muddy Canyon Creek, and formulating measures to more effectively manage urban runoff.

We appreciate the additional analyses requested by the Commission for this proposed project. We have reviewed many of the additional studies including: *Wetland Riparian Mitigation and Monitoring Plan* (May 16, 2000); *Analysis of Coastal Drainages and Wetlands* (April 20, 2000), and the *Sediment Yield Study for Muddy Canyon and Los Trancos Canyon* (May 15, 2000). Also, we understand the project has been revised to include detention basins positioned within the development envelope to help reduce peak flows to downstream reaches, and that the dam proposed for Muddy Canyon Creek (also serving as a road crossing) has been eliminated. We welcome modifications to the proposed project.

Ex. 14b
p. 1

Significance of Resource & Potential Degradation

As you know, this site represents one of the last unaltered drainages within coastal Southern California and contains known habitat for a variety of amphibians, reptiles, and bird species. By filling the existing mosaic of aquatic and terrestrial habitats -- including six miles of streams and their associated wetlands -- the proposed project will result in the degradation or elimination of the following functions: surface water storage, energy dissipation, nutrient cycling, retention of particulates, maintenance of characteristic plant and animal community, groundwater recharge, and habitat interspersion and connectivity. Alterations in flow and increases in sedimentation and pollutant discharges will likely degrade the Muddy Canyon watershed and threaten the water quality of the Crystal Cove State Park's Area of Special Biological Significance.

Our concerns appear justified given the findings of the recent studies. The *Analysis of Coastal Drainages and Wetlands* concludes the overall project will provide a net benefit to riparian habitat because the increase in urban runoff will provide more water for vegetation resulting in an increase in overall riparian areas. Beyond missing the adverse effects related to the conversion of streams from ephemeral to perennial, the analysis fails to consider the lost opportunity to restore six miles of riparian corridors. This loss of restoration potential is significant because ≈90-95% of the original riparian acreage in Southern California has already been destroyed, and the remaining areas are significantly degraded. A separate study entitled *Considerations Regarding Riparian Habitat Expansion* (April 2000) concludes that metapopulation biology and landscape issues argue for increasing riparian areas even if it entails converting flow regimes from ephemeral to perennial. Again, this study overlooks the ecological importance of ephemeral drainages and fails to address problems related to increased flows including bank stability, sediment transport, and geomorphology.

The *Sediment Yield Study* identifies potential changes in geomorphological processes related to increased development and runoff. The *Study* indicates the post-project conditions will reduce the sediment load to Muddy Canyon stream by over 500 tons/year. Roughly 76% of the total fine sediment per year will be eliminated as a result of the project, and this will result in increased erosion, incision, and bank destabilization as the watershed attempts to recoup the missing sediments. This process is already on display within the Los Trancos watershed where increased flows have caused the stream to incise. Now, the stream delivers sediment that regularly fills the six foot culvert under the Pacific Coast Highway. The Irvine Company responded to the increased erosion to the coastal bluff by diverting additional runoff from Los Trancos Creek to the Muddy Canyon Creek drainage *(Irvine Company Letter dated August 30, 1999, "Newport Coast Phase IV-3 Appeal; Detention Basin Alternatives Considered but Not Used)*. The *Study* also concluded the post-project conditions will deliver approximately 5.6 tons/year of beach sand to the Crystal Cove area. This represents a decrease of sand by 6% per year. We want to ensure that sufficient sediment is transported downstream to encourage beach replenishment. While a 6% decrease may not seem significant, there is no analysis of the cumulative impacts resulting from a consistent loss of sand supply in an area that is already experiencing beach erosion.

Ex. 14b
p. 2

Finally, it appears that no studies have been done to evaluate the potential environmental damage related to the increase in pollutant discharges to coastal streams, wetlands, and coastal marine waters associated with increased urbanization. Given the growing concern about beach closures across Southern California, we recommend a thorough analysis of this issue. Revising the project to avoid the coastal drainages would help to improve water quality of the downstream reaches.

Consistency with California's Nonpoint Source Pollution Control Program

We believe the approval of this project would be inconsistent with the State's recently adopted Plan for California's Nonpoint Source Pollution Control Program (NPS Plan). In particular, this proposed project fails to include appropriate NPS management measures that are necessary to address the outstanding water quality concerns. Management measures that are not being implemented by this project but are included in the NPS plan include urban management measures related to watershed protection (3.1A) and site development (3.1B), and wetlands management measures related to the protection of wetlands and riparian areas (6A). We recommend that the project be revised to incorporate these measures.

Also, the NPS Plan requires the Commission undertake actions to prevent nonpoint source pollution. The importance of preventing non-point source pollution is embodied in the vision of the NPS Program which states "... to reduce and prevent NPS pollution so that the water of California support a diversity of biological, educational, recreational and other beneficial uses." (NPS Plan, page 1). While the sediment basins may provide some benefit to water quality, we remain concerned about the overall impacts to water quality resulting from filling of the drainages and increasing runoff. We recommend that the project be revised to avoid filling the drainages, and to improve on-site treatment of runoff.

Analysis of Less Environmentally Damaging Alternatives

The current project may not be consistent with the current Local Coastal Plan (LCP). The LCP requires the proposed development to be the least environmentally damaging. Also, we understand the LCP does not allow the filling of the upper portion of Muddy Canyon Creek (in Planning Area 5). Given alternative configurations available for similar communities of this size, and the interpretation of the Clean Water Act requirements for avoidance of waters of the United States, it seems reasonable to expect the Irvine Company to provide a comparable development with much less environmental damage.

Ex. 14b
p. 3

Adequacy of Mitigation

The proposed mitigation does not address the impacts to water quality or the elimination of six miles of linear drainages. We believe on-site retention of run-off would address potential water quality impacts, help retain channel stability and prevent channel degradation from increased flows. In our letter to the Army Corps of Engineers dated 7 December 1999, we identified the technical uncertainties and shortcomings of the proposed mitigation. The proposed on-site wetland areas appear to degrade or convert the existing wetland functions. In particular, a concrete-lined channel with multiple drop structures will not compensate for the biological, geochemical, or hydrological functions that are being impacted.

Conclusion

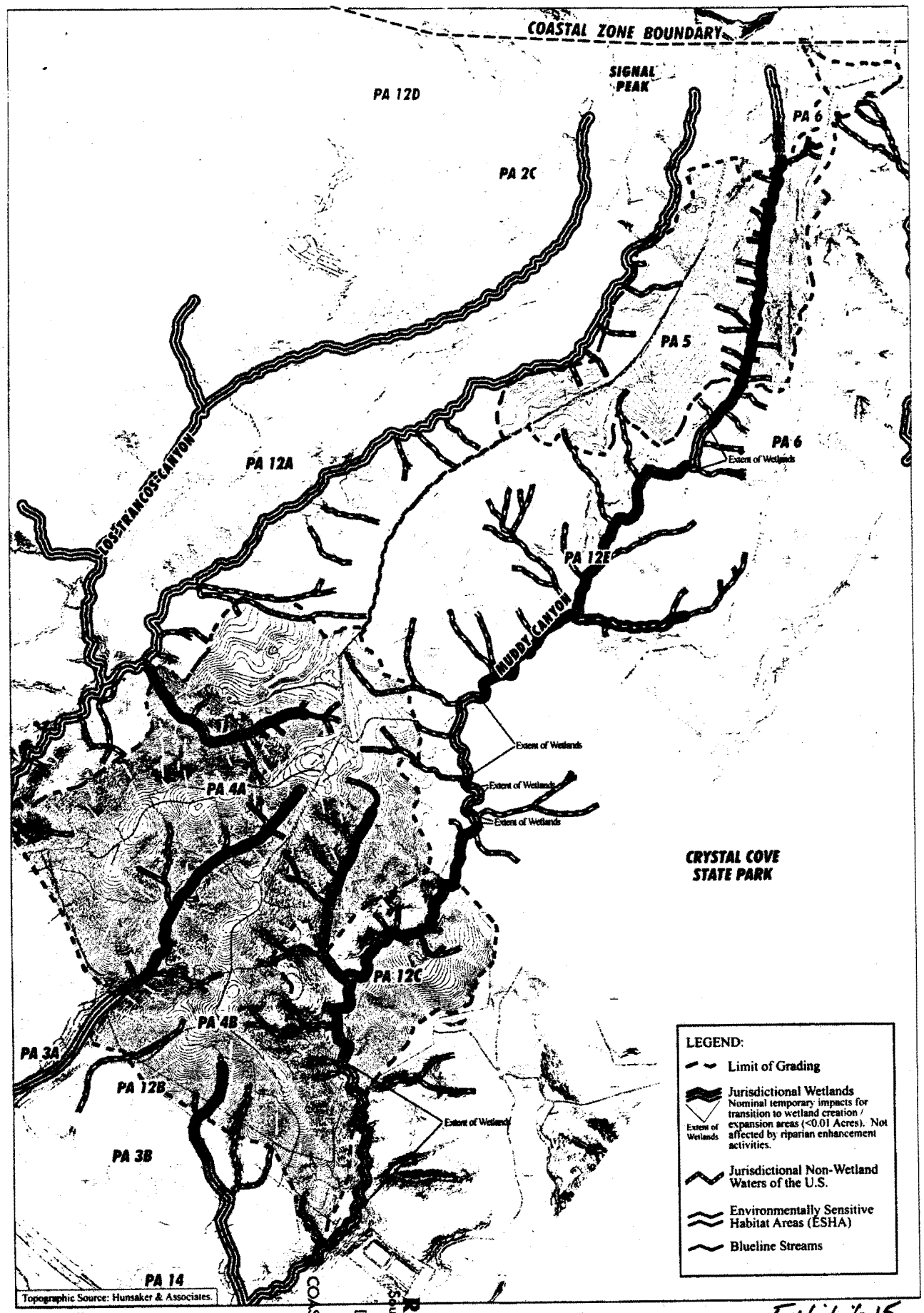
The proposed project will contribute to the cumulative losses of increasingly rare coatal riparian habitat, and significantly degrade water quality. The proposed elimination of six linear miles of streams and associated canyons will have significant impacts to downstream waters -- including increased erosion of existing streams, and beach erosion. The proposed mitigation measures intended to replace the destruction of coastal headwater streams and degraded water quality are inadequate. Also, the proposed project does not adequately evaluate potential increases in non-point source pollution and stormwater runoff, nor include management measures needed to prevent pollutant discharges. Many of these adverse effects could be eliminated if the proposed project would simply avoid alterating the Muddy Canyon Creek watershed. If you wish to discuss this matter, please call me at 415.744.2276, or Rebecca Tuden at 415.744.1987.

Sincerely,

Tim Vendlinski, Chief
Wetlands Regulatory Office

cc:
applicant
USFWS, Carlsbad, San Diego
RWQCB, Santa Ana, Smythe
SWRCB, Sacramento, Balaguer
CDFG, Long Beach, Dickerson

Ex. 14b
P.4



Topographic Source: Hunsaker & Associates.

12/15/99(ICD736)

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LSA

Scale in Feet
0 500 1000

RECEIVED
South Coast Region
DEC 16 1999
CALIFORNIA
COASTAL COMMISSION

Exhibit 15
ESHA and USGS
Blueline Drainages
Newport Coast MCDP
Seventh Amendment

United States Department of the Interior
Fish and Wildlife Service
Ecological Services
Carlsbad Fish and Wildlife Office
2730 Loker Avenue West
Carlsbad, California 92008

JUN 04 1999

Colonel John P. Carroll
District Engineer
U.S. Army Corps of Engineers, Los Angeles District
P.O. Box 532711
Los Angeles, California 90053-2325

Attn: Jae Chung

Re: Pre-Construction Notification No. 980071600-YJC, Muddy Canyon Creek and parts of Los Trancos Canyon Creek, north of Laguna Beach, Orange County, California.

Dear Colonel Carroll:

We have reviewed Pre-Construction Notification (PCN) No. 980071600-YJC received on May 13, 1999, for fill of jurisdictional waters and wetlands within Muddy Canyon Creek and parts of Los Trancos Canyon Creek in coastal Orange County. We have spoken to Jae Chung of your staff regarding the proposed action. These comments have been prepared under the authority, and in accordance with the provisions of the Fish and Wildlife Coordination Act (48 Stat. 401 as amended, 16 U.S.C. 661 et seq.) and other authorities mandating Department of the Interior concern for fish, wildlife, plants and other environmental values.

The proposed project involves fill of 2.73 acres of jurisdictional waters along 29,540 linear feet of ephemeral stream courses and 460 linear feet of intermittent stream courses within Muddy Canyon Creek and parts of Los Trancos Canyon Creek, and fill of 0.05 acre of seasonal depressional wetlands in coastal Orange County. The purpose of the fill is to enable the development of up to 635 single family residential units and a 24-acre private recreation facility (EIR 569, Newport Coast Phase IV-3 and IV-4).

We object to the use of Nationwide Permit No. 26 for the permitting of this action because it will result in greater than minimal adverse effects to the environment, and use of the nationwide permit without an alternatives analysis would be contrary to the public interest. We urge you to exercise discretionary authority to elevate this to an individual permit and require an alternative analysis for this non-water dependent project. Nationwide Permit No. 26 was intended to permit discharges of dredged or fill material into headwaters and isolated waters of no more than 3 acres and not more than 500 linear feet of the streambed. Though this PCN falls within the acreage limitation, the linear impact to waters exceeds 600-fold the impacts typically allowed under this

Ex. 16
1

nationwide permit. Such a large deviation from the linear impact restrictions has been justified on the basis that these impacts are to ephemeral waters.

However, 460 feet of the linear impacts are to intermittent waters. Based on regional provisions, if this proposal were to impact 40 more linear feet of intermittent waters, it would require an individual permit. Given the extensive area to be impacted by this proposal, we are interested in the data and field determinations that were used to make the determination regarding the linear impact to intermittent waters. Regardless, the remaining 29,540 linear feet of ephemeral waters, a distance greater than 5 miles, easily possess important functions and values that are commensurate with, if not well in excess of, those found within 500 feet of intermittent waters, and justify from a cumulative standpoint consideration as an individual permit. These jurisdictional waters are of regional importance. Los Trancos and Muddy Canyons are two of the last remaining relatively unaltered drainages within the coastal range of Orange County.

Among the functions and values possessed by these ephemeral drainages are their function as important habitat for a variety of sensitive reptile and amphibian species, important refuge habitat for a range of species including birds, mammals, amphibians and reptiles, function for wildlife and seed dispersal, flood attenuation, sediment generation and downstream sediment and nutrient transport, along with shallow groundwater recharge that may supply springs along the coastal bluff. Examples of sensitive species that have the potential to use these areas on a transient and/or permanent basis include the spadefoot toad, coast range newt, California legless lizard, two-striped garter snake, loggerhead shrike, southwestern pond turtle and neo-tropical migratory birds. The spadefoot toad, in particular, is known from the on-site seasonal wetlands, and likely utilizes on-site ephemeral and intermittent drainages as well. While impacts to the spadefoot toad were addressed in the Central/Coastal Orange County NCCP/HCP, impacts to the other species listed above and jurisdictional waters were not addressed. Moreover, our consideration of the toad relies on the proper application of the nationwide permit program by the Corps to ensure this species is adequately conserved so as to preclude its need for listing.

The proposed mitigation strategy for these extensive impacts to ephemeral waters is entirely out-of- kind, and no supporting documentation has been provided that demonstrates how the proposed mitigation will compensate for the functions and values that will be lost. We have been involved in discussions regarding the proposed San Joaquin Marsh mitigation area and still have concerns regarding the creation of a highly regulated lacustrine fringe wetland that will be subject to annual maintenance, public usage, and artificial hydrology as compensation for out-of-kind natural functions and values. The Irvine Ranch Water District is the present owner of the proposed mitigation area, and has initiated a notice of preparation regarding the diversion of San Diego Creek waters along with releases of reclaimed water from Sand Canyon Reservoir into this area. The relationship of this proposal to the mitigation proposal, and issues regarding water quality impacts and the potential for bioaccumulation of toxic substances, remain unresolved.

The lack of proposed in-kind mitigation and cumulative extent of jurisdictional waters losses within the last relatively unaltered drainages within coastal Orange County support our

Ex. 1C
2

determination that this project is of more than minimal adverse effect to the environment. As a result, we recommend that this project be processed as an individual permit.

Should you not process this project as an individual permit, we request that alternative mitigation be utilized, or due to the out-of-kind proposal, that compensatory ratios of 4:1 within the San Joaquin Marsh be used for impacts to ephemeral waters. We recommend prior to acceptance of the on-site creation of seasonal wetlands, that soil tests be performed to determine the ability of the proposed wetland creation site to support seasonal wetlands. Impacts to the seasonal wetlands should be compensated by on-site creation of habitat at a ratio of 2:1.

Please notify this office of your intentions with respect to the above recommendations. Thank you for the opportunity to comment on this PCN. If you have any questions regarding these comments or your responsibilities under the Endangered Species Act, please contact William Miller of my staff at (760) 431-9440.

Sincerely,

Jim A. Bartel
Assistant Field Supervisor

cc: Terri Dickerson, CDFG
Rebecca Tuden, EPA

Ex. 16
3

DEPARTMENT OF THE ARMY
LOS ANGELES DISTRICT, CORPS OF ENGINEERS
P.O BOX 532711
LOS ANGELES, CALIFORNIA 90053-2325

August 18, 1999

RECEIVED
DEC 8 1999
CALIFORNIA
COASTAL COMMISSION

REPLY TO
ATTENTION OF:

Office of the Chief
Regulatory Branch

AUG 20 1999

Art Homrighausen
LSA Associates, Inc.
1 Park Plaza, Suite 500
Irvine, California 92614-5981

Dear Mr. Homrighausen:

Reference is made to your request (No. 980071600-YJC) on behalf of the Irvine Community Development Company for Department of the Army authorization to discharge fill materials associated with the Crystal Cove/Newport Coast Phase IV-3 and IV-4 development in Muddy Canyon near Laguna Beach, Orange County, California. This letter supercedes the July 14, 1999 denial without prejudice letter.

On June 25, 1999, we provided verbal confirmation that the Nationwide Permit Number NW26 is applicable to your proposed activity, provided that you comply with the attached special conditions. While this activity, along with the attached special conditions, meets the general terms and conditions for authorization under Nationwide Permit Number NW26 [Federal Register, Dec.13, 1996, pp.65874-65922], we noted that you do not have Section 401 water quality certification from the California Regional Water Quality Control Board (RWQCB). Therefore, your request was denied without prejudice because of the lack of a Section 401 water quality certification and a letter attesting to this was issued on July 14, 1999.

In addition, we have been informed a few days after issuing the July 14, 1999 denial without prejudice letter, that a consistency certification or waiver pursuant to section 307 of the Coastal Zone Management Act (CZMA) has not been granted. A consistency certification or waiver pursuant to section 307 of the Coastal Zone Management Act (CZMA) are required prior to authorization of your project. We have verbally informed you of this requirement in light of the new information on July 22, 1999 at a meeting at our office. This letter is a written confirmation of our verbal communication. You will receive authorization from the Corps when you have met the requirements outlined below.

According to 33 CFR 330.4 state 401 water quality certification pursuant to Section 401 of the Clean Water Act, or waiver thereof, and consistency certification or waiver pursuant to section 307 of the Coastal Zone Management Act (CZMA) are required prior to authorization of your project. You must therefore obtain Section 401 certification or waiver, or provide the Corps with evidence that 60 days have passed since you applied to the RWQCB for certification. In addition, you must obtain CZMA consistency certification or waiver, or provide evidence that 6 months have passed since you applied to the California Coastal Commission for CZMA certification. Be aware that any conditions on your Section 401 and CZMA certifications will become conditions

Ex. 16a

P. 1

on your Nationwide Permit authorization.

When you receive your Section 401 certification or waiver (or when 60 days have passed since you applied) and your CZMA consistency certification or waiver (or when 6 months have passed since you applied), you should contact the Corps Project Manager for this project, Jae Chung, at (213) 452-3292. Please reference application 980071600-YJC in your letter. Your authorization could then be issued without further delay or processing.

If you have any questions, please contact Jae Chung at the above telephone number.

Sincerely,

Mark Durham

Mark Durham
Chief, South Coast Section
Regulatory Branch

Attachment: July 14, 1999 denial without prejudice letter for 401 certification/waiver

Ex. 16a
2

Special Conditions for 980071600-YJC

1. The permittee shall develop a Biological Mitigation and Monitoring Plan which identifies the location, duration, and method for compensatory mitigation, monitoring program, success standards, and contingency measures. The permittee shall obtain written approval of this plan from the Corps of Engineers prior to initiation of construction.

2. The permittee will flag wetland and non-wetland water habitats to identify areas that must be avoided. Any additional acreage impacted outside of the approved construction footprint shall be mitigated at a 5:1 ratio. In the event that additional mitigation is required, the type of mitigation shall be determined by the Corps and may include wetland enhancement, restoration, creation, or preservation.

3. The permittee shall employ all standard Best Management Practices to ensure that toxic materials, silt, debris, or excessive erosion do not enter the Muddy Canyon Creek or Los Trancos Canyon Creek during project construction.

4. The permittee shall ensure that all vehicle maintenance, staging, storage, and dispensing of fuel occurs in designated upland areas. The permittee shall ensure that these designated upland areas are located in such a manner as to prevent any runoff from entering waters of the U.S.

5. The permittee shall comply with the conditions for protecting archaeological resources which will be developed by the Corps archaeologist once all requested information is provided to the Corps.

6. The permittee shall obtain a Water Quality Certification or waiver pursuant to Section 401 of the Clean Water Act and a consistency certification or waiver pursuant to section 307 of the Coastal Zone Management Act prior to initiation of any work authorized by the permit. A copy of the certifications or waivers shall be submitted to the Corps upon its receipt.

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Ex [redacted]
p. 3

DEPARTMENT OF THE ARMY
LOS ANGELES DISTRICT, CORPS OF ENGINEERS
P.O BOX 532711
LOS ANGELES, CALIFORNIA 90053-2325

July 14, 2000

REPLY TO
ATTENTION OF:

Office of the Chief
Regulatory Branch

LSA Associates, Inc.
Attention: Art Homrighausen
One Park Plaza, Suite 300
Irvine, California 92614-5981

Dear Mr. Homrighausen:

Thank you for coming to our office on June 21, 2000 to brief the Corps on the changes that have occurred for the Irvine Community Development Company's proposal to place fills in tributaries to Muddy Canyon and Los Trancos Canyon in association with Phases IV-3 and IV-4 of the Newport Coast Development. We are writing, in part, to confirm the changes in the project impacts since our last correspondence dated August 18, 1999 denying your permit without prejudice due to the lack of a 401 water quality certification or waiver and a consistency determination with the Coastal Zone Management Act.

You have described several changes to the project as follows.

- **Reduction in wetland impacts.** The original project impacts included placement of fills within 0.13 acres of wetlands within an intermittent stream in order to create a detention basin dam structure/culverted road crossing across lower Muddy Canyon. The detention basin dam structure/culverted road crossing has been replaced with a 34 foot wide bridge that will completely span Muddy Canyon resulting in no impacts to any wetlands. The mitigation has not been reduced.

- **Addition of detention basins.** The current project now includes six detention basins. The project described in Draft Environmental Impact Report No. 569 described two detention basins in Planning Area (PA)-3A. Since then, an additional four detention basins were added (one in PA-3A/3B , one in PA-14, and two in PA-5). Urban runoff water will be diverted to these detention basins to minimize peak flows such that pre- and post-development peak flows are not significantly different.

- **Diversion of dry weather runoff.** Low flow interceptors and pump stations have been added as design features at the bottom of both Los Trancos Canyon and Muddy Canyons near the Pacific Coast Highway. These structures will divert dry season flow to a sanitary sewer system before these flows reach the Pacific Ocean. Impacts from these structures in these two streams will be 100 square feet total or 0.002 acres.

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- **Regenerative air street sweeping.** To collect sediments and adsorbed metals and hydrocarbons, the completed development will use regenerative air sweepers which will run weekly in residential areas and five times a week in commercial areas. The proposed technologies have been shown to remove 92-100% of sediments greater than 125 microns, which represent around 87% of all accumulated sediment in some areas.

- **DrainPac storm drain filters.** DrainPac filters will be used in numerous catch basins throughout the development. These filters will remove over 90% of the sediments and the majority of the oil and grease from runoff water. Provided these filters are maintained in perpetuity by funding from the local homeowners association or from a local fee, these filters should be effective.

- **Vegetated swales.** Vegetated swales have been incorporated as design features in the commercial area along the Pacific Coast Highway, in the recreation center within PA-12C, along the collector street for the residential lots in PA-4, and within the centers of the cul-de-sacs in remaining residential areas. The vegetated swales will remove additional pollutants from runoff water.

- **Riparian mitigation areas.** The project will continue to have the same amount of on-site compensatory mitigation. As described in a September 8, 1999 submittal, compensatory mitigation consisted of 1.44 acres of created riparian corridor, 0.88 acres of wetland expansion (0.62 acres in the open space in PA-12E and 0.26 acres upstream of the culverted road crossing), 0.61 acres of riparian enhancement, and 0.4 acres of seasonal wetland creation. With the removal of the detention basin dam structure/culverted road crossing, the wetland expansion was altered such that 0.55 acres of the wetland expansion would occur in PA-12E and 0.35 acres of the wetland expansion would occur upstream of the bridge crossing that replaced the culverted road crossing. These riparian areas will contribute to removing sediments and other pollutants from runoff water.

In our June 21, 2000 meeting, you further stated these alterations do not significantly change the project and do minimize some of the impacts. You also requested the Corps' concurrence that the project still qualifies for nationwide permit 26 with these changes. The Corps agrees that the project changes have further minimized the impacts to the aquatic environment with respect to adverse water quality and altered hydrology. The regenerative air street sweeping, DrainPac filters, vegetated filters, and riparian enhancements within the project should reduce the pollutant load to runoff water. Accompanying studies have shown the effectiveness of most of these methods in significantly reducing pollutant load to runoff. In addition, the diversion of dry weather flows within Muddy and Los Trancos Canyons should further minimize water quality impacts to receiving waters. The detention basins should minimize the peak flows entering natural water courses such that any scouring will be minimized within the natural water courses. Because each project alteration minimizes impacts to the aquatic environment, the entire project including alterations would have less

Ex. 16b
p. 2

impact to the aquatic environment than the original proposed project. Thus, the project incorporating the above changes would still qualify for nationwide permit 26 as long as the other terms and conditions for the nationwide permit are met.

If you have any questions, please contact Jae Chung of my staff at (213) 452-3292. Please refer to this letter and 980071600-YJC in your reply.

Sincerely,

for Mark Durham
Chief, South Coast Section
Regulatory Branch

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THE ~~IRVINE~~ NEWPORT COAST LOCAL COASTAL PROGRAM

Second Amendment

Ex. 17
p. 1

CHAPTER 2

COASTAL ACT CONSISTENCY AND OVERALL FINDINGS AND CONCLUSIONS

Among the primary goals of the Coastal Act are the protection of coastal resources and provision of public access to the coast. The Legislature also recognized that conflicts might occur when carrying out all of the Act's policies. The Legislature, therefore, established a "balancing" test. This test allows the Coastal Commission to approve a plan which, although it may cause some damage to an individual resource, on balance is more protective of the environment as a whole (Public Resources Code Section 30007.5). Public acquisition of large, continuous open space areas is recognized as a superior means to guarantee the preservation of coastal resources such as vegetation, wildlife, and natural landforms, and to create new public access and recreation opportunities rather than preserving small pockets of open space surrounded by development.

The ~~Irvine~~Newport Coast Plan strikes a balance in two ways which are consistent with the intent of the Act. First, a substantial portion of the area is designated for preservation in its natural state. Second, policies have been developed to address a wide range of issues in areas of The ~~Irvine~~Newport Coast designated for development and to mitigate potential adverse impacts. (See also "California Coastal Commission Findings for LUP Certification", November 4, 1981, in Appendix 1.)

A. RESOURCES PROTECTION PROGRAM

1. OPEN SPACE DEDICATION PROGRAMS

The purpose of the Open Space Dedication Programs is to protect certain specified coastal resources and to offset adverse environmental impacts in residential development areas which will not otherwise be mitigated. Permanent protection and preservation of major canyon watersheds, visually significant ridgelines, stream courses, archaeological and paleontological sites, riparian vegetation, coastal chaparral and wildlife habitat is provided by dedication to a public agency (the County of Orange or its designee). Environmental impacts to be mitigated by the dedication programs include habitat and archaeological impacts caused by residential

development and road improvements on Pelican Hill, habitat impacts on Los Trancos Canyon, Buck Gully, and Muddy Canyon caused by the construction of ~~Pelican Hill Road,~~ Newport Coast Drive ~~and Sand Canyon Avenue,~~* public view and use impacts caused by residential construction in the ~~Cameo Shores~~Pelican Point area and adjacent to Crystal Cove State Park, and scenic resource impacts caused by golf course and tourist commercial development on the frontal slopes of Pelican Hill and Lower Wishbone ~~Hill~~.

Large-scale master planning and dedication programming for The ~~Irvine~~Newport Coast enables the permanent protection of large, contiguous open space areas rather than the protection of smaller, discontinuous habitat areas that might result from a project-by-project site mitigation approach. A much greater degree of habitat and open space protection can be achieved by dedication programs that assemble large blocks of habitat area contiguous to Crystal Cove State Park than would be possible with project-by-project mitigation measures. (Coastal Commission Appeal No. 326-80, Broadmoor, Page 18.)

While specific mitigation measures are being included for potential impacts within or near the development areas (e.g., erosion control measures), the primary mitigation measure for impacts not avoided is the phased "Wilderness" Open Space Dedication Program. In addition, significant additional habitat protection and development mitigation will be accomplished with the dedication of large areas of Los Trancos Canyon, Buck Gully, and Muddy Canyon through the "Special Use" Open Space Dedication Program.

Consistent with Coastal Act Section 30200, most of the more significant Environmentally Sensitive Habitat Areas (ESHA's) are located within, and will be protected by, conservation and recreation land use categories. The Land Use Plan recognizes that the preservation of these particular resources and the Open Space Dedication Programs are more protective of coastal resources than the protection of more isolated and relatively less significant habitat areas within designated residential and commercial development areas. Hence the potential loss of any ESHA's through development is offset by the Open Space Dedication Programs. The potential loss of any ESHA's through the construction of public facilities such as arterial highways is

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* Sand Canyon Avenue was deleted pursuant to Board of Supervisor's Resolution No. 95-561 approved on August 1, 1995.

offset by the coastal access benefits derived from these roadways as well as the Open Space Dedication Programs.

In accordance with Section 30007.5 of the Coastal Act, the major Open Space Dedication Programs creates the balance which allows the completion of the residential and commercial land uses.

2. ENVIRONMENTALLY SENSITIVE HABITAT AREAS

For purposes of Section 30107.5 of the Coastal Act, natural drainage courses designated by a dash and three dot symbol on the USGS 7.5-minute series map, Laguna Beach Quadrangle, dated 1965 and photo-revised 1972 (hereafter referred to as "USGS Drainage Courses"), riparian vegetation associated with the aforementioned drainage courses, coastal waters, wetlands, and estuaries are classified as "Environmentally Sensitive Habitat Areas" (ESHA's).

The habitat value along the length of individual drainage courses and among different drainage courses is not equal. The habitat value of the coastal waters is different from that for drainage courses. Based on biological studies, (see biological inventory, Appendix H-1, Final EIR 237 and Pelican Hill Drainage Habitat, LCP Appendix Item 2) four categories of ESHA's have been created to differentiate habitat values as shown on Exhibit H.

a. ESHA Category A:

USGS Drainage Courses with associated riparian vegetation which contain the most significant habitat areas in The ~~Irvine~~Newport Coast are designated as ESHA Category A, are subject to the most protection, and are located entirely within the Recreation and Conservation land use categories. To assure their long-term protection and as a means of providing a unique park setting for future residents of The ~~Irvine~~Newport Coast and of the region, portions of Buck Gully and Los Trancos and Muddy Canyons, will be dedicated to the County of Orange in accordance with policies of this LUP. Public access to these areas will be via linkages with the ~~Pelican Hill Road~~Newport Coast Drive Trail System, Los Trancos parking lot, and the Crystal Cove State Park Trail System.

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Nine surface water sources have been identified (refer to EIR 237, Figure 25) in Buck Gully, Los Trancos, Moro, and Emerald Canyons. All nine water sources come from natural seeps, although two of the three sources in Buck Gully are probably augmented by percolating irrigation runoff from adjacent development. Flow from all nine seeps occurs all or most of the year during average rainfall years, although downstream flow may be very limited. These USGS Drainage Courses are the most significant ESHA's in The ~~Irvine~~Newport Coast because they contain all of the following habitat characteristics: 1) standing or flowing water all or a significant part of the year; 2) a definitive stream bottom (i.e., defined banks with a sandy or rocky bottom); and 3) adjacent riparian vegetation lining the water course.

b. <u>ESHA Category B</u>:

USGS Drainage Courses which contain water flows only when it rains and support only small amounts of riparian vegetation, are designated as ESHA Category B. These areas have relatively less habitat value~~,~~ and except for the ESHA Category B located within Planning Area 4A are located in Recreation and Conservation land use categories.

c. <u>ESHA Category C</u>:

The coastal waters along The ~~Irvine~~Newport Coast -- ESHA Category C -- have been designated as both a Marine Life Refuge and an Area of Special Biological Significance. They contain near shore reefs, rocky intertidal areas and kelp beds, and are located primarily within Crystal Cove State Park. The State Department of Parks and Recreation will be responsible for providing protection for tidepools and other marine resources from park users.

Protection of water quality is provided by the Runoff Policies.

d. ESHA Category D:

ESHA Category D designates USGS Drainage Courses which are deeply eroded and of little or no riparian habitat value. They are located in Residential and Commercial land use categories and two specific Recreation sites. Typical vegetation includes elderberry, arroyo, coastal scrub, and annual grassland. These drainage courses are often incised as a result of erosion, resulting in rapid runoff and very steep narrow sideslopes generally incapable of supporting riparian habitat. Development will impact most of these ESHA's. The Open Space Dedication and Riparian Habitat Creation Programs will mitigate development impacts.

e. Riparian Habitat Creation Program:

Golf course and visitor-serving development in PA 10A, PA 10B, PA 13A, PA 13B, PA 13C, PA 13D, PA 13E, and PA 13F will modify drainage courses that are presently degraded. Any habitat impacts resulting from drainage course modifications will be mitigated by the Riparian Habitat Creation Program and the Open Space Dedication Programs.

3. EROSION CONTROL AND URBAN RUNOFF

The primary measure for minimizing potential erosion and urban runoff impacts is the permanent preservation in open space of over ~~76%~~77% of The ~~Irvine~~Newport Coast. Additionally, specific development standards assure that, to the extent feasible, unavoidable impacts within the development areas are mitigated.

The major objective of the Erosion and Urban Runoff Management Policies for The ~~Irvine~~Newport Coast is to assure that erosion and runoff rates do not significantly exceed natural rates, while at the same time assuring sand replenishment provided within the coastal watershed is maintained (The ~~Irvine~~Newport Coast littoral "cell" is limited and partially dependent on the local watershed for sand replenishment.)

Marine water quality will be protected by directing runoff to natural drainage courses such as Los Trancos Canyon, Buck Gully, and Muddy Canyon, through the use of landscaped drainages in the golf course (including the new riparian habitat area), and by means of erosion control techniques to slow runoff so that habitat areas are protected from flows significantly in excess of natural rates of flow. Additional control of non-point sources will be implemented if necessary to comply with State, regional and County standards. These measures may include street-sweeping, catch basin cleaning, efficient landscaping practices, and control of chemical applications.

4. VISUAL QUALITY

The Coastal Act requires that new development be sited and designed in such a way as to protect views to and along the ocean and scenic coastal areas (Section 30251). The visually significant lands and primary public views in The ~~Irvine~~Newport Coast are depicted on Exhibit C and Appendix Item 6. The policies and land uses of The ~~Irvine~~Newport Coast LUP reviewed below, in association with the State Park purchase and private donations, address "visual quality" in a comprehensive manner and protect views of each of the major landforms depicted on Exhibit C. Additionally, the creation of the golf course greenbelt enhances the visual qualities of the frontal slopes of Pelican Hill by providing year-round greenery and by providing a scenic foreground for the visitor-serving areas.

a. Views from PCH toward the Ocean:

The original 1976 Irvine Coast ~~LCP~~LUP had proposed visitor-serving uses on the coastal shelf between PCH and the ocean. In order to accommodate the objectives of the California Department of Parks and Recreation (State Parks) and in response to community concerns, the proposed overnight/resort accommodations were relocated inland to the Pelican Hill area (PA 13A and PA 13B). As a consequence, Crystal Cove State Park now comprises the most extensive area of open coastal shelf, visible from PCH, between Newport Beach and Camp Pendleton.

CHAPTER 3

RESOURCE CONSERVATION AND MANAGEMENT POLICIES

This Chapter sets forth policies for the conservation and management of resources within The ~~Irvine~~Newport Coast Planned Community. Policies are organized in the following sequence:

- A phased dedication program for 2,666 acres of public "wilderness" open space and interim management policies during program implementation;
- A dedication program for approximately ~~1,155~~1,176 acres of public "special use" open space;
- Recreation/open space management policies for The Irvine Coast Wilderness Regional Park, as well as for other open space/passive recreation areas within the community;
- Policies related to the four different types of Environmental Sensitive Habitat Areas (ESHA's) within The ~~Irvine~~Newport Coast;
- Specific programs for the protection of cultural (archaeological and paleontological) resources; and
- Policies to protect resources from erosion, sedimentation, and runoff, and to guide grading and the treatment of the interface edge between development and open space, including fuel modification programs required for fire safety.

A. DEDICATION PROGRAM REQUIREMENTS AND PROCEDURES

1. WILDERNESS OPEN SPACE

The landowner shall dedicate Planning Areas PA 18, PA 19, PA 21A, PA 21B, PA 21C, and PA 21D to the County of Orange as development of residential and commercial areas occurs, in accordance with the following policies and procedures.[1]

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[1] Irrevocable Offer of Dedication recorded November 10, 1988.

a. **Lands to be Dedicated:**

The Dedication Area includes approximately 2,666 acres in Planning Areas PA 18, PA 19, PA 21A, PA 21B, PA 21C, and PA 21D. In order to facilitate resource management, public access and acceptance by the County of portions of the dedication in phases, the Dedication Area has been divided into four Management Units. Acceptance by Designated Offerees of Management Units shall occur in numerical sequence as shown on Exhibit I. "Designated Offerees" are those agencies and organizations described in Subsection b-3) below.

In order to accommodate open space management objectives and the topographic characteristics of the Dedication Area, minor adjustments to the boundaries of the Management Units may be made by agreement of the landowner, the County, and the Coastal Commission and shall be treated as a minor amendment to this Plan at the direction of the Executive Director of the Commission.

b. **Procedures for Conveyance of Title:**

1) **Recordation of the Offer**

a) Timing of Recordation: No later than ten (10) working days following the later of the following two events (1) the expiration of all statutes of limitation applicable to a legal challenge to certification of the LCP and the approval of a Development Agreement or "other mechanism" (as described below) by the County and the landowner, without any legal challenge having been filed, and (2) the date when both the foregoing certification and approval have become effective, the landowner shall record an Offer of Dedication for a term of thirty (30) years for the entire 2,666-acre Dedication Area. The term "or other mechanism" means that if County or landowner determines not to enter into a Development Agreement, then an "other mechanism" providing equivalent assurances of certainty of development will be entered into between the County and landowner as a condition precedent to the recording of the offer; upon entering into such an

agreement (i.e. "other mechanism"), County and landowner shall jointly publish a public notice that the 10 working days time period for recording the offer has commenced. Notwithstanding the first sentence of this paragraph, the landowner may, at its sole discretion proceed to record the Offer at any time earlier than provided in this paragraph.

b) Effect of Legal Challenge: In the event of a legal challenge to the certification of the LCP and/or the validity of a Development Agreement or "other mechanism," the landowner is obligated to record the offer only at such time as the earlier of either of the following occurs: (1) the landowner proceeds to commence development (as defined in the Coastal Act of 1976) in the Plan area pursuant to a Coastal Development Permit or (2) the County succeeds in obtaining a final court ruling, not subject to further judicial review, affirming the validity of the approval challenged in the litigation, thereby enabling the landowner to proceed with development on the basis of the LCP as approved and certified by the Coastal Commission.

c) Recorded Offer as Pre-Condition to Development: The County will not provide final authorization to proceed with development pursuant to any Coastal Development Permit in the Plan area prior to recordation of the Offer (e.g., a subdivision map or final grading permits may be approved conditioned upon recordation of the Offer).

2) Timing of Acceptance of Dedication Offer

The Offer of Dedication will provide that the title for each Management Unit shall be automatically conveyed upon acceptance, as specified in Section "a)" above and in Section "b)(3)" below, as follows:

a) Management Unit I may be accepted only after the issuance of the first grading permit authorizing (initial) grading in any residential, commercial, or golf course planning areas (as identified in Exhibit E) other than for a Coastal Development

Permit providing for the construction of ~~Pelican Hill Road~~Newport Coast Drive; and

b) One remaining Management Unit may be accepted only in numerical sequence and only as follows for each of the development increments listed below:

(1) Ninety days following issuance of building permits for a cumulative total of 1,000 primary residential dwelling units;

(2) Ninety days following issuance of building permits for a cumulative total of 2,000 primary residential dwelling units; and

(3) Ninety days following issuance of building permits for (a) a cumulative total of 1,500 overnight/resort accommodations (as defined in LUP Subsection 4-A-1-a and 4-A-2-a and in accordance with the intensity formula specified in LUP Subsection 4-A-1-b-4) or (b) a cumulative total of 80 percent of the 2.66 million square feet of development allowed in PA 13 (pursuant to LUP Chapter 4-A-1-b), whichever first occurs.

3) **Designated Offerees**

At such time as any Management Units may be accepted as provided in Subsection b-2)-a) or b-2)-b above, the County of Orange, acting on its own behalf or through its designee(s), will have three (3) years to accept the Offer of such Management Unit(s), after which time the State of California either through the California Department of Parks and Recreation or the California Coastal Conservancy will have three (3) years to accept the Offer of Dedication. If the aforementioned public agencies have not accepted the Offer as specified, the Trust for Public Land or the National Audubon Society will have one (1) year to accept the Offer of Dedication. If none of these public or non-profit entities has accepted title to the Management Unit(s) within these timeframes, the Executive Director of the California Coastal Commission, following consultation with the County, shall be entitled to nominate, no later than ninety (90)

days thereafter, another non-profit entity as a Designated Offeree; the alternative non-profit entity nominated by the Executive Director may become a Designated Offeree only if determined to be mutually acceptable to the Coastal Commission, the County, and the landowner, and shall thereafter be required to accept the Offer(s) within six (6) months of the landowner's determination of acceptability. In the event that the Executive Director of the California Coastal Commission designates such alternative non-profit entity, none of the aforementioned parties shall unreasonably withhold approval of that entity, provided that it has the demonstrated financial capacity and management experience to undertake management of the dedication area in question. If, pursuant to the foregoing procedures, none of the public or non-profit entities has accepted said Offer(s) within these timeframes, the landowner will regain full title and unencumbered use of the offered land constituting the Management Unit(s) subject to LCP land use designations; provided that the landowner may seek an LCP amendment regarding future use(s) of these lands.

4) Effects of Legal Action Preventing Development and Proportional Dedication

a) Acceptance Conditioned on Vesting: Acceptance of the four Management Units identified in the Offer of Dedication pursuant to Subsection b)-2) above, will be qualified by the requirement that the conveyance of title shall not occur if the landowner is prevented from vesting the right to develop the cumulative residential dwelling unit/overnight/resort accommodation levels as specified in Subsection b)-2) above by operation of federal, State or local law, or by any court decision rescinding, blocking or otherwise adversely affecting the landowner's governmental entitlement to develop said units. At any time that the landowner is subsequently entitled to proceed with development in the manner specified in the approved LCP, all dedication requirements and provisions shall be automatically reinstated provided that the term of the Offer has not been exceeded.

b) Development Halted for Ten (10) Years: Notwithstanding the last sentence of Subsection a) above, if the landowner is prevented from proceeding with development (i.e., legally unable to undertake development for the reasons

identified in Subsection a) above) for an uninterrupted period of ten (10) years, the right to accept shall be suspended as it applies to the Management Unit(s) correlated with the type of development so halted (e.g., if the entitlement to develop overnight/resort accommodations has been halted for ten (10) years, the right of the Designated Offeree(s) to accept the Management Unit correlated with that development shall automatically be suspended). In such event, the right to undertake that type of development pursuant to the LCP shall likewise be suspended unless and until the landowner is legally authorized to proceed with that type of development previously halted. If the right to undertake any development pursuant to the LCP is halted as provided herein for a period of ten (10) years in any fifteen (15) year time period, the landowner shall have the right to terminate the Offer of Dedication and, in that event, the right to develop under the LCP shall automatically be suspended.

c) Proportional Dedication: If the landowner has not been able to undertake the aforementioned development for a period of ten (10) years, the Designated Offeree(s) may only accept a proportional dedication in accordance with the following ratio:

Proportional Dedication — For each unit for which the landowner has received a certificate of occupancy, the Designated Offeree(s) may accept dedications in ratios of .76 acre for each such residential unit and .31 acre for each visitor accommodation unit or per each 1400 sq. ft. increment of the 2.66 million sq. ft. intensity allowed in PA 13 (whichever intensity level is achieved first).

Dedication areas accepted pursuant to the above proportional dedication requirement shall be located in accordance with the Management Unit sequencing identified on Exhibit I, with the precise location of the acreage to be contiguous with a previously accepted dedication area and/or adjacent to publicly owned park/open space land, and as specified by the accepting Designated Offeree(s) following consultation with the landowner.

d) Management Unit I Reversion: In the event that the landowner is prevented, as specified in Subsection 4)-a) above, from completing (i.e., receiving certificates of use and occupancy for) the first one thousand (1,000) primary residential dwelling units, title to any lands accepted the by the Designated Offeree(s) in Management Unit I in excess of the Proportional Dedication ratio as applied to completed units shall revert to the landowner within six (6) months of the occurrence of the specified legal impediments to development.

5) Dedication Commitments — Effect of Landowner Delay in Development

a) Areas Graded but Not Completed: For any development area that has been graded and remained unimproved (i.e., without streets, infrastructure, and permanent drainage systems) for a period of five (5) years following the commencement of grading, the Designated Offeree(s) may accept a dedication area in accordance with the proportional dedication formula in Subsection 4)-c) above, with the application of the formula based on the number of development units specified/authorized in the Coastal Development Permit which served as the governmental authorization for the grading activity. This provision shall not apply where the delay in vesting development rights on the land area in question has occurred as a result of the operation of federal, State or local law, or by any court decision rescinding, blocking, or otherwise adversely affecting the landowner's governmental entitlement to develop the specified units on said land area.

b) Fifteen (15) Year Deadline for Completing All Dedications: All dedication increments that have not been eligible for acceptance pursuant to the provisions of Subsection 2) above may be accepted fifteen (15) years after the recording of the Offer of Dedication. Provided, however, that in the event the landowner is prevented from proceeding with development (i.e., unable to proceed voluntarily) by operation of federal, State, or local law, or by any court decision rescinding, blocking, or otherwise adversely affecting the landowner's governmental entitlement to develop, the fifteen (15) year timeframe for completing all acceptances of dedication increments shall be extended by a time period equal to

the amount of time the right to proceed with development has been suspended. This provision extending the fifteen (15) year time period shall not apply where the development project has been halted by a final, non-appealable court decision based upon the failure of the development project to comply with the certified LCP and/or CEQA. In the event the landowner becomes subject to a federal, State or local law, or any court decision which limits the allowable number of building permits which may be approved or issued each year (or within a given time period), the fifteen (15) year time frame for completing all acceptances of dedication increments shall be extended by a time period equal to the amount of time necessary for the landowner to obtain the maximum allowed building permits per year to complete the total development by the LCP; if the foregoing extension of the fifteen (15) year time period would exceed the term of the Offer, the landowner may either extend the term of the Offer or allow the Offer and any remaining entitlement at that time pursuant to the LCP to expire.

6) Acceptance of Dedication Increments

The acceptance of dedication increments shall be conditioned on a requirement that the dedication lands may be used only for purposes consistent with land uses allowed in the certified LCP and may be conveyed subsequent to the initial acceptance only to other Designated Offerees.

7) Dedication Area Access

Access to the dedication areas prior to any acceptance shall be limited to the County or other Designated Offeree (in the event that County's acceptance period for a particular Management Unit(s) has expired), its employees, licensees, representatives, and independent contractors acting within the scope of their employment by the County or other Designated Offeree solely for the purposes of surveying, mapping and planning activities related to future management of the dedication areas. Any such access shall be subject to landowner entry permit requirements regarding personal liability and personal security.

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8) **Property Description**

A detailed property description for each Management Unit shall be set forth in the Offer of Dedication.

2. SPECIAL USE OPEN SPACE

The landowner shall dedicate Planning Areas PA 11A, PA 12A, ~~and~~ PA 12E, PA 12H and PA 12I to the County of Orange and PA 12G to the California Department of Parks and Recreation or the County of Orange as development of abutting residential areas occurs. The landowner shall receive local park credit for not less than five (5) acres of special use open space dedication. Area(s) designated as special use park shall be made separate parcels suitable for transfer to any succeeding city or local park operating agency in accordance with the following policies and procedures.

a. Prior to or concurrent with the recordation of the first final development map, other than a large-lot subdivision in PA 1A, PA 1B, or PA 2A, the landowner shall record an Offer of Dedication for PA 11A[1].

b. Prior to or concurrent with the recordation of the first final development map, other than a large-lot subdivision in PA 1C, PA 2B, PA 2C, PA 5, PA 4A, or PA 3A, the landowner shall record an Offer of Dedication for PA 12A[1].

c. Prior to or concurrent with the recordation of the first final development map, other than a large-lot subdivision in PA 4A, PA 4B, PA 5, or PA 6, the landowner shall record an Offer of Dedication for PA 12E.

d. Prior to or concurrent with the recordation of the first final development map, other than a large-lot subdivision in PA 7A, the landowner shall record an Offer of Dedication for PA 12H.

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[1] Planning Areas PA 11A (Buck Gully) and PA 12A (Los Trancos Canyon) have been irrevocably offered to the County of Orange for dedication.

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~~d.~~e. Prior to or concurrent with the recordation of the first final development map, other than a large-lot subdivision in PA 7B, the landowner shall record an Offer of Dedication for PA 12I.

~~e.~~f. Prior to or concurrent with the recordation of the first final development map, other than a large-lot subdivision in PA 6, the landowner shall record an Offer of Dedication for PA 12G to the California Department of Parks and Recreation or the County of Orange which includes rights for both agencies to access their respective park properties[1].

~~f.~~g. The above offers shall be irrevocable continuing offers of dedication to the County of Orange or its designee for park purposes in a form approved by the Manager, EMA-Harbors, Beaches and Parks/Program Planning Division, suitable for recording fee title. The offers shall be free and clear of money and all other encumbrances, liens, leases, fees, easements (recorded and unrecorded), assessments and unpaid taxes in a manner meeting the approval of the Manager, EMA Harbors, Beaches and Parks Program Planning Division. The offers shall be in a form that can be accepted for transfer of fee title at any time by the County.

~~g.~~h. Notwithstanding the above procedures, offers of dedication may be made in a Parcel A and Parcel B sequence. Parcel A shall contain, to the greatest extent possible, the area to be included in the dedication and shall be offered for dedication at the time specified in Subsection a, b, and c above. The boundaries of Parcel A shall be determined through a review of the physical characteristics of the total planning area required for dedication excluding only those areas where the boundary for public open space cannot feasibly be determined until final development maps are processed. The boundaries of Parcel B shall be refined and offered for dedication upon the recordation of subsequent final maps for planning areas abutting the area to be dedicated. When appropriate, areas containing urban edge treatments, fuel modification areas, roads, manufactured slopes, and similar uses may be offered for dedication as scenic easements.

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[1] Planning Area 12G may be offered for dedication to the California Department of Parks and Reception as part of a future agreement to offset any acreage reductions within Crystal Cove State Park used to expand the facilities at El Morro Elementary School.

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7) 8) Landform alterations are allowed in PA 12A, PA 12B, PA 12C, ~~and~~ PA 12D and PA 12E to the extent required to accommodate realignment and construction of local collector roads, San Joaquin Hills Road, and/or the San Joaquin Hills Transportation Corridor and recreational facilities, as provided in a final Coastal Development Permit for any such ~~road~~ projects.

8) 9) Residential lot lines from adjoining properties may extend into PA 12B, PA 12C, and PA 12D, but not into PA 12A, ~~or~~ PA 12E, PA 12H or PA 12I.

D. CATEGORY "A" & "B" ENVIRONMENTALLY SENSITIVE HABITAT AREA POLICIES

The following policies apply to Category A and B ESHA's only, as delineated on Exhibit H.

1. Except for the ESHA B located in Planning Area 4A, ~~T~~the natural drainage courses and natural springs will be preserved in their existing state. All development permitted in Category A and B ESHA's shall be set back a minimum of 50 feet from the edge of the riparian habitat except as provided for in the following subsections. If compliance with the setback standards precludes proposed development which is found to be sited in the least environmentally damaging and feasible location, then the setback distance may be reduced accordingly.

   a. Where existing access roads and trails cross streams, where emergency roads are required by State or County fire officials, and/or where access roads are required to serve residential units and recreational facilities in Muddy Canyon, the drainage course may be modified to allow the construction and maintenance of existing or new road or trail crossings. Such modification shall be the least physical alteration required to maintain an existing road or to construct a new road or trail, and shall be undertaken, to the extent feasible, in areas involving the least adverse impact to stream and riparian habitat values.

   b. Where drainage and erosion control and related facilities are needed for new development and/or to protect the drainage course, the drainage course may be modified to allow construction of such facilities. Modification shall be limited to the least physical alteration required to construct and maintain such facilities, and shall be undertaken, to the extent

feasible, in areas involving the least adverse impact to the drainage course. Where feasible, drainage and erosion control and related facilities will be located outside the drainage course.

c. Where the construction ~~of Pelican Hill Road and Sand Canyon Avenue*~~ requires filling or other modification of drainage courses substantially as shown in Exhibit L ~~and N~~, drainage courses may be modified.

d. Where the construction of local collectors, ~~connecting to Sand Canyon Avenue*~~ ~~and/or San Joaquin Hills Road~~and/or utility service/emergency access roads requires filling or other modifications of drainage courses in PA 6, PA 12C, and/or the upper portion of PA 12A and where the alignment is shown to be the least environmentally damaging feasible alternative, drainage courses may be modified.

e. Where access roads and trails exist or where new emergency roads are required by State or County fire officials, vegetation may be removed in the maintenance or construction of such roads and trails. Any required vegetation removal will be minimized.

f. To the extent necessary, existing riparian vegetation may be thinned or selectively removed when required for habitat enhancement and/or fire control. Existing vegetation which is not classified as riparian may also be removed.

g. Where drainage and erosion control and related facilities are needed to implement the Master Drainage and Runoff Management Plan and related programs, vegetation may be removed in the construction and maintenance of such facilities. Vegetation removal will be limited to the least required to construct and maintain such facilities and shall be undertaken, to the extent feasible, in areas involving the least adverse impact to riparian vegetation. Where feasible, drainage and erosion control and related facilities will be located outside areas containing riparian vegetation.

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* Sand Canyon Avenue was deleted pursuant to Board of Supervisor's Resolution No. 95-561 approved on August 1, 1995.

h. Upon the recordation of an Offer of Dedication for Planning Area 12E, the ESHA B located in Planning Area 4A may be altered as required for development authorized by this LCP.

2. Where feasible, the separation of scrub and chaparral from riparian habitats will be avoided. Vegetation offering escape cover will be allowed adjacent to riparian areas wherever feasible.

3. Nothing in this section shall require the replacement or restoration of natural features which are destroyed or modified by natural causes such as fire, flood, erosion, and drought.

4. Where golf cart and pedestrian path/bridge, and fairway trajectories for the golf course cross the USGS Drainage Course in PA 10B, vegetation may be selectively thinned, maintained, removed and/ or altered within areas of the setback to the extent necessary for golf course purposes. Any such vegetation removal or alteration will be minimized and mitigated by habitat enhancement measures in Los Trancos Canyon, and will be shown to be the least environmentally damaging feasible alteration.

E. CATEGORY "C" ENVIRONMENTALLY SENSITIVE HABITAT AREA POLICIES

The Category C ESHA, as delineated in Exhibit H, contains coastal waters which have been designated a Marine Life Refuge and an Area of Special Biological Significance.

The Category C ESHA area is encompassed within Crystal Cove State Park. The protection of water quality in marine resource areas is subject to the authority of the State Water Resources Control Board. Protection of water quality is provided by the LCP Runoff Policies and will be reviewed by the Regional Water Quality Control Board in conjunction with subsequent coastal development permits and related environmental impact reports (EIR's).

A water quality monitoring program shall be submitted to the Regional Water Quality Control Board prior to initial implementing approvals for the golf course, for the purpose of monitoring runoff

entering the ocean as well as the riparian corridors[4]. Copies of the results of the monitoring program shall be forwarded to the Regional Water Quality Control Board and the County of Orange on a regular basis for their review to determine whether corrective action is required pursuant to the authority of said agencies.

Use and application of chemicals on the golf course and other landscape areas shall be limited to those approved by State, County, and Federal agencies. The landowner shall be responsible for notifying tenants and/or prospective initial purchasers of this requirement.

F. CATEGORY "D" ENVIRONMENTALLY SENSITIVE HABITAT AREA POLICIES

1. PA 10A: All drainage courses will be modified. The Riparian Habitat Creation Program will mitigate any habitat values lost as a result of drainage course modification.

2. PA 1A, PA 1B, PA 1C, PA 2A, PA 2B, PA 2C, PA 3A, PA 3B, PA 4A, PA 4B, PA 6, PA 8, PA 9, PA 10A, PA 10B, PA 11A, PA 12A, PA 12B, PA 12C, PA 12D, PA 12E, PA 12F, PA 12G, PA 12H, PA 12I, PA 12J, PA 13A, PA 13B, PA 13C, PA 13D, PA 13E, PA 13F, PA 14, PA 16A, PA 16B, PA 20A, PA 20B, and PA 20C: Vegetation and drainage courses will be modified or eliminated by development. The Open Space Dedication Programs and Riparian Habitat Creation Program will mitigate any habitat values lost as a result of such drainage course modification or elimination.

3. Construction of ~~Pelican Hill Road,~~ Newport Coast Drive, ~~Sand Canyon Avenue,~~[5] local collectors, and San Joaquin Hills Transportation Corridor will modify or eliminate vegetation and drainage courses.

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[4] The five-year Water Quality Monitoring Program began in 1991. To date, the monitoring results indicated no adverse water quality impacts on local marine waters.

[5] Sand Canyon Avenue was deleted pursuant to Board of Supervisor's Resolution No. 95-561 approved on August 1, 1995.

G. ARCHAEOLOGICAL POLICIES

1. ARCHAEOLOGICAL RECORDS SEARCH AND SURVEY

Prior to initial implementation level approvals (i.e., Coastal Development Permit, Tentative Tract, Site Plan, etc., with the exception of a large-lot subdivision for only financial/conveyance purposes), a County certified archaeologist shall be retained by the applicant to complete a literature and records search for recorded sites and previous surveys. In addition, a field survey shall be conducted by a County-certified archaeologist unless the entire proposed project site has been documented as previously surveyed in a manner which meets the approval of the Manager, County of Orange EMA - Harbors, Beaches and Parks/Program Planning Division. A report of the literature and records search and the field survey shall be submitted to and approved by the Manager, County of Orange EMA - Harbors, Beaches and Parks/Program Planning Division. Mitigation measures may be required depending upon the recommendations of this report.

2. ARCHAEOLOGICAL SUBSURFACE TEST AND SURFACE COLLECTION

Prior to the issuance of a grading permit, a County-certified archaeologist shall be retained by the applicant to perform a subsurface test level investigation and surface collection as appropriate. The test level report evaluating the site shall include discussion of significance (depth, nature, condition, and extent of the resources), final mitigation recommendations, and cost estimates. Prior to the issuance of a grading permit and based on the report recommendations and County policy, final mitigation shall be carried out based upon a determination as to the site's disposition by the Manager, County of Orange EMA - Harbors, Beaches and Parks/Program Planning Division. Possible determinations include, but are not limited to, preservation, salvage, partial salvage or no mitigation necessary.

3. ARCHAEOLOGICAL SALVAGE

If salvage or partial salvage is determined necessary by the Manager, County of Orange EMA - Harbors, Beaches and Parks/Program Planning Division per subsection 2 above, prior to issuance of a grading permit, project applicant shall provide written evidence to the Chief, EMA-Regulation/Grading Section that a County-certified archaeologist has been retained to conduct salvage excavation of the archaeological resources in the permit area. A final report shall be submitted to and approved by the Manager, County of Orange EMA - Harbors, Beaches and Parks/Program Planning Division prior to any grading in the archaeological site areas.

4. ARCHAEOLOGICAL RESOURCE SURVEILLANCE

If on-site resources surveillance is determined necessary during grading per subsection 2 above by the Manager, Harbors, Beaches and Parks/Program Planning Division, prior to issuance of a grading permit, the project applicant shall provide written evidence to the Chief, EMA-Regulation/Grading Section that a County-certified archaeologist has been retained, shall be present at the pre-grading conference, shall establish procedures for archaeological resource surveillance, and shall establish, in cooperation with the project developer, procedures for temporarily halting or redirecting work to permit the sampling, identification, and evaluation of the artifacts as appropriate. If additional or unexpected archaeological features are discovered, the archaeologist shall report such findings to the project developer and to the Manager, County of Orange EMA - Harbors, Beaches and Parks/Program Planning Division. If the archaeological resources are found to be significant, the archaeological observer shall determine appropriate actions, in cooperation with the project developer, for exploration and/or salvage. These actions, as well as final mitigation and disposition of the resources, shall be subject to the approval of the Manager, County of Orange EMA - Harbors, Beaches and Parks/Program Planning Division.

Except as may be limited by a future Costal Development Permit, on-site resource surveillance shall be provided for development grading operations in Planning Areas PA 3A, PA 3B, PA 10A, PA 10B, PA 13A, PA 13B, PA 13C, PA 13D, PA 13E, PA 13F, and PA 14.

H. PALEONTOLOGICAL POLICIES

1. PALEONTOLOGICAL RECORDS SEARCH AND SURVEY

Prior to initial implementation level approvals (i.e., Coastal Development Permit, Tentative Tract, Site Plan, etc., with the exception of a large-lot subdivision map for financial conveyance purposes), a County-certified paleontologist shall be retained by the applicant to complete literature and records search for recorded sites and previous surveys. In addition, a field survey shall be conducted by a County-certified paleontologist unless the entire proposed project site has been documented as previously surveyed in a manner which meets the approval of the Manager, County of Orange EMA - Harbors, Beaches and Parks/Program Planning Division. A report of the literature and records search and the field survey shall be submitted to and approved by the Manager, County of Orange EMA - Harbors, Beaches and Parks/Program Planning Division. Future mitigation shall depend upon the recommendations of this report.

2. PALEONTOLOGICAL PREGRADING SALVAGE

If pre-grading salvage is determined necessary per subsection 1 above by the Manager, County of Orange EMA - Harbors, Beaches and Parks/Program Planning Division, prior to issuance of a grading permit, the project applicant shall provide written evidence to the Chief, EMA-Regulation/Grading Section that a County-certified paleontologist has been retained by the applicant to conduct preconstruction salvage of the exposed resources. The paleontologist shall submit a follow-up report on survey methodology and findings to the Manager, County of Orange EMA - Harbors, Beaches and Parks/Program Planning Division for review and approval.

3. PALEONTOLOGY RESOURCE SURVEILLANCE

If on-site resource surveillance is determined necessary per subsection 1 above by the Manager, County of Orange EMA - Harbors, Beaches and Parks/Program Planning Division, prior to issuance of a grading permit, the project applicant shall provide written evidence to the Chief, EMA-Regulation/ Grading Section that a County-certified paleontologist has been retained to

observe grading activities and salvage fossils as necessary. The paleontologist shall be present at the pre-grading conference, shall establish procedures for paleontologist resource surveillance, and shall establish, in cooperation with the project developer, procedures for temporarily halting or redirecting work to permit sampling, identification, and evaluation of the fossils. If major paleontological resources are discovered, which require long-term halting or redirecting of grading, the paleontologist shall report such findings to the project developer and the Manager, County of Orange EMA - Harbors, Beaches and Parks/Program Planning Division. The paleontologist shall determine appropriate actions, in cooperation with the project developer, which ensure proper exploration and/or salvage. These actions, as well as final mitigation and disposition of the resources shall be subject to approval by the Manager, County of Orange EMA - Harbors, Beaches and Parks/Program Planning Division. The paleontologist shall submit a follow-up report for approval by the Manager, County of Orange EMA - Harbors, Beaches and Parks/Program Planning Division, which shall include the period of inspection, an analysis of the fossils found, and present repository of the fossils.

Except as may be limited by a future Coastal Development Permit, on-site resource surveillance shall be provided for development grading operations in Planning Areas PA 3A, PA 3B, PA 10A, PA 10B, PA 13A, PA 13B, PA 13C, PA 13D, PA 13E, PA 13F, and PA 14.

I. EROSION POLICIES

The Erosion Policies which follow provide the framework for the preparation of a "Master Drainage and Runoff Management Plan". This Plan shall be submitted to the County of Orange for review and approval concurrent with the first Coastal Development Permit application as required by LCP Subsection II-3-B-11[1].

1. Post-development erosion rates shall approximate the natural or existing rate before development.

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[1] A Master Drainage and Runoff Management Plan was approved by the County of Orange in December, 1989. Amendments will be prepared for all future development projects located outside the area covered by this Master Plan.

2. Areas of disturbed soil shall be reseeded and covered with vegetation; mulches may be used to cover ground areas temporarily; other mechanical or vegetative techniques to control erosion may be used where necessary. Native and/or appropriate non-native plant material selected for vegetation shall be consistent with LCP Subsection I-3-L-6.

3. Erosion control devices shall be installed in coordination with clearing, grubbing, and grading of upstream construction; the Grading Plan shall describe the location and timing for the installation of such devices and shall describe the parties responsible for repair and maintenance of such devices.

4. Erosion control measures for grading and construction done during the period from April 15 to October 15 will be implemented by October 15 and maintained as necessary through April 15. For grading and construction commencing in the period from October 15 to April 15, erosion control measures will be implemented in conjunction with the project in a manner consistent with the County of Orange Grading Code. Erosion control measures for areas not affected by grading and construction are not required.

5. Where new recreational trails are planned in open space areas, they will be located and constructed to minimize erosion.

J. SEDIMENT POLICIES

The Sediment Policies which follow provide the framework for the preparation of a "Master Drainage and Runoff Management Plan". This Plan shall be submitted to the County of Orange for review and approval concurrent with the first Coastal Development Permit application as required by LCP Subsection II-3-B-11[‡].

[‡] A Master Drainage and Runoff Management Plan was approved by the County of Orange in December, 1989. Amendments will be prepared for all future development projects located outside the area covered by this Master Plan.

1. Required sediment basins (e.g., debris basins, desilting basins, and/or silt traps) shall be installed in conjunction with the initial grading operations and maintained through the development/construction process to remove sediment from runoff.

2. To prevent sedimentation of off-site areas, on-site vegetation shall be maintained where feasible. Vegetation shall be replanted from seed/hydroseed to help control sedimentation where necessary. Native and/or appropriate non-native plant material selected for vegetation shall be consistent with LCP Subsection I-3-L-6.

3. Temporary mechanical means of controlling sedimentation such as hay bales, earth berms and/or sand-bagging around the site, may be used as part of an overall Erosion Control Plan, subject to County approval.

4. Sediment movement in the natural channels shall not be significantly changed in order to maintain stable channel sections and to maintain the present level of beach sand replenishment.

5. Sediment catch basins and other erosion control devices shall be designed, constructed and maintained in accordance with the County of Orange Grading Code.

K. RUNOFF POLICIES

The Runoff Policies which follow provide the framework for the preparation of a "Master Drainage and Runoff Management Plan". This Plan shall be submitted to the County of Orange for review and approval concurrent with the first Coastal Development Permit application as required by LCP Subsection II-3-B-11[1].

1. Peak flood discharge rates of storm water flows in the major streams shall not exceed the peak rates of storm water runoff from the area in its natural or undeveloped state, unless it can be

[1] A Master Drainage and Runoff Management Plan was approved by the County of Orange in December, 1989. Amendments will be prepared for all future development projects located outside the area covered by this Master Plan.

demonstrated that an increase in the discharge of no more than 10% of the natural peak rate will not significantly affect the natural erosion/beach sand replenishment process.

2. Drainage facilities shall be designed and constructed in accordance with the County of Orange Flood Control District Design Manual.

3. Storm runoff water shall be directed to storm drains or suitable water courses to prevent surface runoff from damaging faces of cut and fill slopes.

4. Adequate maintenance of retention basins shall be assured as a precondition to the issuance of grading permits.

5. Natural drainageways will be rip-rapped or otherwise stabilized below drainage and culvert discharge points in accordance with County of Orange policies.

6. Runoff from development will be conveyed to a natural drainageway or drainage structure with sufficient capacity to accept the discharge.

L. GRADING POLICIES

1. Prior to implementation level development approvals (i.e., tentative tract, site plan, etc.), the applicant shall submit soils engineering and geologic (if appropriate due to slope conditions) studies as necessary to the Manager, County of Orange EMA Development Services Division (DSD). These reports will assess potential soil related constraints and hazards such as slope instability, settlement, liquefaction, or related secondary seismic impacts as determined appropriate by the DSD Manager. All reports shall recommend appropriate mitigation measures and be completed in the manner specified in the County of Orange Grading Manual and State/County Subdivision Ordinance. Pursuant to the Orange County Grading Code, the permit applicant shall provide a schedule showing when each stage and element of the project will be completed, including estimated starting and completion dates, hours of operation, days of week of operation, and the total area of soil surface to be disturbed during each stage of construction.

2. Grading allowed between October 15 and April 15 shall be subject to the Erosion, Sediment, Runoff, and Grading Policies herein and the provisions of the County of Orange Grading Code.

3. Temporary stabilization techniques may be used on areas which will be redisturbed during future construction. Permanent stabilization techniques must be used in all other areas.

4. Disposal of earthen materials removed during any development operations shall be as follows:

   a. Top soil for later use in revegetation shall be stockpiled on the site in previously designated areas approved by the permit-issuing authority. Runoff from the stockpiled area shall be controlled to prevent erosion.

   b. Other earthen material shall be disposed at locations approved by the permit issuing authority.

   c. Except for necessary drainage improvements and/or erosion control modifications, no materials shall be placed within the 100 year flood-plain of coastal waters and/or streams.

5. Where construction activities during the rainy season would involve substantial foot or vehicle traffic, or stockpiling of materials in a manner that would prevent establishment of temporary vegetation, alternative temporary stabilization methods shall be used.

6. All cut and fill slopes in a completed development involving grading shall be stabilized through planting of native annual grasses and shrubs, or appropriate non-native plants valuable for erosion protection. All cut and fill slopes shall be planted under the direction of a licensed landscape architect, sufficient to provide a mixture of deep rooted permanent plants and nursery crops valuable for temporary stabilization.

7. Removal of natural vegetation will be limited to graded areas, access/haul roads, and areas required for fuel modification. Construction equipment shall be limited to the approved area to be disturbed except for approved haul roads.

8. All residential Planning Areas: The visual effect of grading required for housing will be minimized and/or mitigated by contouring as follows:

   a. A smooth and gradual transition between graded and natural slopes will be maintained.

   b. A variety of different slopes will be used to reflect a natural appearance.

9. In PA 3A and PA 3B, houses adjacent to Pacific Coast Highway will be separated from Pacific Coast Highway by a change in grade.

10. In PA 9, cuts and fills will be balanced on-site.

11. In PA 10A and PA 10B, the visual effect of grading will be minimized and/or mitigated by contouring as follows:

   a. For final slopes, the angle of the graded slope shall be gradually adjusted to the angle of the natural terrain.

   b. For final slopes, sharp, angular forms shall be rounded and smoothed to blend with the natural terrain.

12. Grading shall be allowed in those portions of PA 5, PA 6, PA 12A, PA 12B, PA 12C, PA 12D, and PA 17 ~~adjacent to Sand Canyon Avenue~~* to the extent required to accommodate road alignments, ~~connects~~connections, and/or improvements ~~of San Joaquin Hills Road and/or San Joaquin Hills Transportation Corridor~~ as provided in a Coastal Development Permit(s) for any such road project(s).

13. All grading will conform to the County of Orange Grading Ordinance.

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* Sand Canyon Avenue was deleted pursuant to Board of Supervisor's Resolution No. 95-561 approved on August 1, 1995.

M. DEVELOPMENT/OPEN SPACE EDGES POLICIES

The edge conditions throughout The ~~Irvine~~Newport Coast vary greatly and the lines shown on the Land Use ~~Map~~Plan show approximate development/open space boundaries which will be more precisely located with subdivision map submittals.

Along appropriate edges of PA 11A, PA 12A, PA 17, and PA 21B, one or more of the following or other treatments will be used to protect open space and habitat values from development, protect public views, and/or provide fire safety.

1. Landscape screening (including low walls, shrubs, and/or trees) and topographic screening (including berms and contour grading) will soften development edges visible from public areas.

2. In PA 3A, ~~and~~ PA 3B and PA 14, ~~to soften development edges, a portion of the exposed wall and roof visible from Pacific Coast Highway area of each house will be screened with vegetation, while maintaining views from each site. Ancillary buildings, tennis courts, and swimming pools will be screened. In PA 3A and PA 3B,~~ the building setback from Pacific Coast Highway will be 100 feet for landscaping and buffering purposes.

3. In PA 6, where dwelling units are proposed on ridgelines and within 200 feet of the boundary of public recreation lands, setbacks, landscape screening, and topographic screening will be used to soften the visual impact of development as viewed from public lands.

4. Where development adjoins coastal scrub and chaparral in dense stands, an "ecotone" area will be created by thinning out woody plants in the buffer zone. Within the "ecotone" area grasses will be introduced or allowed to invade the open spaces. Such an "ecotone" will enhance and protect wildlife and reduce fuel for fires, and will utilize either native California or non-invasive non-native plants. The establishment and maintenance of the "ecotone" area shall conform to the requirements of the County of Orange Fire Marshall.

5. Fuel modification, including selective thinning of natural vegetation, clearing and revegetation, introduction of fire resistant vegetation, installation of irrigation, may be required in order to ensure an appropriate transition from the natural area to urban development.

   - Reasonable efforts will be made in the siting of structures and selection of construction materials to minimize the need for fuel modification.

   - Where feasible and consistent with habitat management objectives, fuel modification will be located toward the development side of the edge.

   - Grading or discing for fuel modification shall not be permitted.

6. A program of fuel modification zones and/or firebreaks shall be formulated as required. The width and type of the fuel modification zone will be determined by the siting of structures, access of firefighters, density of vegetation, terrain, direction of prevailing breezes, etc.

7. Appropriate fire protection for structures in high fire-potential areas in The ~~Irvine~~Newport Coast Planned Community shall be provided by using fire-resistant building materials and adequate setbacks when required on natural slopes. The County-adopted "Fire Prevention Planning Task Force Report" shall be used as the basis for fire-prevention, subject to the following standards and fuel modification descriptions:

   a. Fire hazard potentials shall be determined for projects proposed within the hillside areas by a landscape architect. Factors such as types and moisture content of existing vegetation, prevailing winds, and topography shall be used to determine areas of fire hazard potential. Areas shall be ranked and mapped to identify fire prevention treatments and fuel modification zones. (For example, low fire hazard areas are located where existing vegetation has a year-around high moisture content and the topography is relatively flat. Steep narrow canyons have a much higher fire hazard potential because heat and winds concentrate to drive the fire upwards much like a chimney.)

b. A combination of techniques, including required building materials such as tile roof treatments, setback restrictions for combustible construction, irrigated buffer zones, and graduated fuel modification zones which entail selective removal of a percentage of the vegetative fuels, shall be used to lessen fire hazards. The minimum amount of native vegetation shall be selectively thinned to control the heat and intensity of wildland fires as they approach a residential area while preserving to the maximum extent feasible the quality of the natural areas surrounding the site.

c. A Fuel Modification Plan shall be required and approved by the Director of Planning/EMA prior to obtaining any building or grading permits. The Plan shall identify appropriate setbacks and widths of fuel modification, amounts and types of vegetation to be removed and retained, and specify proposed irrigation methods to reduce the risk of fire in hillside areas. The Plan shall be approved by the Orange County Fire Department prior to submittal to the Director of Planning/EMA.

d. Fuel Modification Plans shall be prepared as a condition of development to protect as much of the existing native vegetation as possible while providing adequate protection for residential structures from fire hazards. In no event shall thinning of more than 30% of native vegetation extend beyond 170 feet from the outward edge of residential structures (or 150 feet from the 20-foot backyard setback) in the extreme fire hazard potential areas. Fuel modification shall not occur beyond 250 feet from the 20-foot backyard setback in the extremely hazardous zones. Fuel modification in low fire hazard potential areas shall not extend more than 175 feet. Minimal irrigation during dry periods and fire represent sprinklers for native vegetation are preferred methods to reduce the width or area of fuel modification.

The intent of the Fuel Modification Plan is not to create a static 250-foot wide band surrounding development, but rather an undulating width that reflects topography and fire hazards potential. The band shall be as narrow as possible to protect proposed structures, but in no event wider than 250 feet in extreme hazardous areas.

e. No combustible structures including, but not limited to, houses, wood decks, sheds, gazebos, and wood fences shall be located within a 20-foot backyard setback as measured from the outward property line. Irrigation systems must be installed and operated within this setback to ensure a reasonable moisture content in planted areas.

f. Annual maintenance shall be addressed in the Fuel Modification Plan approved as part of the Coastal Development Permit Procedure specified in LCP Chapter II-10. A public hearing shall be required to assure compliance with fuel modification standards and guarantee that the least amount and correct species of vegetation are thinned in accordance with the approved Fuel Modification Plan. Fuel Modification Plans proposing vegetation alterations within the PC (CD) District Appeals Jurisdiction may be subject to appeal review by the California Coastal Commission as provided for in the PC (CD) District Regulations.

g. As a condition of Final Tract Map approval, project developers shall record deed restrictions that acknowledge the fire hazard potential and assign responsibility for maintenance of fuel modification zones and programs.

h. Access roads, trails, or fire roads may be located within fuel modification areas to reduce alteration of native vegetation.

i. The risk of fire adjacent to PA 9, the golf course, and other lower/landscape areas is substantially less than that at the tops and upper slopes of ridges. Therefore, a limit for fuel modification in this area shall be 150 feet from any habitable structure. In no event shall grading occur in the Conservation Planning Areas, and any vegetative thinning and/or replanting shall be limited to within 150 feet of the structure. Likewise, this is the maximum distance for fuel modification and flexibility for narrower widths is appropriate.

8. Where native specimen vegetation is retained within fuel modification areas, these areas shall be properly maintained to minimize fire risk.

9. Fuel breaks necessary for the protection of life and property as determined by the County Fire Marshall shall be provided for development areas. Fuel modification shall be limited to zones established adjacent to proposed development. Graduated clearing and trimming shall be utilized within these zones to provide a transition between undisturbed wildland areas and the development edge. Clearing or removal of native vegetation for fuel modification purposes shall be minimized by placement of roads, trails, and other such man-made features between the development and wildland areas. To minimize fuel modification area, other techniques (such as perimeter roads, design techniques, elimination of wood balconies and decks, fire retardant siding and tile roofs) shall be incorporated in the design and development of projects.

10. Adequate roads, water sources, and needed fire protection services shall be provided concurrent with development, located within or immediately adjacent to the developed area.

BIOLOGICAL EVALUATION OF THE ENVIRONMENTALLY SENSITIVE HABITAT AREAS (ESHAS) WITHIN PLANNING AREAS 4A, 4B, 5, 6, AND 12B OF THE NEWPORT COAST "CRYSTAL COVE" DEVELOPMENT

This document provides a description of the hydrological, physical, and biological conditions of the drainage courses that have been designated as Environmentally Sensitive Habitat Areas ("ESHAs") within proposed development areas (Planning Areas ("PA") 4A, 4B, 5, 6, and 12B) covered by the Master Coastal Development Permit ("MCDP"), Seventh Amendment. The information is based upon the biological work on the MCDP, Seventh Amendment area conducted by LSA, Inc. ESHAs are defined in Coastal Act Section 30107.5 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."

As noted in the Newport Coast Local Coastal Program ("LCP"), the "habitat value along the length of individual drainage courses and among different drainage courses is not equal." (Newport Coast LCP at I-2.3.) This assessment provides a description of the nature and quality of the habitat conditions present in the ESHAs within five enumerated planning areas. Based upon the extensive surveys of the project for the EIR and the Section 404 permit process, and the evaluation conducted for this report, the habitat values along the drainages described herein are considerably different in size, habitat characteristics, and function from many of the drainage courses within the Newport Coast LCP's areas of protected open space. Of the five identified planning areas, four are proposed for residential development: PA 4A, 4B, 5 and 6. PA 12B is designated Recreation, and is planned for passive recreation uses only. With the exception of an ESHA Category B in PA 4A, all of the designated ESHAs within these planning areas are classified as ESHA Category D.

A. *ANALYSIS OF "B" ESHA AND "D" ESHA DRAINAGES*

This report summarizes LSA's survey of each of these ESHAs to assess the condition of the individual ESHAs. As a result of its work, LSA has determined that the "D" ESHA drainages do not exhibit any riparian characteristics and thus are consistent with the LCP conclusion that "ESHA category D designates USGS Drainage courses which are deeply eroded and of little or not riparian value."

All of the surveyed Category D and the one Category B ESHAs in the enumerated planning areas are strictly ephemeral drainage courses, i.e., they conduct flows of water only during or immediately after rainstorms. The drainage courses are incised to varying degrees, and are formed by erosion associated with strictly local runoff. These local erosional forces are high due to the steep topography and associated velocities of the runoff water and absence of riparian habitat. In many cases, the actual bottom of the channel is scoured of vegetation. Weedy grass species frequently occupy the more open areas during the dry season, and where scrub or chaparral vegetation occurs, the canopy often covers the drainage course, obscuring it from view. Since the B ESHA located in PA 4A likewise is an ephemeral drainage with no riparian vegetation, the 1996 LCP Findings regarding the conversion of this area are supported by the absence of any ESHA values in this particular drainage.

The following is a specific description of each of the designated ESHA's in the proposed development areas, with the approximate locations shown on the attached vegetation map.

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ESHA D1 - PA 4B

This is a very short (approximately 200 feet) remnant of a drainage course, most of which was located in PA 3B. (PA 3B has now been graded and the drainage course in that area removed.) The eroded bottom of this drainage course is less than two feet wide. This channel is located entirely within annual grassland habitat, which is typified by a variety of non-native, weedy species. No riparian habitat is associated with this remnant drainage course.

ESHA D2- PA 4A

The ESHA designated portion of the drainage is approximately 1,200 feet long within the development area, and on very steep ground, which accounts for the maximum width of eight feet near the lower end. The upper end ranges in bottom width from two to four feet. Much of the vegetation in the bottom of the drainage is chaparral, particularly on the east facing slopes. The remaining vegetation in and adjacent to the drainage course is coastal sage scrub, which is the predominant vegetation in this area of the project.

ESHA D3 - PA 4A AND 4B

The ESHA designated portion of this drainage is approximately 3,200 feet long, ranging in width from approximately eight feet near the bottom to two feet at the upper end. South of the MCDP, Seventh Amendment project area, this drainage course has been graded and placed in a storm drain facility, in accordance with the Newport Coast LCP and previous coastal development permits. The lower two-thirds of this drainage course is in annual grassland habitat. The upper one third is coastal sage scrub habitat. Simply put, this drainage does not support riparian habitat and is a result of steep topography and resulting erosion within an upland, grassland area.

ESHA D4 - PA 5 AND 6

This drainage is also approximately 2,600 feet long, within Pas 5 and 6, ranging in width from five feet near the bottom to two feet near the upper end. This area is fairly steep, thus not permitting water within this drainage to pond or promote the growth of wetland or riparian vegetation. Most of the vegetation in and adjacent to this drainage is coastal sage scrub. There are some patches of chaparral vegetation in the southern end, and one small area of upland oak trees associated with the chaparral. There are also some patches of grassland habitat adjacent to the drainage at the upper end.

ESHA B1 - PA 4A

Although this drainage was designated as a Category B ESHA in the Newport Coast LCP, it is difficult to determine its classification based upon current habitat conditions. According to the Newport Coast LCP, a Category B ESHA should support small amounts of riparian vegetation. This Category B ESHA, however, does not support riparian habitat and is much more similar in character to the Category D ESHAs described above. Similar to the Category D ESHAs, this drainage is located on a steep drainage course, thereby allowing water to flow through the course quickly with no ponding. It is similar in width to D3 above, and is approximately 2,200 feet long. This drainage course is located strictly within an upland habitat area. The vegetation on the northerly facing slopes is chaparral, and the vegetation on the more exposed southerly slopes is coastal sage scrub.

Summary

In summary, all of the ESHAs described and evaluated in this report are ephemeral in character with virtually no riparian characteristics. All of these drainages are located in areas of steep topography which promote the rapid runoff of water, leaving little vegetation on the channel bottoms and only upland vegetation on the banks and adjacent areas. As described in the Newport Coast LCP, ESHAs were to encompass natural drainage courses, riparian vegetation associated with the drainage courses, coastal waters, wetlands and estuaries. Despite their LCP designation, however, none of these ESHAs support riparian vegetation or carry water for any longer than it takes runoff to flow through after a rain event. Consequently, there is insufficient water in these drainages to promote the growth of riparian vegetation, and because of the speed at which water flows through these drainages, portions of these drainages are scoured of any vegetation.

B. *ANALYSIS OF UPLANDS HABITAT VALUES IN THE PROJECT DEVELOPMENT AREA*

In general, the habitat associated with these drainages is the same upland habitat that occurs throughout the MCDP, Seventh Amendment project area. The upland habitat is primarily chaparral, with areas of coastal scrub and grassland. Although coastal sage scrub has in some areas been considered a sensitive habitat because of its connection to the California gnatcatcher, the coastal sage scrub in all of the surveyed areas do not represent occupied habitat. Its lack of uniqueness or special habitat value was officially confirmed by the decision of the California Department of Fish and Game and the U.S. Fish and Wildlife Service in approving the Central Coast Natural Communities Conservation Plan (NCCP) – the impact of which on the Newport Coast LCP was considered, reviewed and approved by the California Coastal Commission. The 1996 LCP Second Amendment addressing the project area specifically reviewed and approved the NCCP Reserve design in conjunction with the LCP Second Amendment and concluded that these areas were appropriate for development and did not provide unique or valuable habitat worthy of NCCP reserve designation.

The distribution of land uses and relationship to open space areas reflected in the LCP Second Amendment were strongly supported by the NCCP subregional plan because they provided for improved protection and functioning of the coastal sage scrub ecosystem as part of the NCCP Coastal subarea reserve design. The LCP Second Amendment involved a substantial increase in open space on Wishbone Ridge (over a mile of new open space area was provided) with a corresponding improvement in habitat "connectivity" and overall increase in protected habitat, in order to further several Coastal Act and NCCP goals and policies. As a result, the original July 1996 NCCP/HCP Coastal subarea reserve design was significantly enhanced by improving "connectivity" of wildlife movement between Crystal Cove State Park habitat areas and Los Trancos Canyon. The NCCP "habitat connectivity" benefits of the LCP Second Amendment were documented as follows:

- *Wishbone Ridge Open Space:* The substantial increase in open space committed to the NCCP Reserve System on Wishbone Ridge provides for significantly improved habitat connectivity between Muddy Canyon/Crystal Cove State Park and Los Trancos Canyon (see NCCP/Second Amendment Attachment, Exhibit 3, "LCP Second Amendment" focus map).

- *Moro Sliver Open Space:* The commitment of the Moro Sliver to the NCCP Reserve System provides for direct habitat connectivity and wildlife movement from the Moro Canyon area of Crystal Cove State Park to the portions of the NCCP Reserve System inland of the San Joaquin Hills Transportation Corridor ("SJHTC") via a Transportation Corridor wildlife undercrossing (see NCCP/Second Amendment, Exhibit 3).

- *Deletion of Sand Canyon Avenue and the Sand Canyon/SJHTC Interchange:* The deletion of Sand Canyon Avenue eliminated major grading impacts that would have been required on Wishbone Ridge, thereby increasing protected habitat and removing traffic impacts on terrestrial wildlife. The deletion of the Sand Canyon/SJHTC Interchange eliminated grading impacts and road construction in the area that provides the connectivity benefits described above under the "Moro Sliver Open Space" summary (see NCCP/Second Amendment, Exhibit 4).

- *Deletion of the San Joaquin Hills Road Extension to the SJHTC:* The San Joaquin Hills Road extension would have been constructed just outside the coastal zone. The deletion of this road extension has benefits within the coastal zone because its elimination contributed significantly to the decision to remove the Sand Canyon Avenue/SJHTC interchange from the County's Master Plan of Arterial Highways and also reduced habitat impacts within portions of the NCCP Reserve System outside the coastal zone (see NCCP/Second Amendment, Exhibit 4).

- *Overall Increase in Protected Coastal Sage Scrub Habitat.* Exhibit 2 in the NCCP/Second Amendment Attachment depicts the net changes in "protected/impacted" coastal sage scrub habitat. Overall there is a net increase in protected coastal sage scrub habitat. More importantly, the protected habitat is located in areas with considerable "habitat connectivity" significance and occupied gnatcatcher habitat as described above.

The Coastal Commission's 1996 LCP Second Amendment findings recognized the above-summarized habitat and open space benefits resulting from transferring development -- development that is otherwise allowed by the certified LCP and a recorded development agreement -- to the frontal slope areas of Wishbone Hill as clearly offsetting the reduction in open space on the frontal slopes of Wishbone resulting in increased visual impacts and the impacts on the Category B ESHA on one edge of Los Trancos Canyon. (Policy D. 1. h.: "Upon the recordation of an Offer of Dedication for Planning Area 12E, the ESHA B located in Planning Area 4A may be altered as required for development authorized by this LCP.") Accordingly, the approval of the 1996 LCP Second Amendment and the NCCP Amendment reflect the collective judgment of the Coastal Commission, U.S. Fish and Wildlife Service and California Department of Fish and Game that: (a) the LCP/NCCP protects sensitive upland habitats within areas included in the NCCP Reserve System and (b) Wishbone Hill development areas do not contain resource areas warranting permanent protection.

Under the approved NCCP, coastal sage scrub habitats, chaparral in the NCCP Coastal Subarea Reserve and oak woodlands are defined as "covered habitats," which means that the reserve system protects so much of these habitat types that no further mitigation is required (see Section 8.6 of the NCCP/HCP Implementation Agreement). The original NCCP reserve design was approved by USFWS and CDFG with development both on Wishbone Ridge and the frontal slopes of Wishbone Hill. Both agencies endorsed the LCP Second Amendment as an improvement on the reserve design as originally approved.

Since the coastal sage scrub habitat within the development areas on Wishbone Hill have been formally approved for conversion by the NCCP/HCP under the federal Endangered Species Act and the state NCCP statute (including the California ESA), there is no substantive basis for the Coastal Commission to designate development area coastal sage scrub and chaparral as an "ESHA" under the LCP policies or pursuant to Coastal Act Section 30240.

In conclusion, the ESHA "B" and "D" drainages do not support wetland or riparian habitat, do not provide habitat for sensitive species that are associated with drainage courses, and do not provide habitat of unique or special value within the ecosystem of the Newport Coast. Given the extensive amount of open space that has been permanently protected under the Newport Coast LCP that contain drainage courses with significant riparian and wetland habitat, and the protection afforded by the NCCP to coastal sage scrub habitat, chaparral and oak woodland, and dependent species within the Newport Coast, it is our conclusion that the proposed impacts to these drainages will not result in the loss of habitats that would be considered "rare or especially valuable because of their special nature or role in an ecosystem."

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ADDENDUM TO DELINEATION OF WETLANDS AND JURISDICTIONAL WATERS AND CALCULATION OF IMPACTS TO WATERS - CRYSTAL COVE/NEWPORT COAST PHASES IV-3 & IV-4, ORANGE COUNTY, CALIFORNIA - WATERS SUBJECT TO U.S. ARMY CORPS OF ENGINEERS, CALIFORNIA COASTAL COMMISSION, AND CALIFORNIA DEPARTMENT OF FISH & GAME REGULATORY AUTHORITY

August 30, 1999

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Ex. 19

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INTRODUCTION

LSA Associates, Inc. (LSA) previously conducted a wetlands delineation of the Crystal Cove/Newport Coast Phases IV-3 & IV-4 project area (LSA, 1998) according to the Corps of Engineers (Corps) Wetlands Delineation Manual (Environmental Laboratory, 1987). This addendum provides a reexamination of this delineation, as well as the calculation of impacts for those waters subject to impacts by the proposed project. In particular, this addendum focuses on potential differences in the identification of wetlands arising from the Corps manual and the Coastal Act definition of wetlands, as provided in Section 30121 of the Coastal Act and Title 14 §13577 of the Coastal Commission regulations. In addition, this addendum considers any changes in the potential jurisdictional areas that may have occurred since the fieldwork for the original Corps delineation was completed in 1997.

According to the California Coastal Commission regulations, wetlands are defined as "land where the water table is at, near, or above the land surface long enough to promote the formation of hydric soils or to support the growth of hydrophytes." Based on this definition, LSA re-examined the wetlands that will be affected during project construction, and the results of this follow-up site survey are included here.

METHODS

On August 23, 1999, LSA biologist Jim Harrison conducted a focused survey of three distinct areas on site composed of small depressions, each of which was previously determined to be isolated, seasonal wetlands, as confirmed by the Corps. For each depression, the vegetation and soils were evaluated, and color photographs were taken. Vegetation was sampled in three randomly selected, one meter square plots located within each of the depressions. Data were recorded on vegetation data sheets (Appendix A). Representative soil samples were evaluated for each depression by characterizing the composition of the soil and by using Munsell Soil Color Charts (1994).

On August 24, 1999, LSA biologist Jim Harrison conducted a focused survey of the segment of Muddy Canyon Creek where a proposed detention basin and dam will be constructed. Potential jurisdictional limits were reevaluated based on the Coastal Commission's definition of wetlands. The channel widths of these wetland limits were measured at relatively regular intervals along the segment of creek to be affected. In addition, the dominant and subdominant plant species present within the wetlands were recorded.

RESULTS

SEASONAL WETLAND DEPRESSIONS

On the upper part of Wishbone Ridge, there are four small, artificially created depressions (two of which are adjoining) in three distinct locations. Hydric indicators are typically difficult, if not impossible, to observe in sandy soils, such as those that occur

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in the small depressions. Evidence of inundation, i.e., an aquic moisture regime, included the presence of cracked or dried surface soils. LSA biologists have observed standing water in these small depressions on several occasions during previous years, particularly during and after the rainy season. These depressions are hydrologically isolated and supported solely by rainwater. In addition, the presence of a low chroma matrix (i.e., chroma of one) in one of the depressions having a sandy loam soil is also indicative of hydric soils.

Hydrophytic vegetation is prevalent in each of the depressions. The dominant hydrophytes present during the current survey include common cocklebur (*Xanthium strumarium*), rabbitfoot grass (*Polypogon monspeliensis*), English ryegrass (*Lolium perenne*), coast goldenbush (*Isocoma menziesii* var. *vernonioides*), and spreading rush (*Juncus patens*). The dominant upland plant species found to occur at the time of the site survey include soft chess (*Bromus hordeaceus*), narrow-leaved filago (*Filago gallica*), tall wreath-plant (*Stephanomeria virgata* ssp. *virgata*), fascicled tarweed (*Hemizonia fasciculata*), and shortpod mustard (*Hirschfeldia incana*). Copies of the vegetation data sheets, one completed for each depression during the site visit, are provided in Appendix A. These data sheets provide a basis for determining dominance of vegetation based on the percentage of cover of each species sampled.

The presence of hydric soil indicators and the prevalence of hydrophytes satisfy the Coastal Commission's definition of wetlands. The areas meeting the Coastal Commission definition and the Corps wetland criteria are virtually coincident.

MUDDY CANYON CREEK WETLANDS

The main creek channel in the bottom of Muddy Canyon, at the location of the proposed detention basin and dam, has conveyed perennial flows in each of the last two years, as evidenced by the presence of water in the creek virtually year-round. Water was observed flowing in the creek during the current survey, conducted well into the dry season of the year following a drier than normal winter. This perennial inundation clearly confirms the presence of an aquic moisture regime, which is a strong indicator of hydric soils. Prior to the wetter than normal season of 1997/1998 (the *El Nino* year), flows in this area were observed to be intermittent.

In addition, the dominant plant species present within the segment of the creek to be impacted are all facultative wetland (FACW) or obligate wetland (OBL) hydrophytes. These hydrophytes include coast goosefoot (*Chenopodium macrospermum* var. *halophilum*), ditch polypogon (*Polypogon interruptus*), rabbitfoot grass (*Polypogon monspeliensis*), common cocklebur (*Xanthium strumarium*), and dominant clusters of mulefat (*Baccharis salicifolia*) and arroyo willow (*Salix lasiolepis*). Other plant species typically associated with riparian habitat conditions such as these include mugwort (*Artemisia douglasiana*), poison oak (*Toxicodendron diversilobum*), California wild rose (*Rosa californica*), giant wild-rye (*Leymus condensatus*), wild celery (*Apium graveolens*), hoary nettle (*Urtica dioica* ssp. *holosericea*), prickly lettuce (*Lactuca serriola*), tree tobacco (*Nicotiana glauca*), bristly ox tongue (*Picris echioides*), Douglas' nightshade (*Solanum douglasii*), common plantain (*Plantago*

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major), and Bermuda grass (*Cynodon dactylon*). A portion of the proposed channel impact area was not dominated by hydrophytes in 1997.

The current presence of hydric soils and the prevalence of hydrophytes satisfy the Coastal Commission's definition of wetlands. The areas currently meeting the Coastal Commission definition and the Corps wetland criteria are virtually coincident. Since completion of the original Corps delineation fieldwork in 1997, the wetland area now includes an area in the location of the proposed detention basin and dam that was previously mapped as non-wetland waters of the U.S.

EPHEMERAL DRAINAGES

The remaining drainages within the proposed project impact area are ephemeral, i.e. they are wet only during rain runoff periods and do not support a water table at or near the land surface. These drainage courses are dominated by upland vegetation types, i.e., coastal sage scrub, chaparral, and grassland. Due to the absence of hydric soils and hydrophytic vegetation, the ephemeral drainages do not meet the Coastal Commission definition of wetlands.

WETLANDS IMPACTS ANALYSIS

For this analysis, wetland impacts were calculated by careful measurements in the field of the widths and lengths of the wetland areas that would be affected with the proposed project. Previous impact calculations, which were provided to the Corps, were based on computer calculations (using Geographic Information Systems) of wetland areas as depicted on the jurisdictional map. These earlier calculations are considered "generous," i.e., they identified slightly more wetland area, due to the inclusion of line widths in the wetland areas.

With regard to the small depressions located on Wishbone Ridge, the proposed project will result in the loss of 0.05 acre of wetlands, per the Coastal Commission wetland definition and Corps wetlands criteria.

Regarding the segment of Muddy Canyon Creek where a detention basin and dam are proposed, approximately 0.12 acre of Coastal Commission wetlands will be affected during project related construction. The Corps' wetlands impact area in this segment of the creek was previously based on an estimated width of 12 feet for the bottom of Muddy Canyon, over the approximately 460 linear feet of proposed channel impacts, for a total of 0.13 acre. Actual widths of areas meeting Corps wetland criteria, as measured in the field for this addendum in the specific impact area, were nearer to eight feet in most locations, for a total Corps wetland impact of 0.08 acre. However, the average width of hydrophytic riparian vegetation is 11 feet. Therefore, the measured wetland impact area is 0.08 acre under the Corps wetland criteria and 0.12 acre under the Coastal Commission definition.

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APPENDIX A

DATA SHEETS FOR VEGETATION ANALYSIS

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COMPREHENSIVE WETLAND VEGETATION ANALYSIS

LSA

Applicant: The Irvine Company Date: 23 August 1999 Project: Crystal Cove/NC Phases IV-3 & IV-4

Location: Depression No. A; upper Wishbone Ridge Plot No.: A Determined By: Jim Harrison

HERBACEOUS PLANT SPECIES	WETLAND INDICATOR	QUADRATS (% COVER CLASS MIDPOINTS/SPECIES) 1	2	3	4	5	6	7	8	Σ	AVG.	RANK	"50+20" DOMIN.
Polypogon monspeliensis	FACW+	77.0	77.0	24.0						178	59.3	1	X
Lolium perenne	FAC*	50.5	77.0	50.5						178	59.3	1	X
Bromus diandrus	UPL	2.5	—	9.0						11.5	3.8	3	
Hirschfeldia incana	UPL	2.5	—	50.5						53	17.7	2	

TOTAL SUM OF AVERAGES: 140.1

50% Threshold [0.50(∑avg.)] = 70.1

20% Threshold [0.20(∑avg.)] = 28.0

Cover Classes	7	6	5	4	3	2	1
Percent Cover	97-100	88-96	67-87	35-66	14-34	5-13	1-4
Midpoints	98.5	92.0	77.0	50.5	24.0	9.0	2.5

Ex 10

COMPREHENSIVE WETLAND VEGETATION ANALYSIS

LSA

Applicant: The Irvine Company Date: 23 August 1999 Project: Crystal Cove/NC Phases IV-3 & IV-4

Location: Depression No. B ; upper Wishbone Ridge Plot No.: B Determined By: Jim Harrison

HERBACEOUS PLANT SPECIES	WETLAND INDICATOR	QUADRATS (% COVER CLASS MIDPOINTS/SPECIES) 1	2	3	4	5	6	7	8	Σ	AVG.	RANK	"50+20" DOMIN.
Polypogon monspeliensis	FACW+	77.0	50.5	92.0						219.5	73.2	1	X
Lolium perenne	FAC*	24.0	2.5	9.0						35.5	11.8	3	
Hemizonia fasciculata	UPL	24.0	24.0	24.0						72	24.0	2	
Stephanomeria virgata	UPL	2.5	24.0	2.5						29	9.7	4	
Bromus hordeaceus	FACU-	2.5	2.5	2.5						7.5	2.5	7	
Xanthium strumarium	FAC+	—	24.0	—						24	8.0	5	
Hirschfeldia incana	UPL	—	9.0	2.5						11.5	3.8	6	
Bromus madritensis rubens	UPL	—	2.5	—						2.5	0.8	8	
Bromus diandrus	UPL	—	—	2.5						2.5	0.8	8	

TOTAL SUM OF AVERAGES: 134.6

50% Threshold [0.50(∑avg.)] = 67.3

20% Threshold [0.20(∑avg.)] = 26.9

Cover Classes	7	6	5	4	3	2	1
Percent Cover	97-100	88-96	67-87	35-66	14-34	5-13	1-4
Midpoints	98.5	92.0	77.0	50.5	24.0	9.0	2.5

COMPREHENSIVE WETLAND VEGETATION ANALYSIS

LSA

Applicant: The Irvine Company Date: 23 August 1999 Project: Crystal Cove/Newport Coast Phases IV-3 & IV-4

Location: Depression No. C1; upper Wishbone Ridge Plot No.: C1 Determined By: Jim Harrison

HERBACEOUS PLANT SPECIES	WETLAND INDICATOR	QUADRATS (% COVER CLASS MIDPOINTS/SPECIES) 1	2	3	4	5	6	7	8	Σ	AVG.	RANK	"50+20" DOMIN.
Polygogon monspeliensis	FACW+	77.0	24.0	50.5						151.5	50.5	1	X
Lolium perenne	FAC*	24.0	50.5	24.0						98.5	32.8	2	X
Bromus hordeaceus	FACU-	24.0	50.5	24.0						98.5	32.8	2	X
Stephanomeria virgata	UPL	—	2.5	—						2.5	0.8	4	
Avena sp.	UPL	—	—	9.0						9.0	3	3	
Rumex crispus	FACW-	—	—	2.5						2.5	0.8	4	

TOTAL SUM OF AVERAGES: 127.9

50% Threshold [0.50(∑avg.)] = 64.0

20% Threshold [0.20(∑avg.)] = 25.6

Cover Classes	7	6	5	4	3	2	1
Percent Cover	97-100	88-96	67-87	35-66	14-34	5-13	1-4
Midpoints	98.5	92.0	77.0	50.5	24.0	9.0	2.5

Exh 9

COMPREHENSIVE WETLAND VEGETATION ANALYSIS

LSA

Applicant: The Irvine Company Date: 23 August 1999 Project: Crystal Cove/NC Phases IV-3 & IV-4

Location: Depression No. C2; upper Wishbone Ridge Plot No.: C2 Determined By: Jim Harrison

HERBACEOUS PLANT SPECIES	WETLAND INDICATOR	QUADRATS (% COVER CLASS MIDPOINTS/SPECIES) 1	2	3	4	5	6	7	8	Σ	AVG.	RANK	"50+20" DOMIN.
Bromus hordeaceus	FACU-	50.5	50.5	50.5						151.5	50.5	1	X
Isocoma menziesii veronioides	FAC+	24.0	9.0	—						33	11	3	
Brachypodium distachyon	UPL	2.5	9.0	—						11.5	3.8	5	
Filago gallica	UPL	9.0	24.0	9.0						42	14	2	X
Stephanomeria virgata	UPL	2.5	2.5	—						5	1.7	6	
bare ground	N/A	50.5	—	—						~~50.5~~	~~16.8~~	~~2~~	~~X~~
Lessingia filaginifolia	UPL	—	2.5	—						2.5	0.8	7	
Grindelia camporum	FACU	—	2.5	2.5						5	1.7	6	
Juncus patens	FAC	—	—	24.0						24	8	4	

TOTAL SUM OF AVERAGES: 108.3

50% Threshold [0.50(∑avg.)] = 54.2

20% Threshold [0.20(∑avg.)] = 21.7

Cover Classes	7	6	5	4	3	2	1
Percent Cover	97-100	88-96	67-87	35-66	14-34	5-13	1-4
Midpoints	98.5	92.0	77.0	50.5	24.0	9.0	2.5

LSA

LSA Associates, Inc.

TRANSMITTAL

RECEIVED
South Coast Region
SEP 01 1999
CALIFORNIA
COASTAL COMMISSION

To: Coastal Commission
200 Oceangate, 10th Floor, Suite 1000
Long Beach, California, 90802-4302

Attn: Teresa Henry

Date: September 1, 1999

Project: ICD736

Transmitted:
- ☐ For your review
- ☐ For your files
- ☐ At your request
- ☐ For your information
- ☐ For your approval
- ■ Distribution

Subject: Wetland Delineation and Addendum

Project #: ICD736

Date	Copies	Description
August 30, 1999	1	Wetland delineation and addendum for Crystal Cove/Newport Coast Phases IV-3 & IV-4

The above are transmitted: ☐ Herewith ☐ Under separate cover ■ Via:

General Remarks: Per Andi Culbertson's request

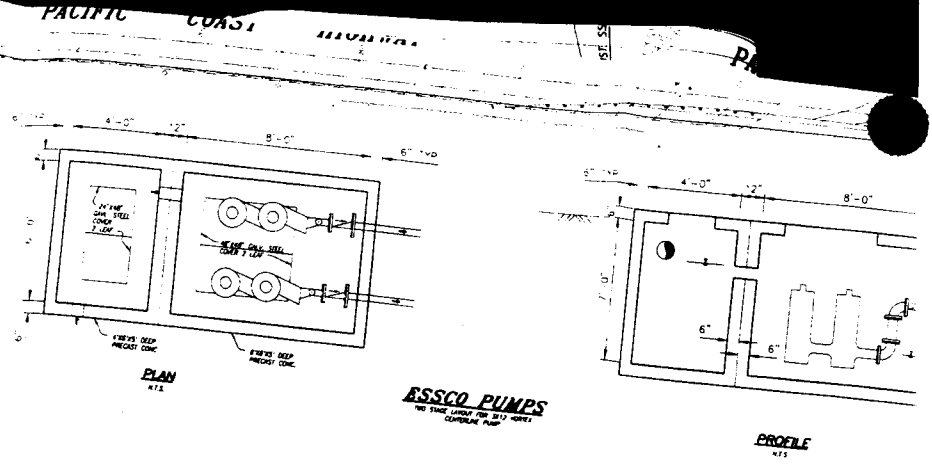
Copies to: Andi Culbertson

By: Art Homrighausen

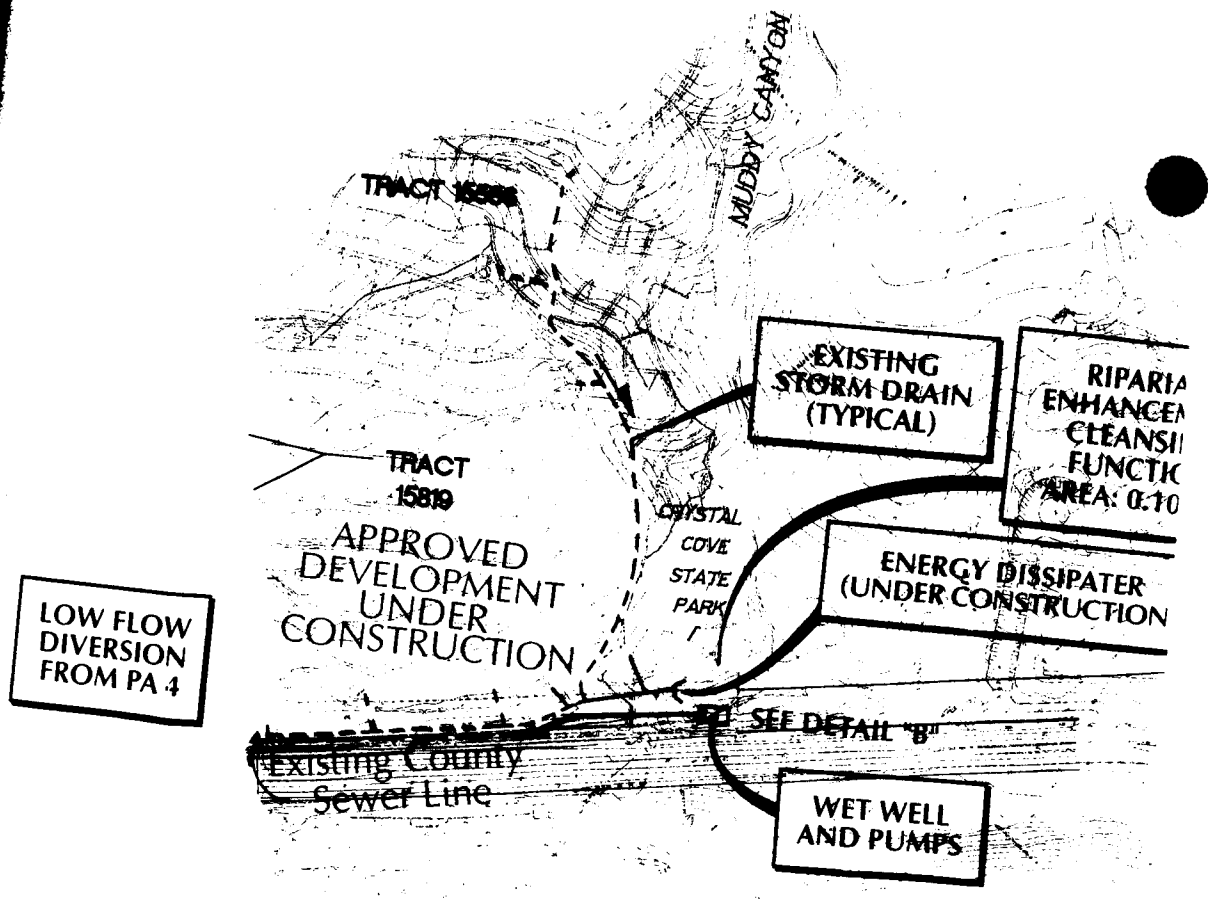
One Park Plaza, Suite 500
Irvine, California 92614
Telephone 949 553-0666
Facsimile 949 553-8076

Ex

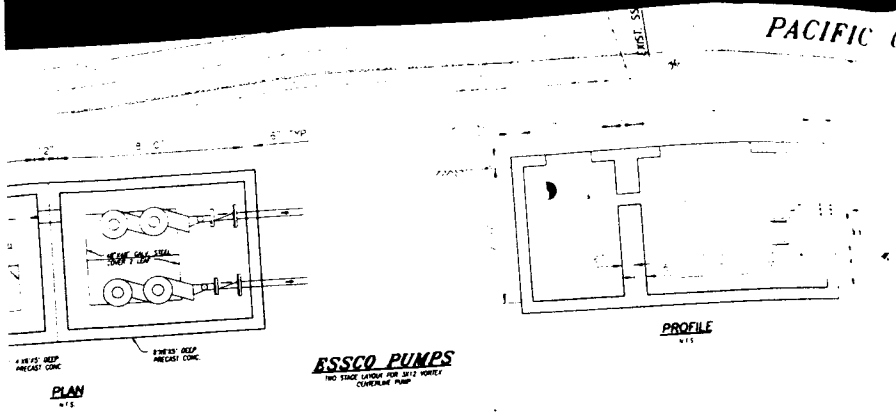
03/31/94(L: FORMS TRANSMIT.FRM)



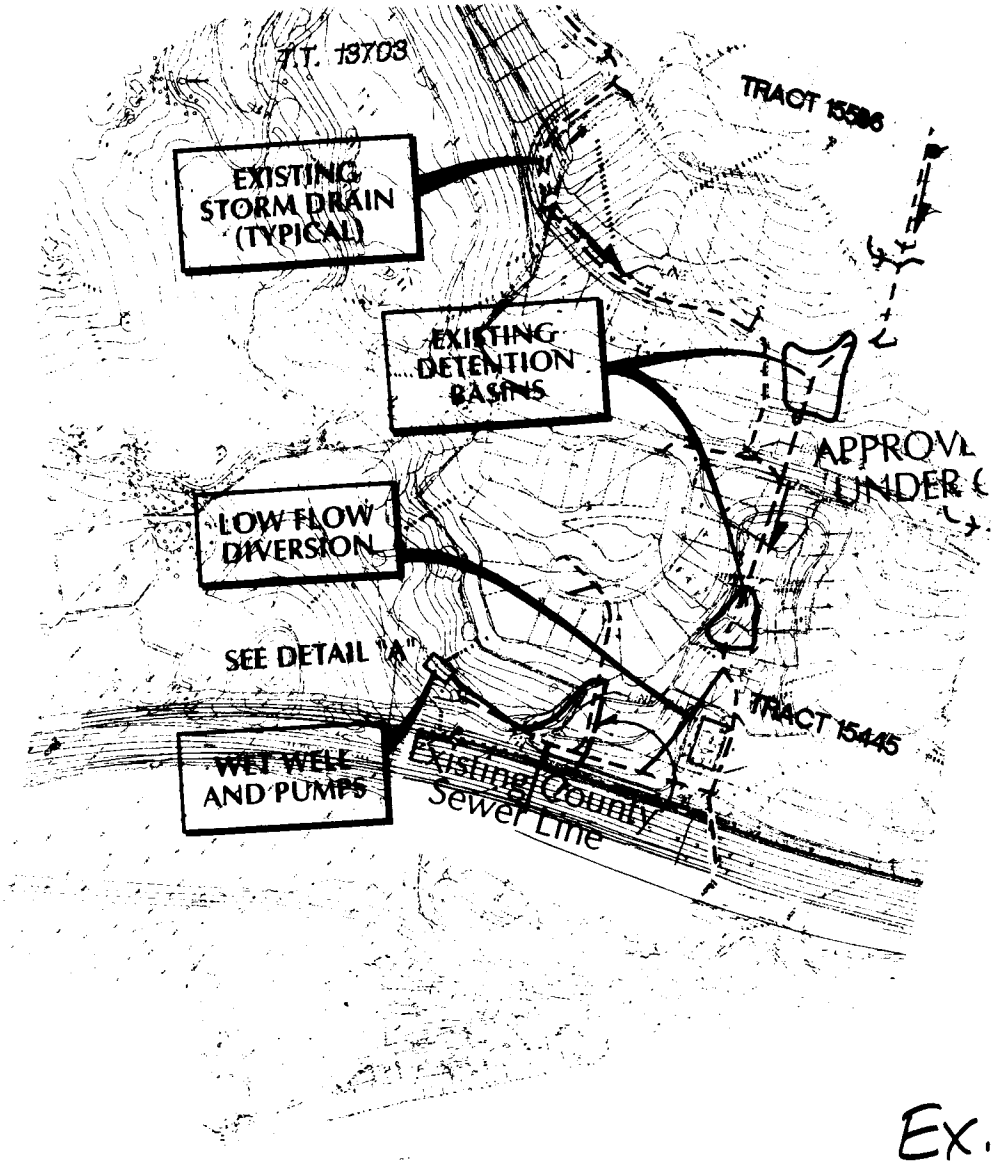
: MUDDY CANYON WET WELL & PUMPS



Ex. 20
P.1



DETAIL "A": LOS TRANCOS WET WELL &



Ex. 20
p. 2

CALIFORNIA DEPARTMENT OF FISH AND GAME
330 Golden Shore, Suite 50
Long Beach, California 90802

Notification No. 5-212-99
Page 1 of 8

AGREEMENT REGARDING PROPOSED STREAM OR LAKE ALTERATION

THIS AGREEMENT, entered into between the State of California, Department of Fish and Game, hereinafter called the Department, and Roberta Marshall of Irvine Community Development; 550 Newport Center Dr. Newport Beach, CA 92660; 714-720-2000; (949) 553-0666; State of California, hereinafter called the Operator, is as follows:

WHEREAS, pursuant to Section 1603 of California Fish and Game Code, the Operator, on the 21st day of July, 1999, notified the Department that they intend to divert or obstruct the natural flow of, or change the bed, channel, or bank of, or use material from the streambed(s) of, the following water(s): Muddy Canyon Creek, tributaries to Muddy Canyon Creek and tributaries of Los Trancos Canyon Creek, Orange County, California, Section 132, 133, 134, 162, 163 Township 6S, 7W Range 9W Laguna Beach 7.5 minute quadrangle.

WHEREAS, the Department has determined that the proposed project is consistent with the Coastal and Central Subregion NCCP/HCP, and that "Identified Species" and "Covered Habitats" specified by the approved NCCP/HCP that may be located within the project area are adequately conserved under the terms and conditions of the approved NCCP/HCP.

WHEREAS, the Department (represented by Terri Dickerson and Leslie MacNair through a site visit on the 23rd day of February, 1999) has determined that such operations may substantially adversely affect those existing fish and wildlife resources within Muddy Canyon Creek, tributaries to Muddy Canyon Creek and tributaries of Los Trancos Canyon Creek, specifically identified as follows: Amphibians: western spadefoot toad, western toad, Pacific treefrog; Reptiles: gopher snake, southwestern pond turtle; Birds: white-tailed kite, northern harrier, yellow-breasted chat; Riparian Vegetation that provides habitat for those species; coast live oak, western sycamore, willows, and mulefat; and all other wildlife resources, including that riparian vegetation that provides habitat for such species in the area.

THEREFORE, the Department hereby proposes measures to protect fish and wildlife resources during the Operator's work. The Operator hereby agrees to accept the following measures/conditions as part of the proposed work.

If the Operator's work changes from that stated in the notification specified above, this Agreement is no longer valid and a new notification shall be submitted to the Department of Fish and Game. Failure to comply with the provisions of this Agreement and with other pertinent code sections, including but not limited to Fish and Game Code Sections 5650, 5652, 5937, and 5948, may result in prosecution.

Nothing in this Agreement authorizes the Operator to trespass on any land or property, nor does it relieve the Operator of responsibility for compliance with applicable federal, state, or local laws or ordinances. A consummated Agreement does not constitute Department of Fish and Game endorsement of the proposed operation, or assure the Department's concurrence with permits required from other agencies.

This Agreement becomes effective the date of Department's signature and terminates September 30, 2001 for project construction only. This Agreement shall remain in effect for that time necessary to satisfy the terms/conditions of this Agreement.

Ex. 21
p. 1

STREAMBED ALTERATION CONDITIONS FOR NOTIFICATION NUMBER: 5-212-99

1. The following provisions constitute the limit of activities agreed to and resolved by this Agreement. The signing of this Agreement does not imply that the Operator is precluded from doing other activities at the site. However, activities not specifically agreed to and resolved by this Agreement shall be subject to separate notification pursuant to Fish and Game Code Sections 1600 et seq.

2. The Operator proposes to alter the Muddy Canyon streambed to construct the Newport Coast Phases IV-3 and IV-4 Project (also known as Crystal Cove), a residential development on a 980-acre site, grading approximately 681 acres, and impacting 0.13 acre of riparian wetland within the Muddy Canyon streambed and 2.49 acres of other drainages. The 0.13 acre impact in Muddy Canyon streambed is proposed to be filled to construct a detention dam for purposes of reducing peak flood flows at the Muddy Canyon culvert under Pacific Coast Highway. The Operator is also impacting approximately 0.1 acre of seasonal wetlands with fill.

The project is located in coastal southwestern Orange County, generally bounded by Crystal Cove State Park, Pacific Coast Highway, Newport Coast Drive and the San Joaquin Hills Transportation Corridor.

3. The agreed work includes activities associated with No. 2 above. The project area is located in **Muddy Canyon Creek, tributaries to Muddy Canyon Creek and tributaries of Los Trancos Canyon Creek** in **Orange** County. Specific work areas and mitigation measures are described on/in the plans and documents submitted by the Operator and shall be implemented as proposed unless directed differently by this agreement.

4. The Operator shall not impact more than 0.13 acre of riparian wetland within the Muddy Canyon streambed and shall not impact any areas outside these areas shown on Exhibit 1. All impacts are permanent.

5. The Operator shall mitigate as follows:

A. Create 0.88 acre of wetland riparian habitat in the dedicated permanent open space, adjacent to the existing wetlands in the Muddy Canyon Creek drainage, immediately upstream of the proposed detention basin and immediately upstream of the Ranch/Edison dirt road. The existing stream banks, will be graded to create wetland hydrological conditions and to facilitate the installation of wetland riparian species and;

B. Enhance 0.61 acre of existing drainages with the installation of riparian plants. These enhancements are proposed for sections of the drainages that are immediately downstream of storm drain outlets for the proposed residential development and;

C. Create 1.44 acres of naturally functioning drainage course, with riparian vegetation, in the portion of Planning Areas 5 and 6 that drains to Muddy Canyon Creek. This drainage area may include a series of small basins and natural rock drop structures down the fill slope that leads to the canyon bottom. The maximum capacity of this drainage course will be the ten year storm. Larger storm flows may be contained in an underground storm drain and;

D. Dedicate 2.62 acres of wetland habitat at the San Joaquin Marsh mitigation site as mitigation for this project.

Ex. 21
p. 2

STREAMBED ALTERATION CONDITIONS FOR NOTIFICATION NUMBER: 5-212-99

The Operator is also: restoring 0.4 acre of seasonal wetlands as mitigation for impacts to the 0.1 acre of seasonal wetlands; and creating an additional 0.21 acre of wetland area immediately upstream of the detention dam to be planted with riparian vegetation. This area is subject to sediment removal following storm episodes, and is not included in the mitigation total. No vegetation shall be removed from this area from March 15 to September 15.

6. The Operator shall submit a Mitigation plan for Department review and approval prior to project initiation and no later than November 30, 1999. The plan shall include: the mitigation acreages described in this Agreement; specific, onsite mitigation design (with hydrology information), maintenance, monitoring and success criteria; methodology, restrictions and implementation for operation and maintenance of the detention basin area to avoid and minimize impacts to streams and associated habitat; time line/implementation schedule for mitigation installation; a map and inventory of vegetation to be planted, listed by species; a description of proposed monitoring activities (locations, techniques, scheduling, etc.) and maintenance operations, with particular emphasis on methods and schedules; the removal of invasive plant species, areas treated, techniques to be used, schedule, and success criteria for controlling invasive plants; and all other references to revegetation and restoration activities specified by this Agreement.

Mitigation at the offsite location(s) shall be installed no later than April 30, 2000.

Mitigation at the detention basin, upstream of the basin and seasonal wetlands shall be installed no later than December 31, 2000.

The remaining mitigation shall be installed concurrent with project construction.

7. The Operator shall not remove vegetation within the stream from March 15 and September 15 to avoid impacts to nesting birds.

8. No impacts shall occur to any state-listed threatened or endangered species, including least Bell's vireo and/or willow flycatcher. The Operator shall have a qualified biologist monitor work operations to ensure no impacts occur to any threatened or endangered species. The biologist shall halt work on the project site immediately if the potential for any impacts occurs, and the Department shall be notified immediately. The Operator shall not resume work until approved by the Department.

9. No direct or indirect impacts shall occur to southwestern pond turtle. A pond turtle specialist shall perform focused surveys for southwestern pond turtle prior to project initiation and submit the results to the Department. If turtles are present, the specialist shall submit a Pond Turtle Mitigation Plan to the Department, and it shall include all avoidance measures for Department review and approval, prior to project initiation.

10. Disturbance or removal of vegetation shall not exceed the limits approved by the Department. The disturbed portions of any stream channel shall be restored. Restoration shall include the revegetation of stripped or exposed areas with vegetation native to the area.

11. The project shall comply with the "minimization of impact" measures specified in the approved NCCP/HCP. The project has been determined to be consistent with the Coastal and Central Subregion NCCP/HCP.

Ex. 21
P. 3

STREAMBED ALTERATION CONDITIONS FOR NOTIFICATION NUMBER: 5-212-99

12. The Department recommends the use of native plants to the greatest extent feasible in the landscape areas adjacent and/or near the mitigation/open space areas. The Operator shall not plant, seed or otherwise introduce invasive exotic plant species to the landscaped areas adjacent and/or near the mitigation/open space areas. Exotic plant species not to be used include those species listed on Lists A & B of the California Exotic Pest Plant Council's list of "Exotic Pest Plants of Greatest Ecological Concern in California as of August 1996." This list includes such species as: pepper trees, pampas grass, fountain grass, ice plant, myoporum, tree of heaven, black locust, capeweed, tree of heaven, periwinkle, bush lupine, sweet alyssum, English ivy, French broom, Scotch broom, and Spanish broom. A copy of the complete list can be obtained by contacting the California Exotic Pest Plant Council at 31872 Joshua Drive, #25D, Trabuco Canyon, CA 92679-3112. The Operator shall submit a copy of the draft landscape/planting plan to the Department's representative for review at least 30 days prior to the acquisition and/or use of any plant materials (seeds or container plants) adjacent to the mitigation/open space site. A site visit by the DFG representative to review the presence (or absence) of exotic pest plants is required prior to the Department's acceptance of the completed project.

13. A security (e.g. an irrevocable letter of credit, pledge savings account, or CD) for the amount of all mitigation measures shall be submitted to the Department within 90 days of signing this Agreement and prior to project initiation. This amount shall be based on a cost estimate which shall be submitted to the Department for approval within 60 days of signing this Agreement. The security shall be approved by the Department's legal advisors prior to its execution, and shall allow the Department at its sole discretion to recover funds immediately if the Department determines there has been a default. The legal advisors can be contacted at (916) 654-3821.

14. Proof of an Army Corps 404 permit shall be submitted to the Department prior to the initiation of construction. All special conditions under the Army Corps 404 permit shall be enforceable by the Department under this agreement.

15. No equipment shall be operated in ponded or flowing areas. When work in a flowing stream is unavoidable, the entire stream flow shall be diverted around the work area by a barrier, temporary culvert, new channel, or other means approved by the Department. Construction of the barrier and/or the new channel shall normally begin in the downstream area and continue in an upstream direction, and the flow shall be diverted only when construction of the diversion is completed. Channel bank or barrier construction shall be adequate to prevent seepage into or from the work area. Channel banks or barriers shall not be made of earth or other substances subject to erosion unless first enclosed by sheet piling, rock rip-rap, or other protective material. The enclosure and the supportive material shall be removed when the work is completed and removal shall normally proceed from downstream in an upstream direction.

16. Installation of bridges, culverts, or other structures shall be such that water flow is not impaired. Bottoms of temporary culverts shall be placed at stream channel grade; bottoms of permanent culverts shall be placed at or below stream channel grade.

17. Preparation shall be made so that runoff from steep, erodible surfaces will be diverted into stable areas with little erosion potential. Frequent water checks shall be placed on dirt roads, cat tracks, or other work trails to control erosion.

Ex. 21
p.4

STREAMBED ALTERATION CONDITIONS FOR NOTIFICATION NUMBER: 5-212-99

18. Water containing mud, silt or other pollutants from aggregate washing or other activities shall not be allowed to enter a lake or flowing stream or placed in locations that may be subjected to high storm flows.

19. Structures and associated materials not designed to withstand high seasonal flows shall be removed to areas above the high water mark before such flows occur.

20. The perimeter of the work site shall be adequately flagged and/or fenced to prevent damage to adjacent riparian habitat. This work shall be supervised by an on-site, qualified biologist.

21. Staging/storage areas for equipment and materials shall be located outside of the stream.

22. The Operator shall comply with all litter and pollution laws. All contractors, subcontractors and employees shall also obey these laws and it shall be the responsibility of the operator to ensure compliance.

23. All planting shall have a minimum of 80% survival the first year and 100% survival thereafter and/or shall attain 75% cover after 3 years and 90% cover after 5 years for the life of the project. If the survival and cover requirements have not been met, the Operator is responsible for replacement planting to achieve these requirements. Replacement plants shall be monitored with the same survival and growth requirements for 5 years after planting.

24. All planting shall be done between October 1 and April 30 to take advantage of the winter rainy season.

25. An annual report shall be submitted to the Department by Jan. 1 of each year for 5 years after planting. This report shall include the survival, % cover, and height of both tree and shrub species. The number by species of plants replaced, an overview of the revegetation effort, and the method used to assess these parameters shall also be included. Photos from designated photo stations shall be included.

26. Access to the work site shall be via existing roads and access ramps.

27. Spoil sites shall not be located within a stream/lake, where spoil shall be washed back into a stream/lake, or where it will cover aquatic or riparian vegetation.

28. The Operator shall employ all standard Best Management Practices to ensure that debris, soil, silt, sand, bark, slash, sawdust, rubbish, cement, or concrete or washings thereof, oil or petroleum products, or other organic or earthen material from any construction or associated activity of whatever nature, shall not be allowed to enter into or be placed where it may be washed by rainfall or runoff into, waters of the State. When operations are completed, any excess materials or debris shall be removed from the work area. No rubbish shall be deposited within 150 feet of the high water mark of any stream or lake.

29. The Operator shall provide a copy of this Agreement to all contractors, subcontractors, and the Operator's project supervisors. Copies of the Agreement shall be readily available at work sites at all times during periods of active work and must be presented to any Department personnel, or personnel from another agency upon demand.

Ex. 2
p. 5

STREAMBED ALTERATION CONDITIONS FOR NOTIFICATION NUMBER: 5-212-99

30. Raw cement/concrete or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other substances which could be hazardous to aquatic life, resulting from project related activities, shall be prevented from contaminating the soil and/or entering the waters of the state. These materials, placed within or where they may enter a stream/lake, by Operator or any party working under contract, or with the permission of the Operator, shall be removed immediately.

31. No equipment maintenance shall be done within or near any stream channel where petroleum products or other pollutants from the equipment may enter these areas under any flow.

32. The Department reserves the right to enter the project site at any time to ensure compliance with terms/conditions of this Agreement.

33. The Operator shall notify the Department, in writing, at least five (5) days prior to initiation of construction (project) activities and at least five (5) days prior to completion of construction (project) activities. Notification shall be sent to the Department at 330 Golden Shore, Suite 50, Long Beach, CA 90802, Attn: ES.

34. It is understood the Department has entered into this Streambed Alteration Agreement for purposes of establishing protective features for fish and wildlife. The decision to proceed with the project is the sole responsibility of the Operator, and is not required by this agreement. It is further agreed all liability and/or incurred cost related to or arising out of the Operator's project and the fish and wildlife protective conditions of this agreement, remain the sole responsibility of the Operator. The Operator agrees to hold harmless the State of California and the Department of Fish and Game against any related claim made by any party or parties for personal injury or any other damages.

35. The Department reserves the right to suspend or cancel this Agreement for other reasons, including but not limited to the following:
a. The Department determines that the information provided by the Operator in support of the Notification/Agreement is incomplete or inaccurate;
b. The Department obtains new information that was not known to it in preparing the terms and conditions of the Agreement;
c. The project or project activities as described in the Notification/Agreement have changed;
d. The conditions affecting fish and wildlife resources change or the Department determines that project activities will result in a substantial adverse effect on the environment.

CONCURRENCE

(Operator's name)

Robert Mall 11/1/99
(signature) (date)

Vice President - Irvine Community Development Company
(title)

California Dept. of Fish and Game

C. Raysbrook 11/1/99
(signature) (date)

Regional Manager

Prepared by: Terri Dickerson

Ex. 21
p.6

SA

Crystal Cove/Newport Coa
Phases IV-3 & IV-
Impact Limi

Exhibit 1

Ex. 21
p. 7

STATE OF CALIFORNIA - THE RESOURCES AGENCY GRAY DAVIS, Governor

DEPARTMENT OF FISH AND GAME
Region 5
P.O. Box 6857
Laguna Niguel, California 92607-6857
(949) 363-7338

Ms. Roberta Marshall and Mr. Steve Letterly
Irvine Community Development Company
550 Newport Center Dr., 7th Floor
Newport Beach, CA 92660

July 17, 2000

Dear Ms. Marshall and Mr. Letterly:

We have reviewed your request to amend and extend our Streambed Alteration Agreement, 5-212-99, to alter the streambed to construct the Newport Coast Phases IV-3 and IV-4 Project (also known as Crystal Cove), a residential development on a 980-acre site, grading approximately 681 acres within or adjacent to Muddy Canyon Creek, tributaries to Muddy Canyon Creek, Los Trancos Canyon Creek and tributaries to Los Trancos Canyon Creek in Orange County. The project is located in coastal southwestern Orange County, generally bounded by Crystal Cove State Park, Pacific Coast Highway, Newport Coast Drive and the San Joaquin Hills Transportation Corridor.

Pursuant to Fish and Game Code Section 1600 et seq. this letter, when countersigned by you, amends our agreement as follows:

2. The Operator proposes to alter the Muddy Canyon streambed to construct the Newport Coast Phases IV-3 and IV-4 Project (also known as Crystal Cove), a residential development on a 980-acre site, grading approximately 681 acres and indirectly impacting 40 square feet of riparian wetland within the Muddy Canyon streambed with shading from construction of a bridge crossing, and 2.49 acres of other drainages. The 2.49 -acre impact is mostly fill, but also includes the construction of two 50-square foot interceptor concrete swales at the bottoms of Los Trancos and Muddy Canyons at Pacific Coast Highway to divert dry season flows to the local sewer system. The Operator is also impacting approximately 0.1 acre of seasonal wetlands with fill.

The project is located in coastal southwestern Orange County, generally bounded by Crystal Cove State Park, Pacific Coast Highway, Newport Coast Drive and the San Joaquin Hills Transportation Corridor.

Ex. 21
p. 8

3. The agreed work includes activities associated with No. 2 above. The project area is located in Muddy Canyon Creek, tributaries to Muddy Canyon Creek, Los Trancos Canyon Creek and tributaries to Los Trancos Canyon Creek in Orange County. Specific work areas and mitigation measures are described on/in the plans and documents submitted by the Operator, including "Wetland/Riparian Mitigation and Monitoring Plan: Crystal Cove/Newport Coast Phases IV-3 & IV-4, Orange County, California" prepared by LSA Associates, and dated revised May 16, 2000, and shall be implemented as proposed unless directed differently by this agreement.

4. The Operator shall not impact more than40 square feet indirectly of riparian wetland within the Muddy Canyon streambed and shall not impact more than 2.49 acres of other drainages, as shown on Exhibit 1, Figure 2, and other submitted documents. All impacts are permanent.

6. The Operator shall submit an addendum to the Mitigation plan to include: a revised Figure 2 identifying the locations of the detention basins, and describe the restrictions and implementation for operation and maintenance of the detention basin areas to avoid and minimize impacts to streams and associated habitat.

Mitigation at the off-site location shall be installed no later than December 31, 2000.

Mitigation at Muddy Canyon and the seasonal wetlands shall be installed no later than December 31, 2001.

The remaining mitigation shall be installed concurrent with project construction.

13. A security (e.g. an irrevocable letter of credit, pledge savings account, or CD) for the amount of all mitigation measures, currently estimated at $554,500 in the submitted documents, shall be submitted to the Department by December 31, 2000 or as extended by the Department, and prior to project initiation. The security shall be approved by the Department's legal advisors prior to its execution, and shall allow the Department at its sole discretion to recover funds immediately if the Department determines there has been a default. The legal advisors can be contacted at (916) 654-3821.

This letter also extends the period during which activities otherwise authorized by the agreement may continue. The new termination date of the agreement is September 30, 2002.

Be advised that all terms of Agreement 5-212-99 remain in force throughout the new term of the agreement. A copy of said agreement AND THIS AMENDMENT AND EXTENSION LETTER must be kept on site and be shown upon request to Department personnel during all periods of work.

Ex. 21
P. 9

Two copies of this letter are being sent to you. PLEASE RETURN ONE SIGNED ORIGINAL to the Department of Fish and Game, at 4949 Viewridge Avenue, San Diego, CA 92123.

If you have further questions, please contact me at (949) 363-7538.

Sincerely,

Terri Dickerson

Terri Dickerson
Environmental Specialist III

CONCURRENCE: _____ DATE: _____

EX. 21
P. 10

T. Henry - LD

STATE OF CALIFORNIA-THE RESOURCES AGENCY GRAY DAVIS, *Governor*

DEPARTMENT OF FISH AND GAME
South Coast Region
4949 Viewridge Avenue
San Diego, California 92123
(858) 467-4201
FAX (858) 467-4239

RECEIVED
JUL 17 2000
CALIFORNIA
COASTAL COMMISSION

RECEIVED
South Coast Region
JUL 18 2000
CALIFORNIA
COASTAL COMMISSION

July 12, 2000

Mr. Peter Douglas, Executive Director
California Coastal Commission
45 Fremont, Suite 2000
San Francisco, California 94105

Dear ~~Mr. Douglas~~ Peter:

Appeal of the Newport Coast Crystal Cove Development

An appeal of the above Newport Coast development is before your Commission at its August meeting. In our capacity as the State agency responsible for managing the Natural Community Conservation Planning Program and as the technical advisor on biological issues for the Coastal Commission, the California Department of Fish and Game (Department) has been involved in planning on the Newport Coast for many years. Because of that long history, I wanted to take this opportunity to share the Department's perspective and observations on this project.

Natural Community Conservation Planning Program (NCCP)

This property is part of the Central/Coastal Natural Communities Conservation Planning Program, the first NCCP approved by the Department and the U. S. Fish and Wildlife Service. When the NCCP was approved in 1996, the Department, USFWS, county and other NCCP participants concurred in a recommendation that, in the future, development be rearranged and consolidated in the upper and lower portions of Wishbone Ridge in order to expand the open space linkage between Los Trancos and Muddy Canyons and improve biological connectivity in the Subarea Reserve. In recommending this future adjustment in the plan, we realized the certified Local Coastal Program ("LCP") would need to be amended along with the NCCP. Because of the need for future plan amendments, all NCCP participants understood that the recommended consolidation of residential development on the upper and lower portions of Wishbone Ridge was not required, but was voluntary. Later in 1996, the Commission concurred with the recommendation and the LCP was modified and re-certified to implement the land use consolidation and reserve boundary amendment recommended in the 1996 NCCP.

Our written comments in the draft EIR for the Crystal Cove project in 1998 specifically indicated that the preferred alternative presented in the EIR best reflected the NCCP goals and

Ex. 21a
P. 1

amended reserve design. When the Department concurred with the 1996 NCCP recommendations, we knew that certain biological resource trade-offs were necessary. The objective was - and still should be, in our opinion - to provide for a habitat reserve design and adaptive management program that protects significant resources over the long term. Previous planning, such as the LCP and NCCP, placed more than 75 percent of the Newport Coast within the habitat reserve system, including the most important biological features. By preserving more than 75 percent of the Newport Coast, we ensured that the majority of the habitat, including ephemeral drainages with biological sensitivity, would be permanently protected as part of the NCCP Reserve.

The Department is convinced that the NCCP approach, with its focus on formulation of a regional conservation strategy, offers the best hope for long-term protection of species and their habitat. The focus on a regional conservation strategy, however, is based on the need to allow some biological resources to be lost in order to enable the creation of large-scale reserves and management systems that can address the needs of sensitive habitats and species populations. The species and other biological protections and land use commitments contained in the NCCP and reflected in the certified LCP should be supported by your Commission action.

The Central and Coastal NCCP Plan represented a collaborative process that spanned more than three years of workshops, hearings and working group meetings. It culminated in approval of the NCCP when it finally went before the Orange County Board of Supervisors with the support of most of the environmental interests that had been involved. Subsequently, your Commission supported these efforts with certification of the LCP. We understand that your agency is now receiving complaints about the consequent loss of resources brought about by the permitted development. As you consider these objections, we ask that you bear in mind the extensive prior public process - including approval by your Commission - that brought about both the substantial long-term reserve design and management benefits and the acknowledged resource impacts.

Kelp Considerations

The Department has been involved in kelp studies off the Newport Coast and Crystal Cove for years. Historically, this section of coast supported a persistent kelp community. These beds were lost during the 1982-83 El Nino and have not recovered since. During 1986, the Department contracted MBC Applied Environmental Sciences Inc. to conduct a restoration effort along the Newport Coast area. The MBC restoration effort met with some success but the kelp was lost to the El Nino of 1988-89. In this case, nearby development had not commenced prior to the time the kelp disappeared. Accordingly, we have no reason to believe that development played any role in the loss of kelp along this section of coast.

Ephemeral Drainages/Dry Washes Losses and Conversion

We are aware of a recently raised issue involving objections to the loss and conversion of ephemeral drainages to riparian habitat as a result of development nuisance runoff. A report prepared in response to a Coastal staff request indicates limited opportunities for such a conversion, because the major discharge points are widely separated, and the flows are not substantially increased over the full extent of the stream course. Also, the loss of some ephemeral drainages associated with future upland development was recognized in planning the NCCP, and subsequent mitigation required in the Department's streambed agreement 5-212-99, although not completely in-kind, includes creation of wetland riparian habitat that compensates for the project's impacts to streambed acreage.

Water Quality Improvements

The project now before the Commission eliminates a previously proposed detention basin from Muddy Canyon and incorporates various water quality features (such as the low flow diversion facilities in Los Trancos and Muddy Canyons) that represent significant improvements in this project. The elimination of the detention basin in Muddy Canyon represents a 0.13-acre reduction in wetland impacts. The addition of the alternative low flow diversion facilities represents only a 0.002-acre impact. Deleting the basin and relying on the low flow facilities represents a 98% decrease in wetland impacts in the Muddy Canyon streambed (0.13 acre versus 0.002 acre). These modifications are consistent with the intent of Streambed Alteration Agreement 5-212-99 that was previously issued for this project. The Department will be approving and The Irvine Company will be forwarding an amended 1603 Agreement to your Long Beach office.

Agricultural Ponds

Finally, we understand that there is interest in three small (approximately 0.05 acre) agricultural ponds in a portion of the property. These are man-made features, and we are not aware of any resources that are subject to the Department's regulatory authority.

Conclusion

The relationships between habitat protection and development as defined in these plans have made it possible to engage in long-term resource planning for the Central/ Coastal Subregion of Orange County and for other areas located both within and outside the Coastal Zone. In

considering our input, we ask that the Commission recognize the long-term environmental benefits that derive from commitments based on assurance provided through NCCP Implementation Agreements and certified LCPs.

Thank you for your consideration.

Sincerely,

C. F. Raysbrook
Regional Manager
South Coast Region

cc: Department of Fish and Game

Robert C. Hight
Sacramento

Ron Rempel
Sacramento

Bill Tippets
San Diego

Monica Florian
The Irvine Company
Newport Beach

RM/CFR:sl

File:Chron
file: pdouglas 07-12

Ex. 2|a
p. 4

State of California • The Resources Agency
DEPARTMENT OF PARKS AND RECREATION • P.O. Box 942896 • Sacramento, CA 94296-0001

Gray Davis, *Governor*
Rusty Areias, *Director*

July 19, 2000

RECEIVED
JUL 25 2000
CALIFORNIA
COASTAL COMMISSION

Teresa Henry
California Coastal Commission
200 Oceangate, Suite 1000
Long Beach, California 90802

Dear Ms. Henry:

Irvine Company Development Easements within Crystal Cove State Park

The California Department of Parks and Recreation has reviewed plans dated June 27, 2000 provided by the Irvine Company for the changes to their proposed development in and near Muddy Canyon. As you are aware, the Irvine Company retained certain rights on and across portions of Crystal Cove State Park when the State of California purchased this land for the public. It is our understanding the Irvine Company will be exercising some of these rights in two specific areas, which are located in the area under appeal (A5-IRC-99-301).

The revised Irvine Company plans now indicate the area previously considered for a detention basin and creek crossing within Muddy Canyon has been redesigned. We understand that the basin has been eliminated from the project and a bridge will now span the same general location. Plan revisions also include the construction of a Loffeinstein wall near Muddy Creek immediately down stream from the bridge to support the road approach from the south to the bridge. It is our opinion the Irvine Company's current proposal for this area is within their rights retained when the property was transferred. State Parks considers a bridge a more environmentally sound means of access than the previously proposed road with culverts. Pursuant to the Coastal Act, the Irvine Company has invited us to be co-applicants with them before the Coastal Commission. However, we have declined the invitation. We have asked the Irvine Company to vacate their remaining road access easement within Muddy Canyon at the completion of their development. Preliminary discussions between State Parks and Irvine Company legal divisions have begun to accomplish this in a timely manner.

Downstream, towards the Muddy Creek/Pacific Coast Highway intersection, the revised Irvine Company plans require a change in the grading as previously proposed. According to the Irvine Company plans, this grading will extend into Crystal Cove State Park and is required to provide adequate geological stability for the revised detention (draw down) basin between Reef Point Drive and Muddy Creek. State

Ex. 21b
p. 1

Parks believes this detention basin is a necessary component of the storm water treatment system. Additionally, placement of this detention basin outside of the natural drainage area is preferred over construction within the canyon bottom. This has resulted in less grading than previously planned. Here again, we believe the Irvine Company retains the right to grade into this area of Crystal Cove State Park and we declined the Irvine Company's request to be co-applicant before the Coastal Commission for any permits required for these improvements on State Park property.

We hope to have the opportunity to review final revised plans, including, the restoration of graded slopes, fuel modification plans and plant selection for natural revegetation of the graded slopes and provide additional comment to your office. We will continue to work with the Coastal Commission and the Irvine Company to assure that the end result of this development provides for the protection and the long term compatibility with the natural resources found at Crystal Cove State Park.

Please feel free to contact Richard Rozzelle of the Orange Coast District at (949) 366-4895 if you have any questions.

Sincerely,

Rusty Areias
Director

cc: Tim La Franchi, Chief Counsel, DPR Legal Office
Roberta Rand Marshall, Vice President Land Development, Irvine Community Development Company
Mike Tope, Superintendent, Orange Coast District
Madelyn Glickfeld, Consultant to the Director

Ex. 21b
P. 2

DEPARTMENT OF PARKS AND RECREATION
Orange Coast District- North Sector
18331 Enterprise Lane
Huntington Beach CA 92648
(714) 848-1566

RE
South
NOV 2
CALIFORI
COASTAL COMM

November 17, 1999

Roberta R. Marshall
Irvine Community Development Company
550 Newport Center Drive
P.O. Box 6370
Newport Beach CA 92658

Subject: Coastal Commission Appeal of MCDP No. 7
Newport Coast Phases IV-3 and IV-4

Dear Roberta:

The Irvine Company's (TIC) permit application to the California Coastal Commission is now under appeal is for developments on the coastal slope in the Newport Coast area. These developments contain actions that impact California Department of Parks and Recreation (CDPR) property at Crystal Cove State Park within both Los Trancos and Muddy Canyons. They specifically include installation of low flow drainage diversions to sewer, sewer lines, storm runoff pipes, energy dissipator, access for inspection and maintenance, and an access road to Planning Area 12C- Recreation Center with detention basin.

It is our understanding that while these developments are a part of TIC's planned developments, they do have CDPR impacts as part of exercising grant deed language as well as accommodating requests from the Department. CDPR gives permission to TIC to apply for a Coastal Development Plan for the developments listed above that are a part of their development plans, yet on CDPR property. We retain the right to review all documents and plans for these listed developments, and retain oversight for their design and placement.

We also understand that while it is appropriate to invite CDPR to become co-applicant to the appeal of TIC's Coastal Development Plan due to CDPR impacts under an existing permit, we feel it equally appropriate that The Irvine Company represent it's planned development under appeal and respectfully deny the request.

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P. 1

Please contact me at (714) 842-6135 with any questions you may have on this topic. We look forward to working closely with you towards their completion.

Sincerely,

David R. Pryor
Associate Resource Ecologist

Cc: Teresa Henry, CCC
Bob Cates, CDPR
Mike Tope, CDPR
Rich Rozzelle, CDPR

Ex. 21c
p. 2

Ex. 22
Bridge Plan

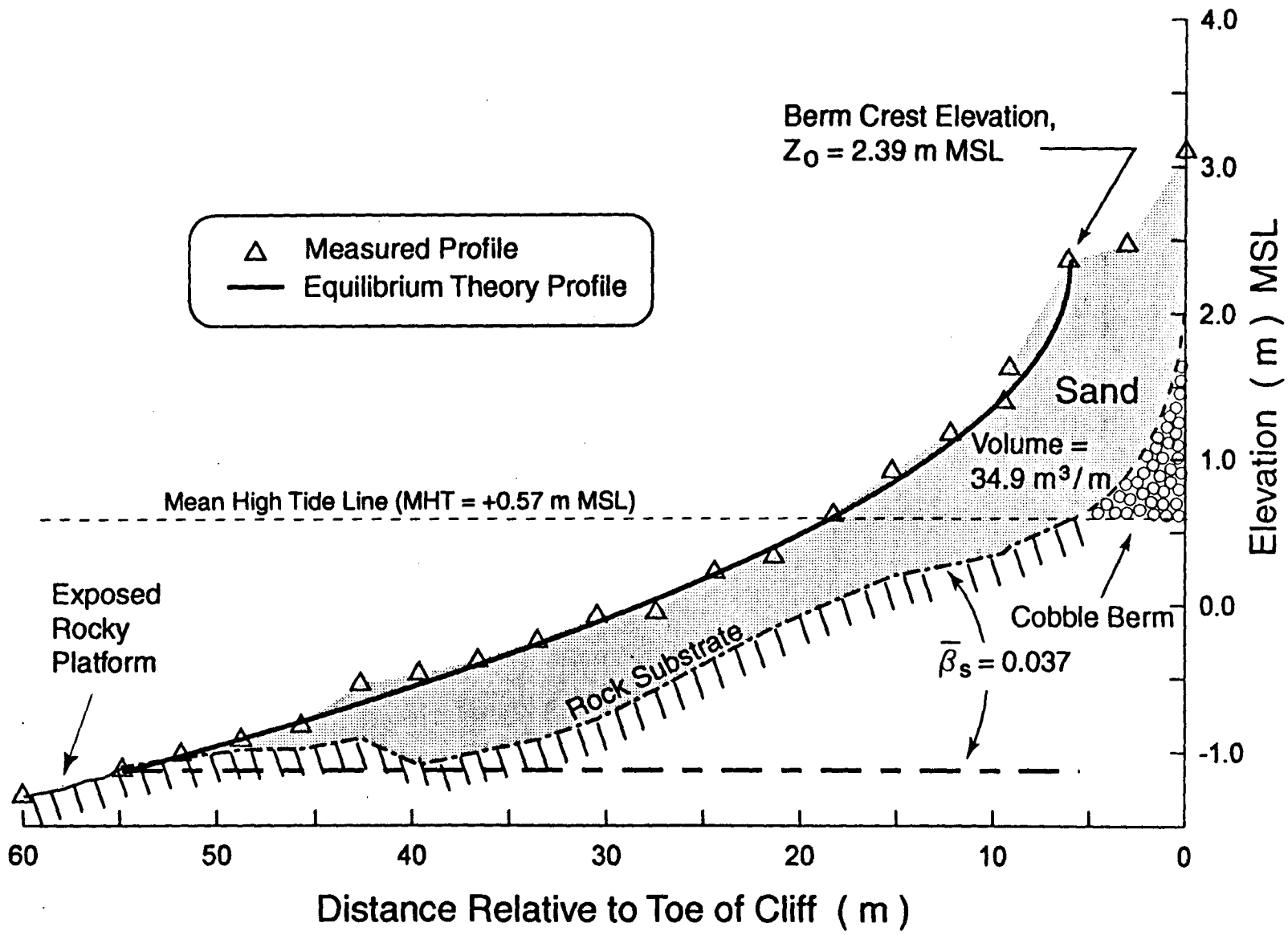

Figure 26. Beach profile - Sta 07, 15 March 00, @13:05 PST (between Los Trancos and Reef Pt.).

EX. 23
p. 1 of 1

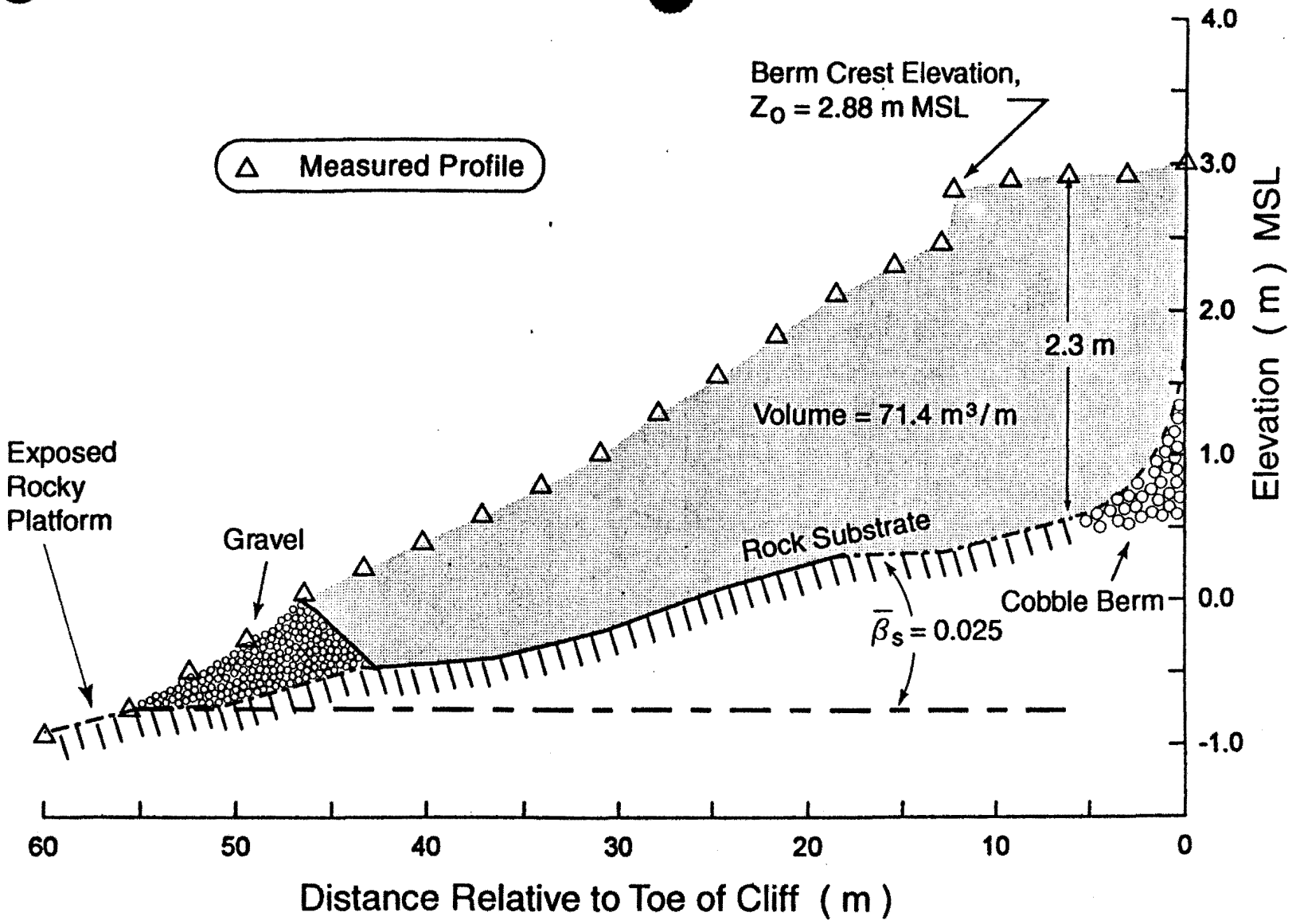

Figure 27. Beach profile - Sta 10, 15 March 00, @14:55 PST (between Muddy Canyon and Abalone Pt.).

Ex. 23a
p. 1 of 1

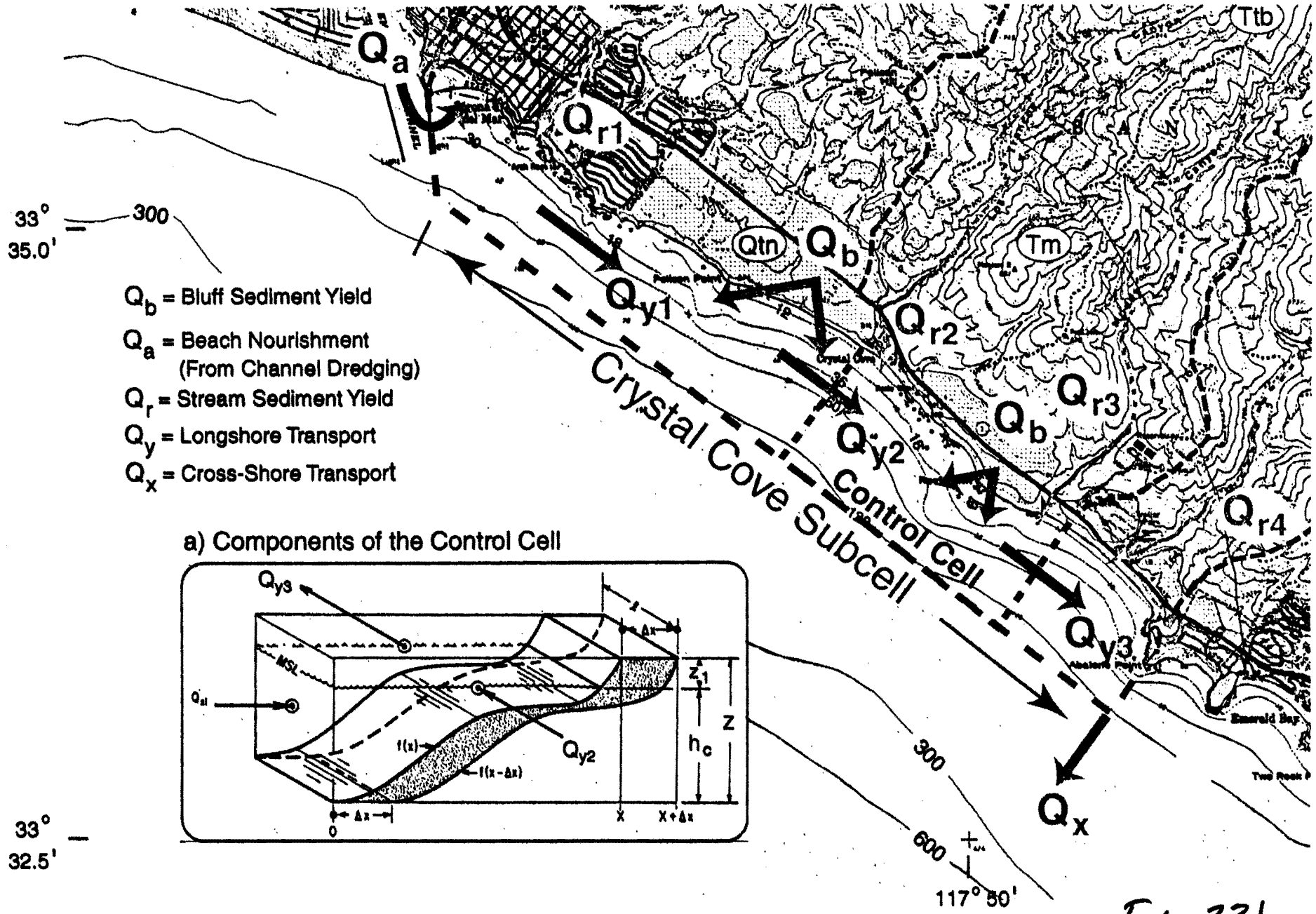

Figure 11. Computational domains for Crystal Cove sediment budget.

Ex. 23b
p 1 of 1

JUN 2000
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C... ITSON, ... AND ... INC

Tettemer & Associates
consulting engineers

June 21, 2000

COPY

Ms. Roberta Marshall
The Irvine Company
550 Newport Center Drive
Newport Beach, CA 92660

Dear Roberta:

The tabulation included in this letter was prepared in response to a request by the Coastal Commission staff related to the percentage change between the pre- and post-developed peak discharges for the various return period storm events for the Newport Coast development. The following tabulation has been prepared for the "Expected Value" discharges that were computed for use in the sedimentation engineering studies for the Los Trancos and the Muddy Canyon watersheds. Multiple return period peak expected value discharges were not computed for the watersheds between Los Trancos and Muddy Canyons. Multiple return period peak discharges were also not computed for any of the watersheds using the "High Confidence" methodology.

Watershed	Storm Return Period, Years	Post-Developed Peak Discharge Exceeds Pre-Developed Peak Discharge, Yes(Percent Exceeded) or No				
		Nodal Points*				
		12	13	14	15	17
Los Trancos	2	No	No	No	Yes(2.09)	No
	5	No	No	No	Yes(4.94)	Yes(1.36)
	10	No	No	No	Yes(3.45)	Yes(0.72)
	25	No	No	No	Yes(6.26)	No
	100	No	No	No	Yes(1.25)	No
		Nodal Points**				
		104(A)	105(B)	107(C)	108(D)	110(E)
Muddy	2	No	No	No	Yes(4.39)	No
	5	No	No	No	No	No
	10	No	No	No	No	No
	25	No	No	No	No	No
	100	No	No	No	No	No

* Nodal Point locations shown on the attached exhibit and on Exhibit A of the Hydrology Report.

** Nodal Point designations, i.e., 104(A), refer to the nodal point numbers shown on Exhibit A of the Hydrology Report, and the alphabetical designation as shown on the attached Figure 2. These two designations represent identical points.

A Division of
The Keith Companies

2955 Redhill Avenue
Costa Mesa
California 92626-592

T: 714.434.9080
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p. 1 of 1

110036 AS175LTR

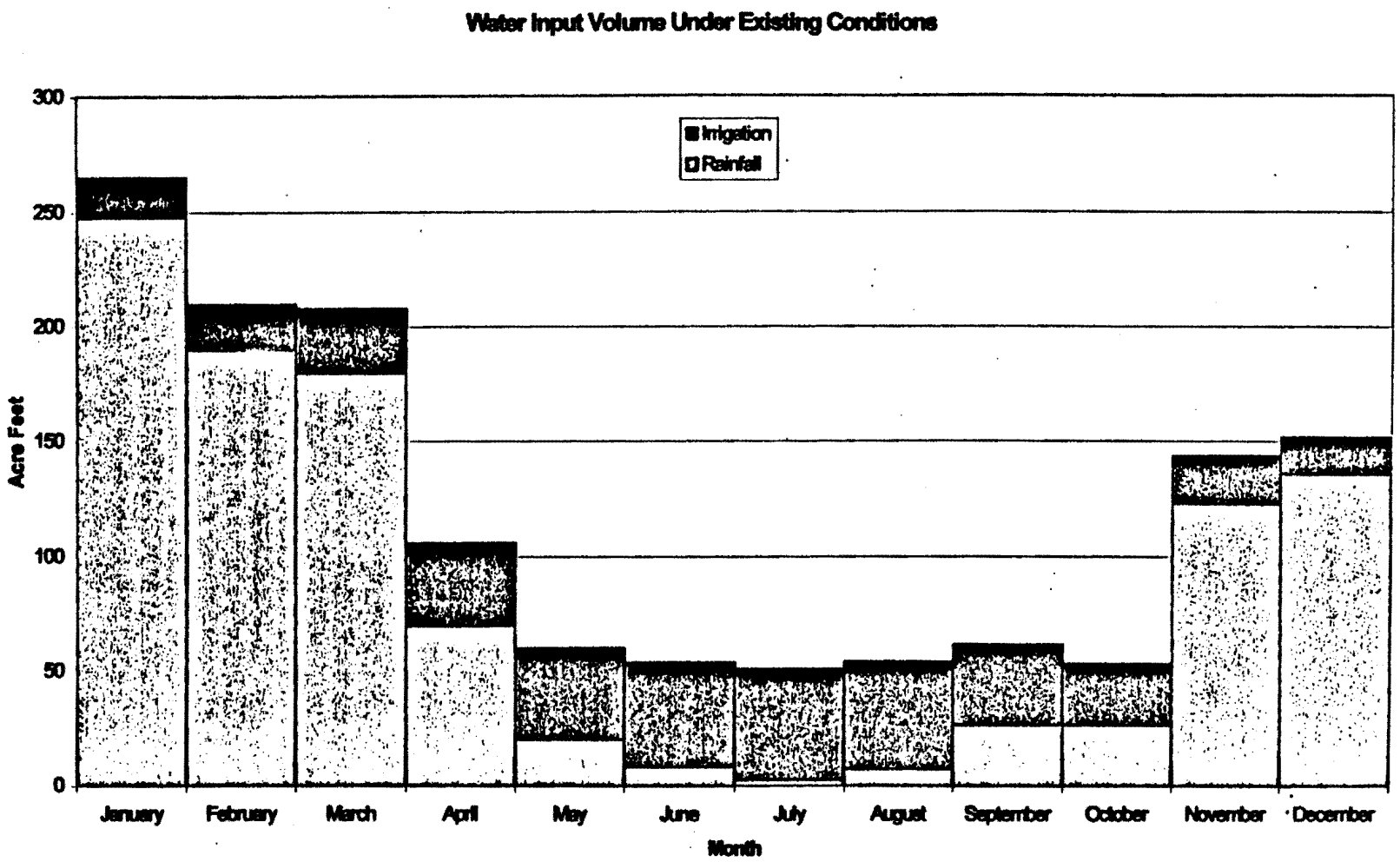


Figure 5. Average Rainfall Water Input for each Month Under Existing Conditions.

EX. 25
L.T.

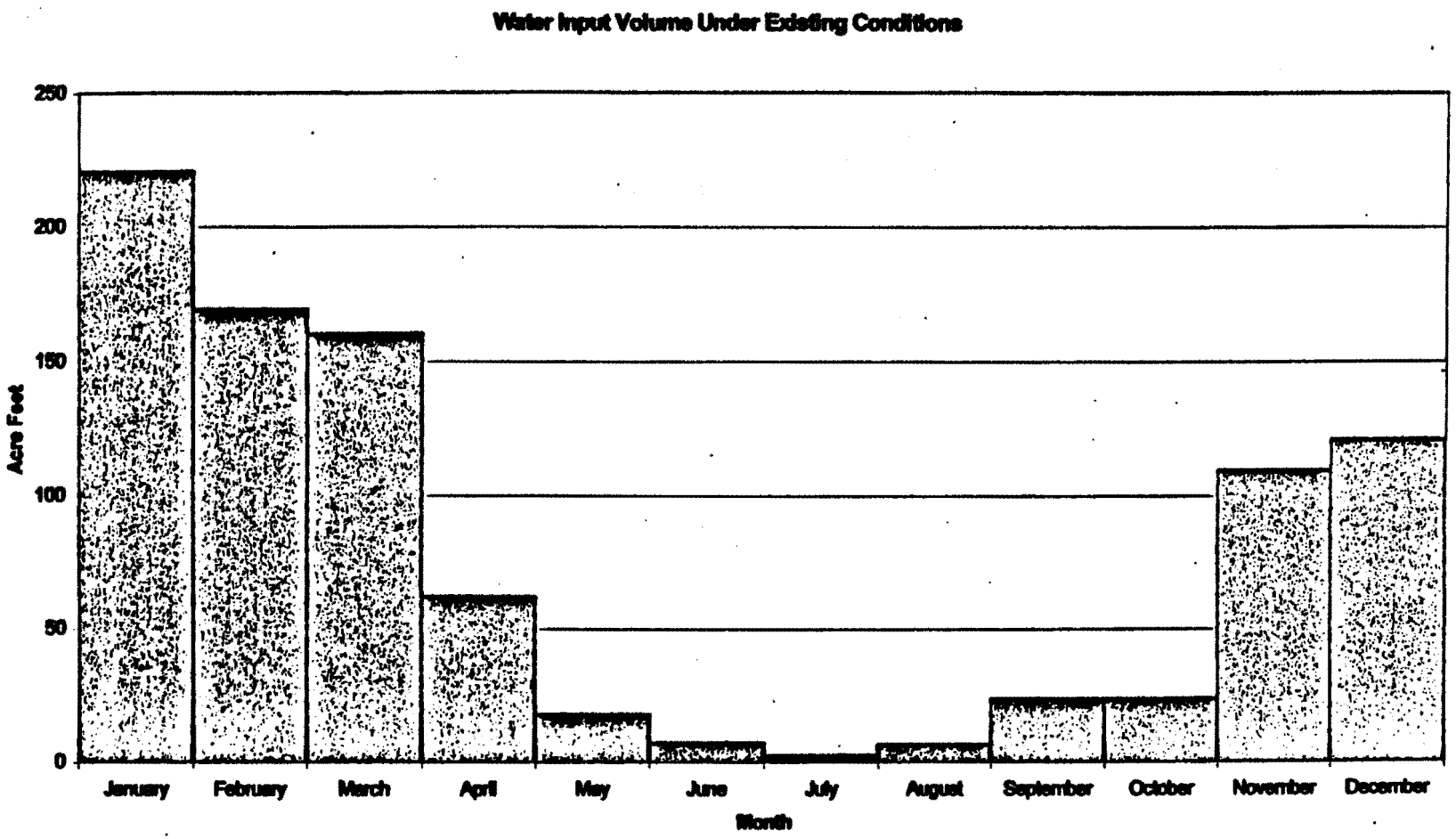


Figure 5. Average Rainfall Water Input for each Month Under Existing Conditions.

Ex. 25a
Muddy C.

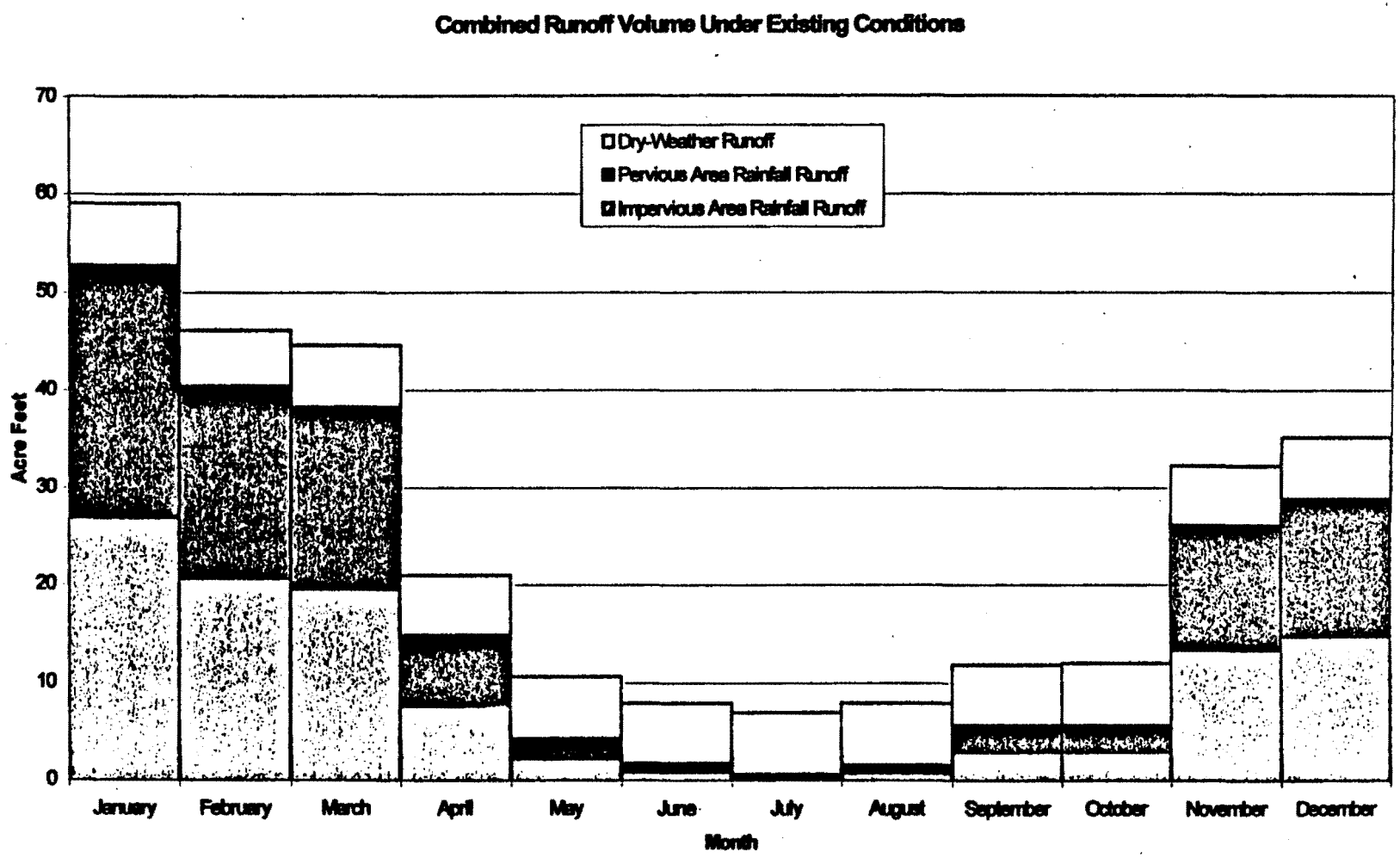


Figure 6. Average Runoff Volume for each Month Under Existing Conditions.

Ex. 26
L.T.

Ex. 26c
Muddy C.

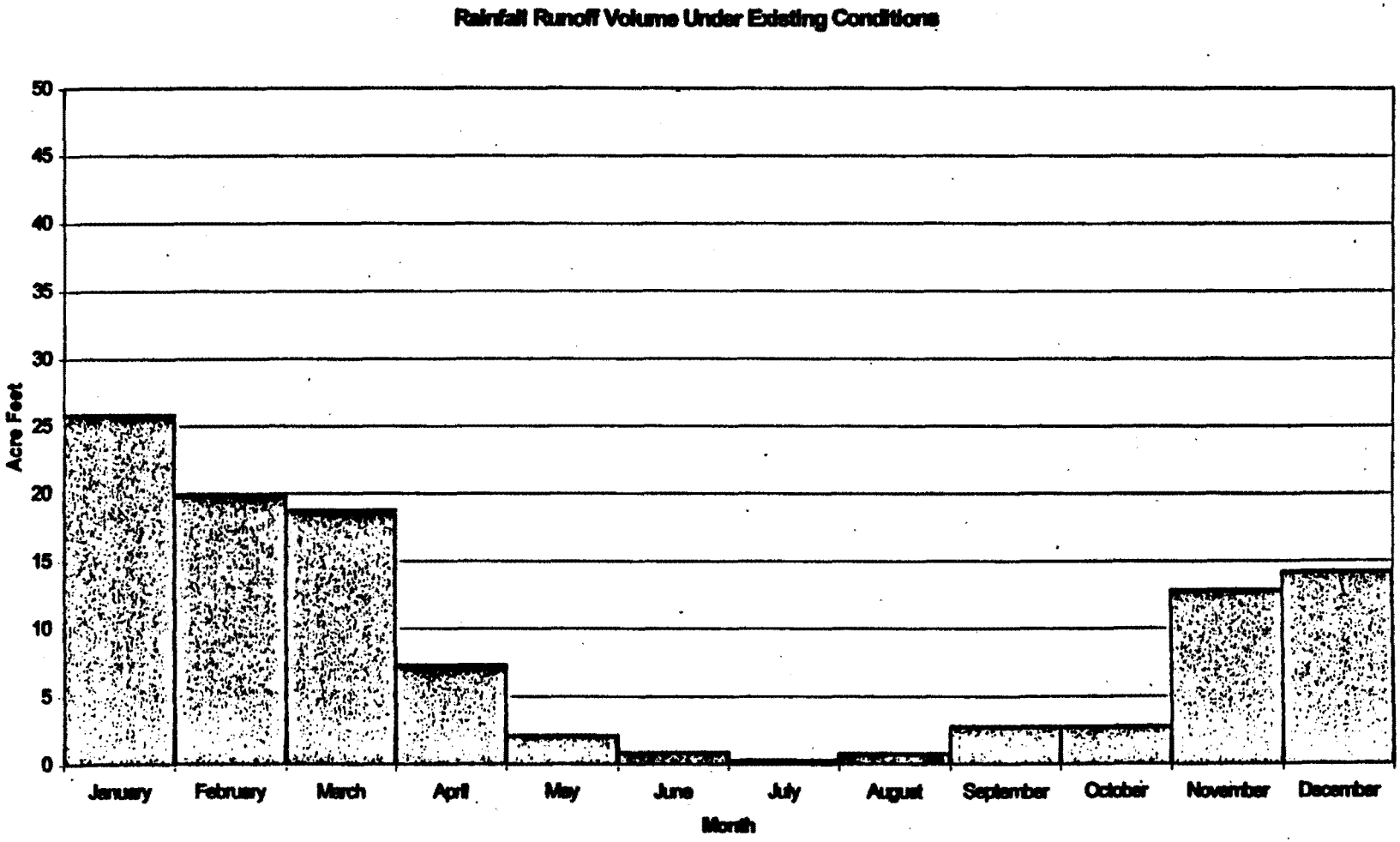


Figure 6. Average Runoff Volume for each Month Under Existing Conditions.

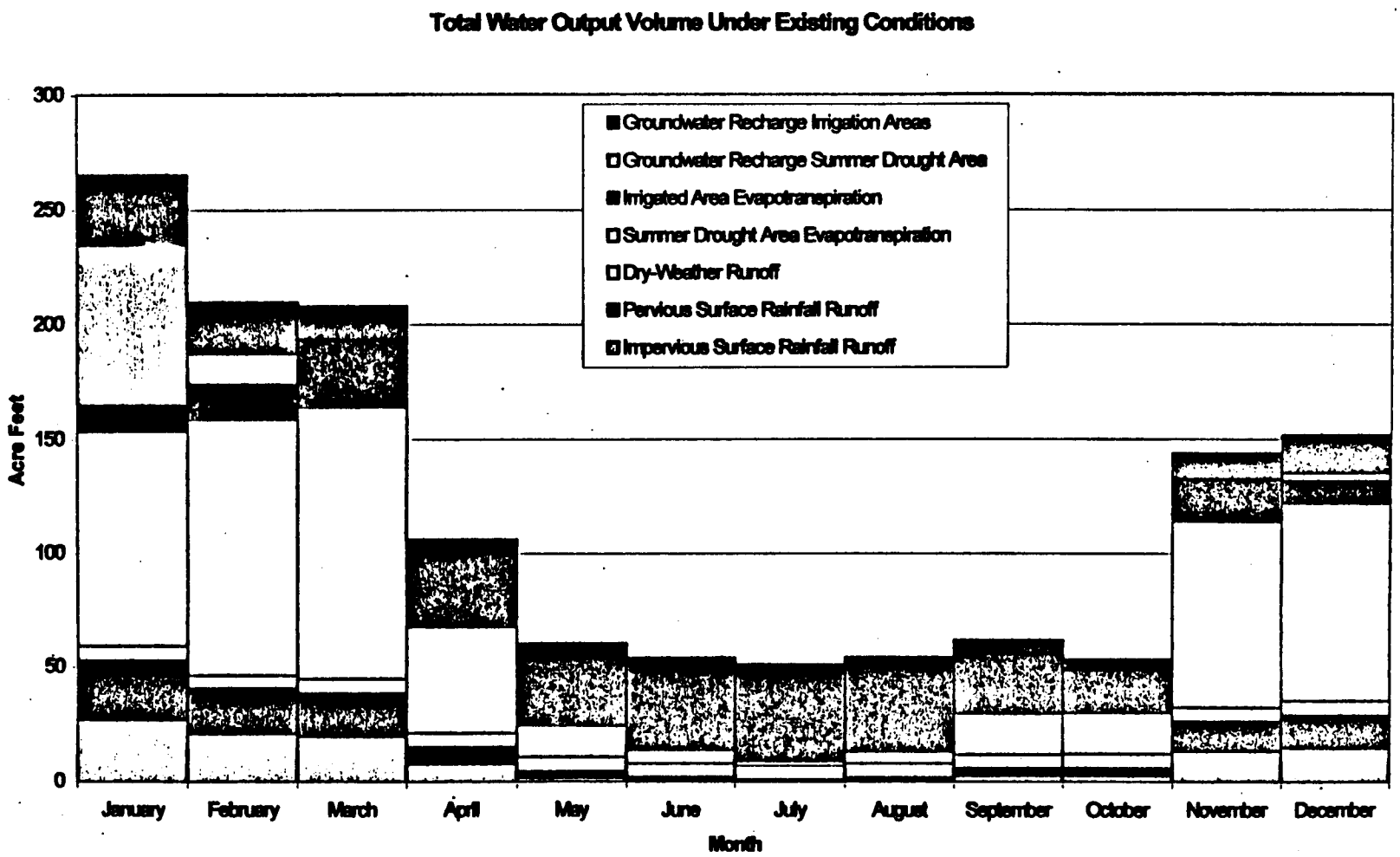


Figure 9. Average Total Water Outputs Under Existing Conditions.

Ex. 27
L.T.

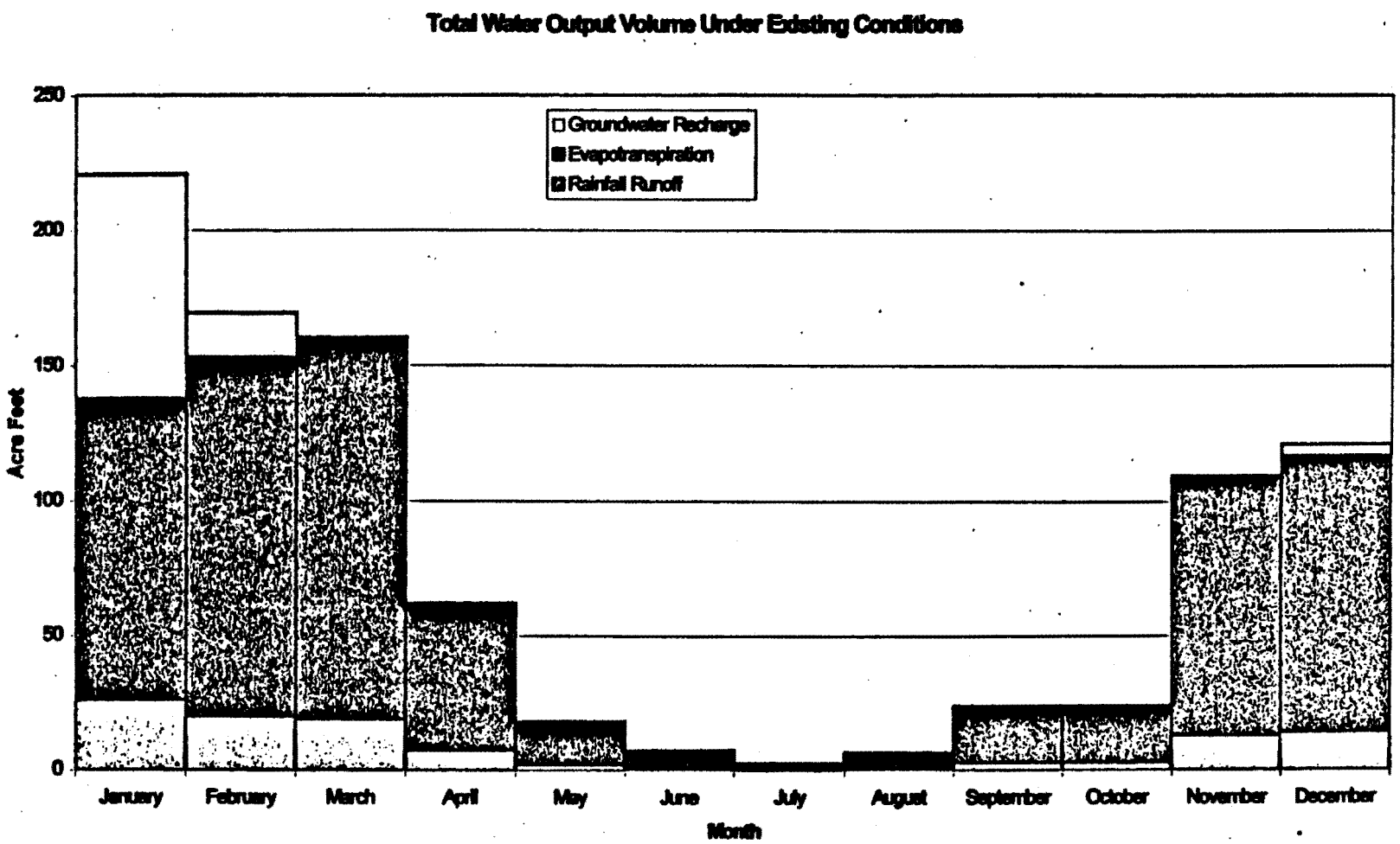


Figure 9. Average Total Water Outputs Under Existing Conditions.

Ex. 27a
Muddy C.

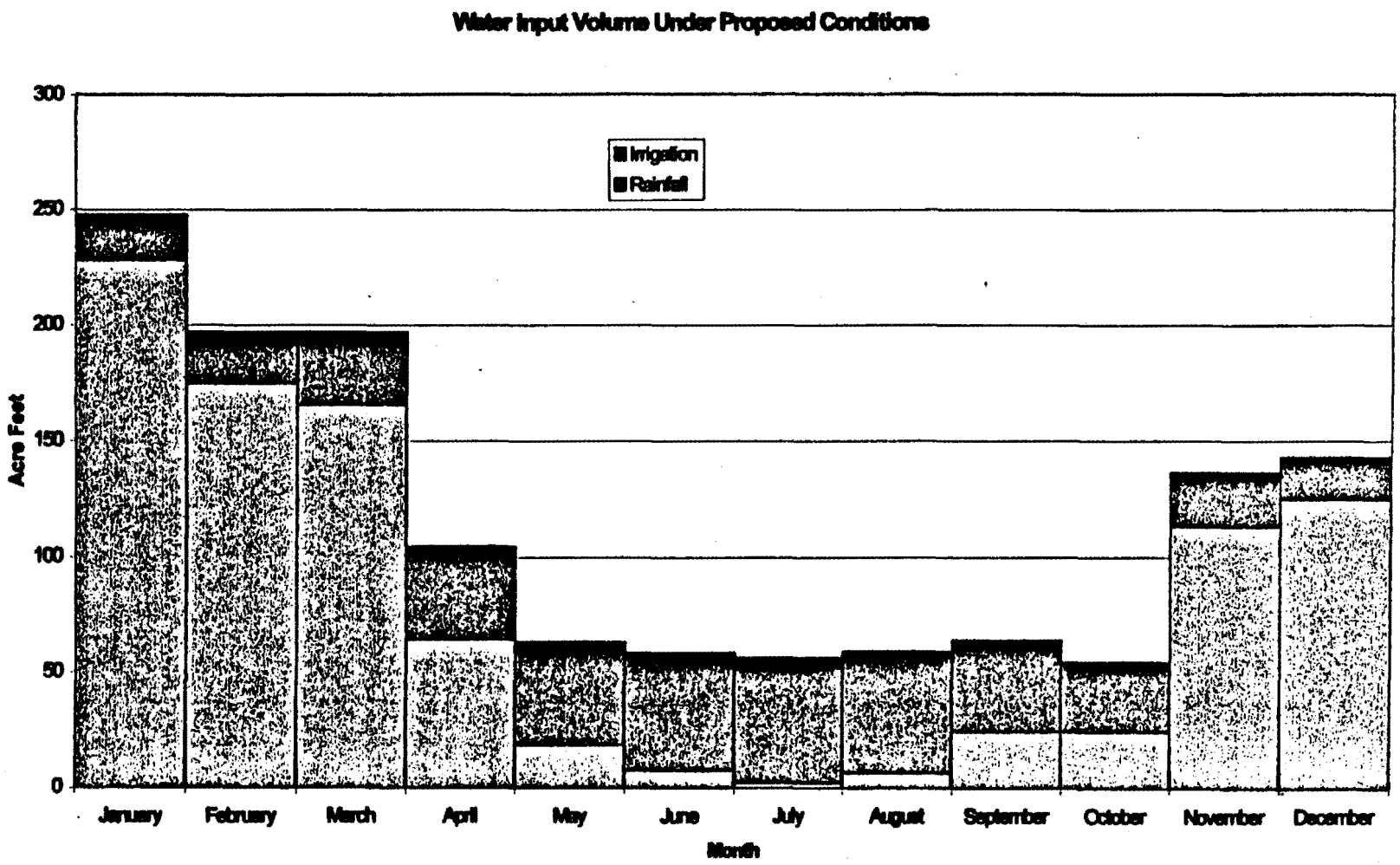


Figure 10. Average Rainfall and Irrigation Water Input Under Proposed Conditions.

Ex. 28
L T.

Ex. 28a
Muddy C.

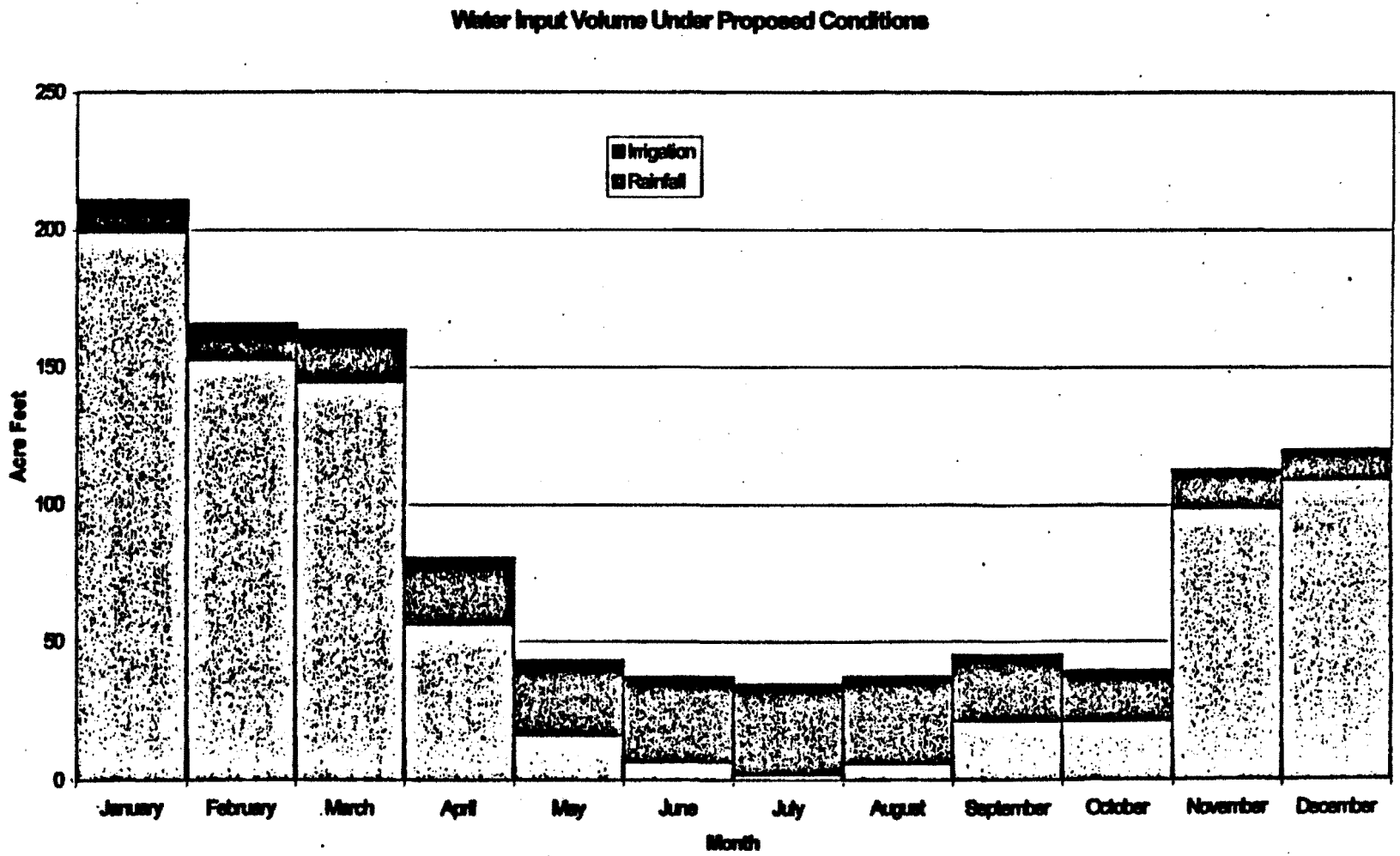


Figure 10. Average Rainfall and Irrigation Water Input Under Proposed Conditions.

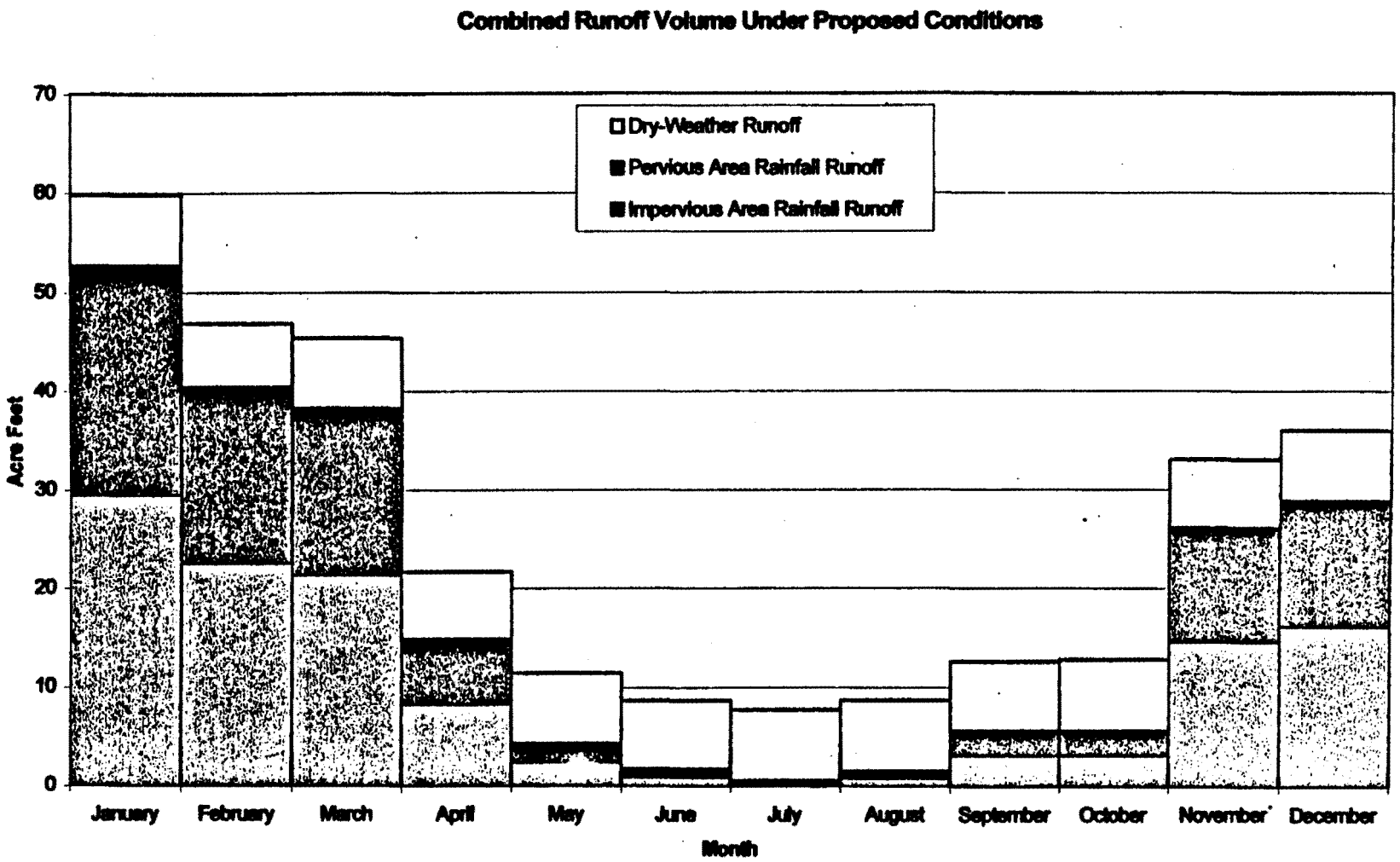


Figure 11. Average Runoff Volume for each Month Under Proposed Conditions.

Ex. 29
L T.

Ex. 29e
Muddy C.

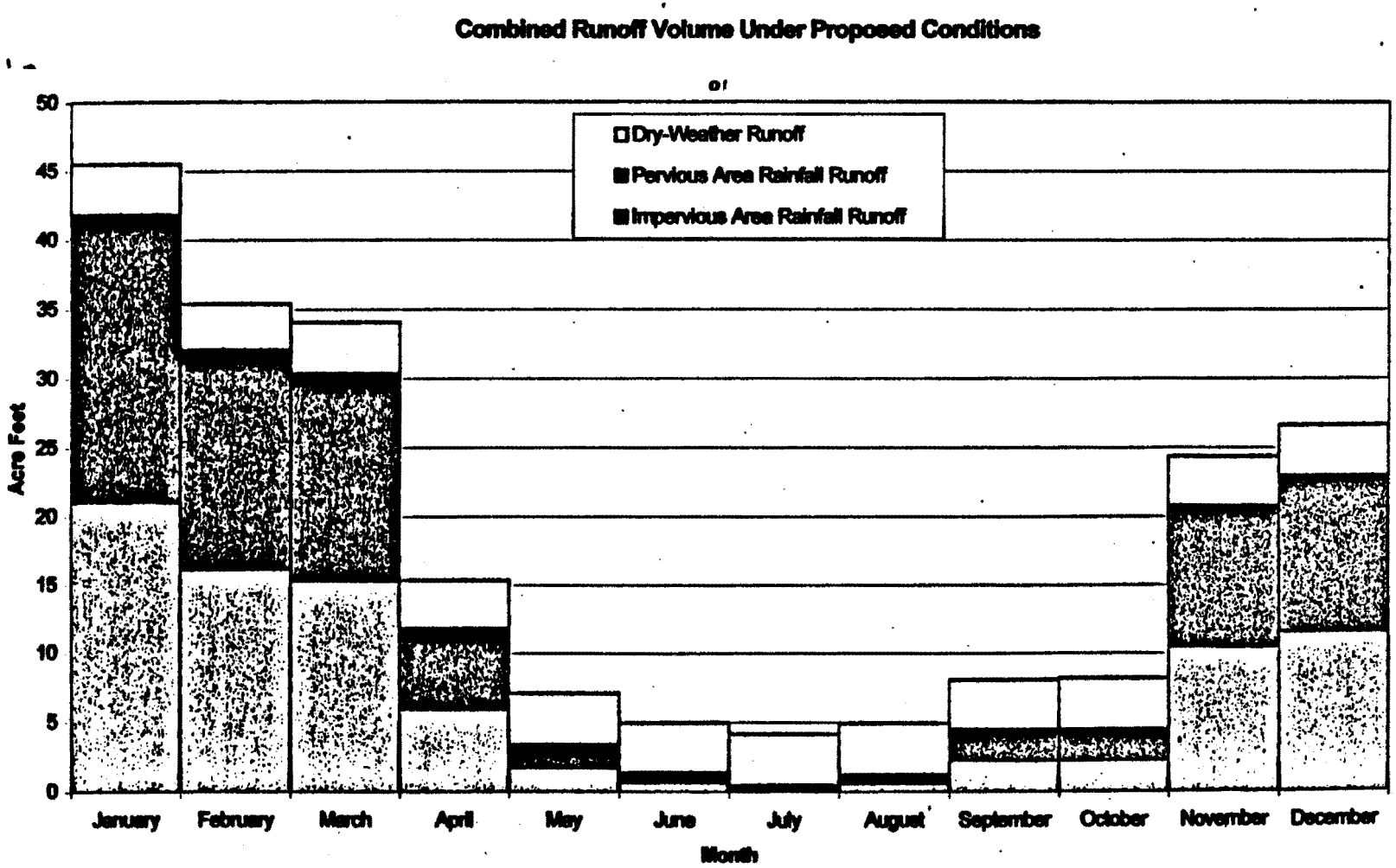


Figure 11. Average Runoff Volume for each Month Under Proposed Conditions.

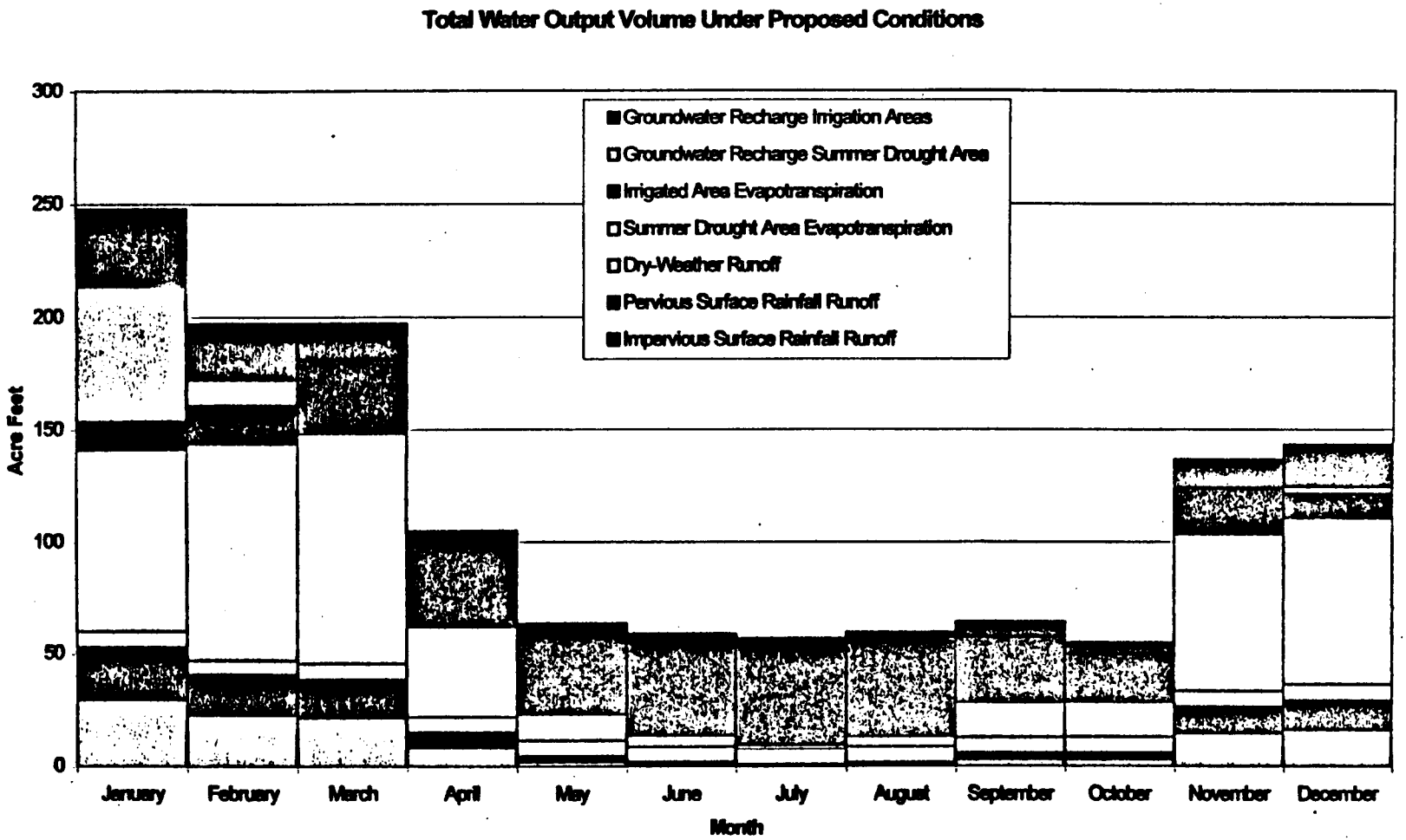


Figure 14. Average Total Water Outputs Under Proposed Conditions.

EX. 30
/ T.

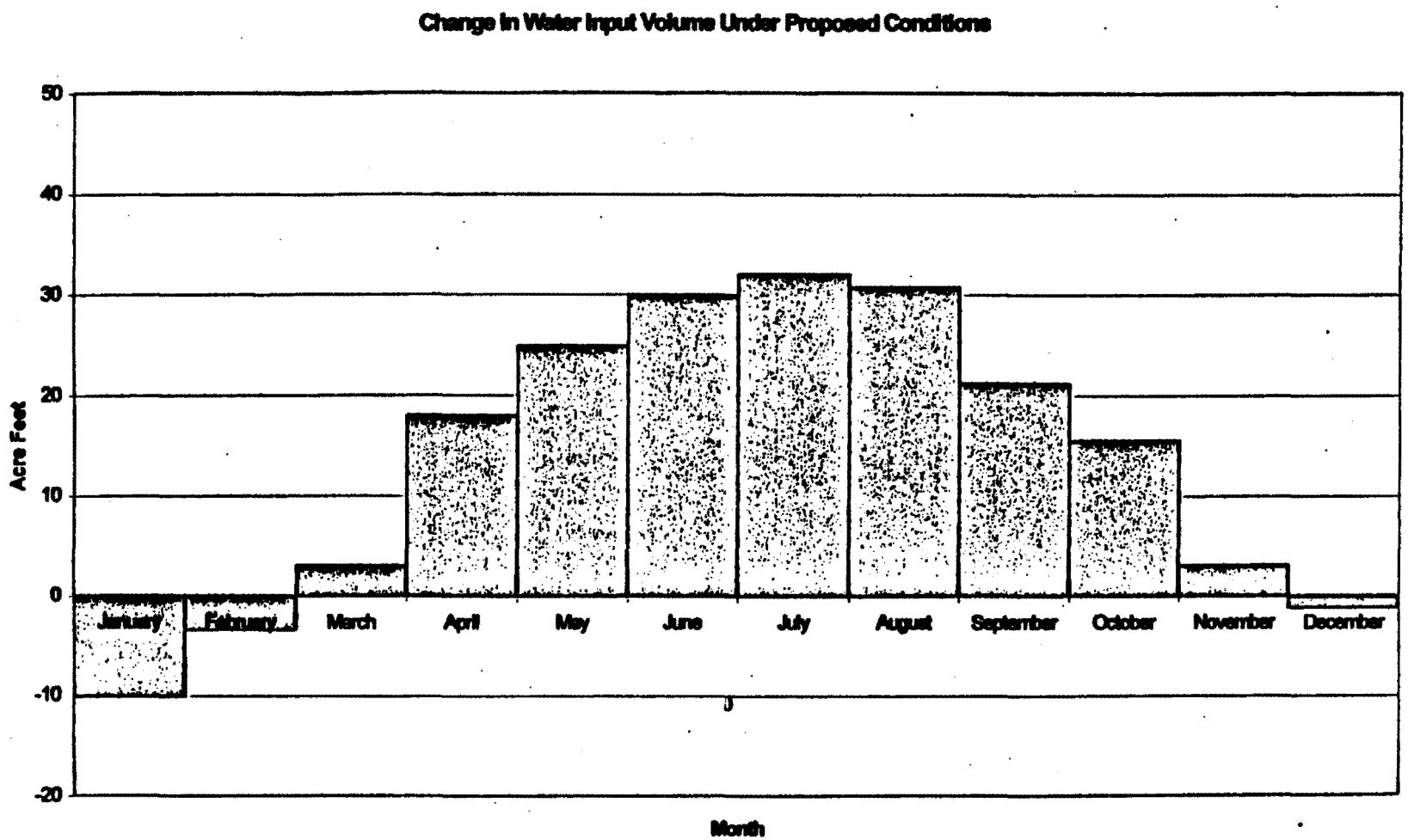


Figure 15. Estimated Increase in Water Input Due to Proposed Conditions.

Ex. 30a
Muddy C.

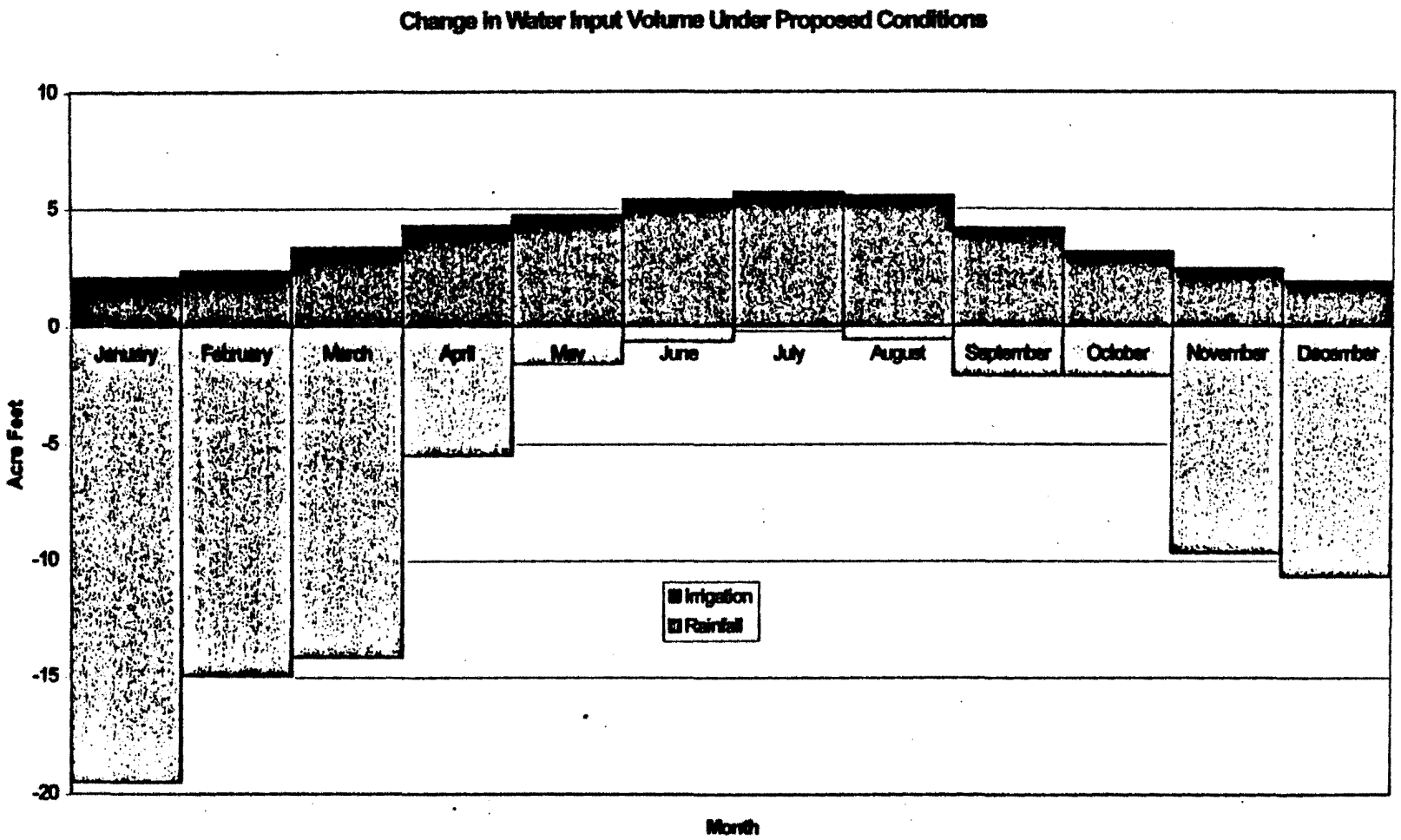


Figure 15. Estimated Increase in Water Input Due to Proposed Conditions.

EX. 31
/ T.

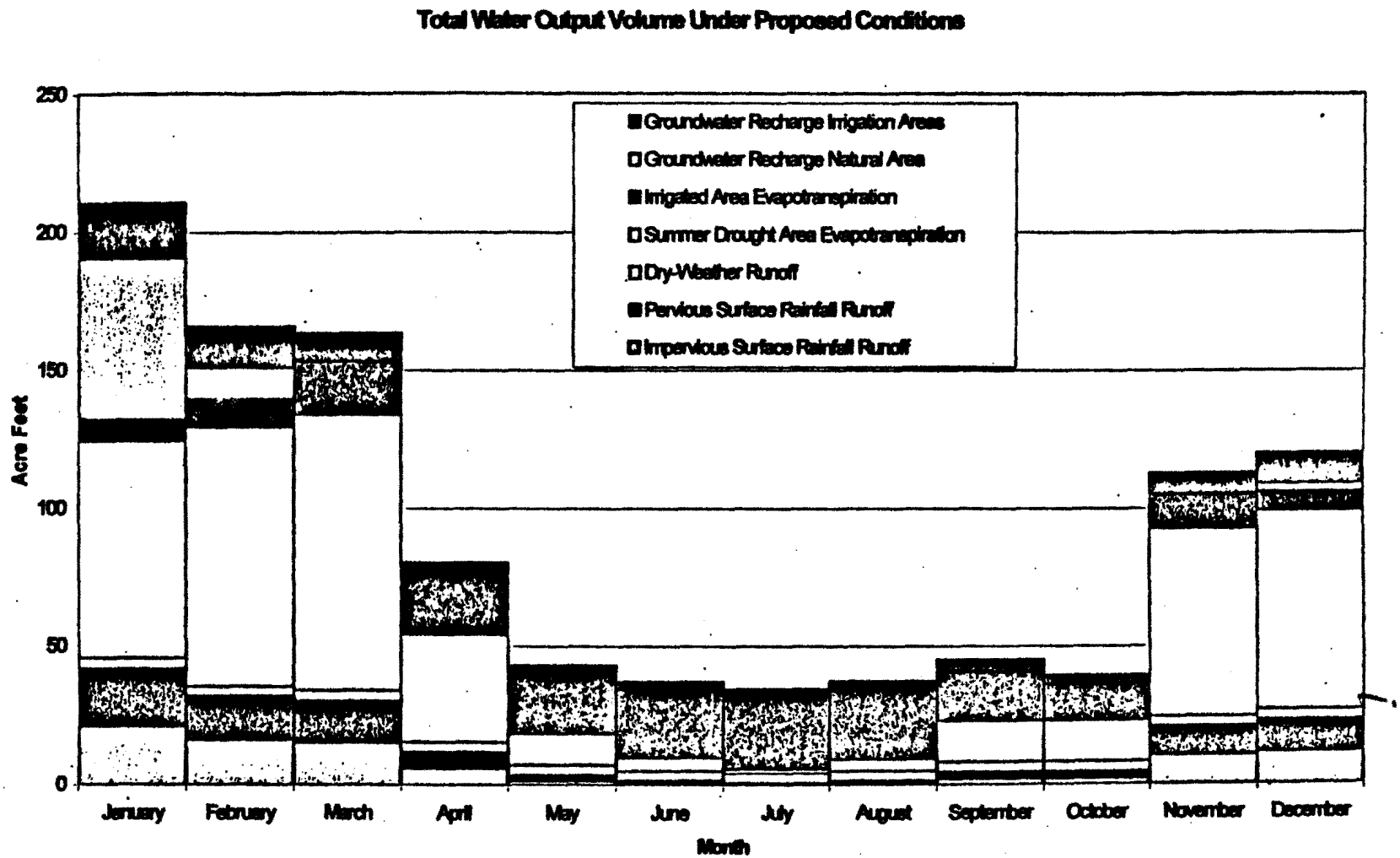


Figure 14. Average Total Water Outputs Under Proposed Conditions.

Ex. 31a
Muddy C.

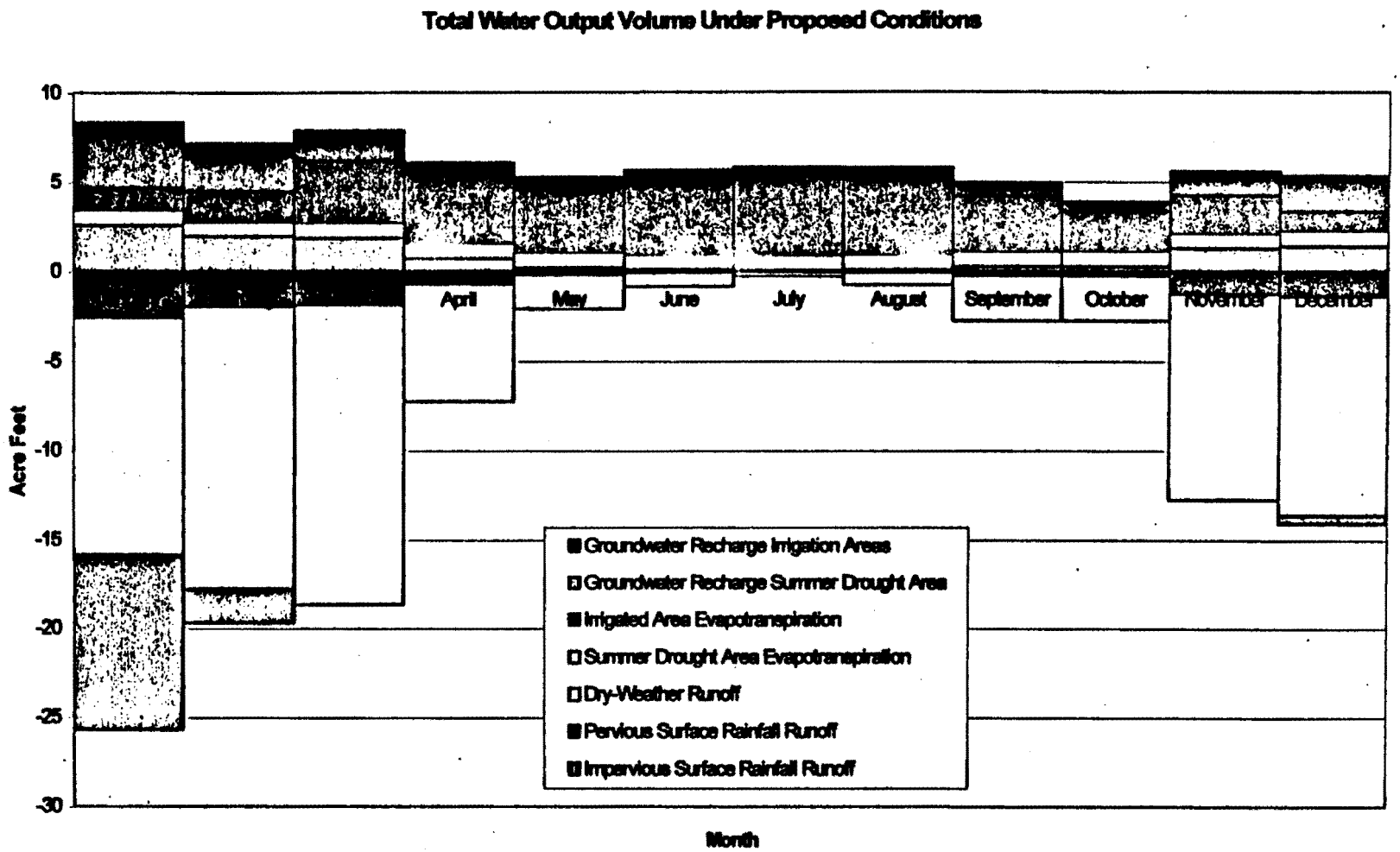


Figure 19. Estimated Increase in Average Total Water Outputs Under Proposed Conditions.

Ex. 32
L T.

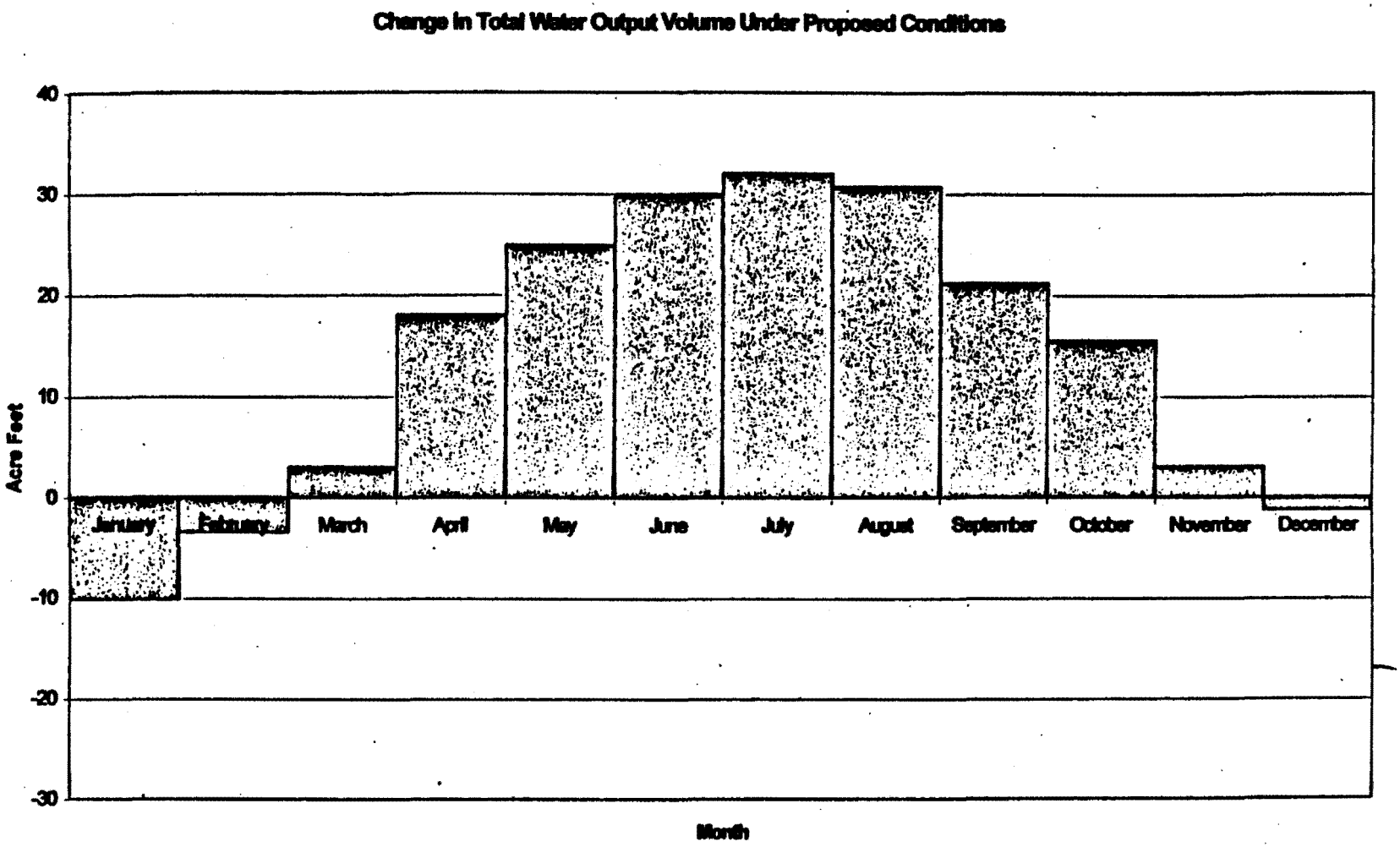


Figure 19. Estimated Increase in Average Total Water Outputs Under Proposed Conditions.

Ex. 32a
Muddy C.

NEWPORT COAST LOCAL COASTAL PROGRAM - SECOND AMENDMENT

PLANNED COMMUNITY STATISTICAL TABLE - FOURTH REVISION (COASTAL COMMISSION)

LAND USE CATEGORY/CODE	PLANNING AREA	GROSS ACRES NON-COMMERCIAL		GROSS ACRES COMMERCIAL	ESTIMATED(1) DWELLING UNITS/ ACCOMMODATIONS		MAXIMUM(2) DWELLING UNITS/ ACCOMMODATIONS	Status as of February 2000: DWELLING UNITS ON APPROVED SUBDIVISIONS: Tentative Maps	Final Maps	BUILDING PERMITS ISSUED OR UNITS UNDER CONSTRUCTION
RESIDENTIAL:										
High/H	1A	25.5		-	29		150	29	29	29
Medium/M	1B	133.7		-	117		140	117	117	87
High/H	1C	~~184.9~~	179.4 (a)	(3)	~~247~~	173 (d)	970	171	171	60
Medium/M	2A	109.1		(3)	~~184~~	212 (d)	380	204	202	141
Medium/M	2B	203.3		(3)	488		530	488	488	487
Medium/M	2C	~~261.5~~	283.7 (d)	-	~~490~~	567 (d)	905	386	228	183
Medium/M	3A	100.3		(3)	~~242~~	179 (b)	470	182	179	12
Medium/M	3B	150.7		(3)	~~560~~	248 (b)	465	245	165	0
Medium/M	4A	237.4		-	~~227~~	180 (c)	784	180	0	0
Medium/M	4B	100.8		-	~~108~~	100 (c)	507	100	0	0
Medium-Low/ML	5	~~150.0~~	135.0 (d)	-	~~225~~	156 (d)	300	0	0	0
Low/L	6	~~80.0~~	72.8 (d)	-	~~75~~	0 (d)	75	0	0	0
Low/L	7A	25.0		-	~~2~~	0 (d)	18	0	0	0
Low/L	7B	25.0		-	~~2~~	0 (d)	10	0	0	0
High/H	8	35.7		(3)	~~115~~	96 (d)	384	96	96	77
Medium-Low/ML	9	50.6 (4)		-	55		76	55	55	3
TOTAL RESIDENTIAL		~~1,873.6~~	1,868.0	10.0 (3)	2,600		2,600	2,253	1,730	1,079
OPEN SPACE/RECREATION:										
GOLF COURSE/G	10A	294.6		-	-		-	-	-	-
	10B	58.8								
RECREATION/R:										
Buck Gully, Los Trancos/	11A	203.5		-	-		-	-	-	-
Muddy Canyons, Pelican/	11B	99.5		-	-		-	-	-	-
Wishbone Hill Areas	12A	~~602.3~~	577.3 (d)	-	-		-	-	-	-
	12B	58.0		-	-		-	-	-	-
	12C	98.0		-	-		-	-	-	-
	12D	34.5		-	-		-	-	-	-
	12E	~~274.0~~	289.6 (d)	-	-		-	-	-	-
El Moro Elementary School	12F	14.5								
Moro Sliver	12G	35.0								
	12H	37.5								
	12I	19.6								
Laguna Beach County Water Distrc	12J	9.0								
Crystal Cove State Park	17	2,807.0 (5)		-	-		-	-	-	-
Irvine Coast Wilderness	18	544.0 (6)		-	-		-	-	-	-
Regional Park (5)	19	133.0 (6)		-	-		-	-	-	-
Recreation Parcels Adjacent	20B	12.0		-	-		-	-	-	-
to Laguna Canyon Road	20C	8.0		-	-		-	-	-	-
CONSERVATION/C										
Conservation Parcels Adjacent	16A	10.0								
to Laguna Canyon Road	16B	1.4								
Irvine Coast Wilderness	21A/21B	1,989.0 (6)		-	-		-	-	-	-
Regional Park (5)	21C/21D									
TOTAL OPEN SPACE & RECREATION		~~7,343.2~~	7,333.2	0	0		0	0	0	0
TOURIST COMMERCIAL/TC	13A	6.2 (7)		48.8	546 (8)		1,100	546		
	13B	-		27.2	154 (8)		600	154		
	13C	5.6 (7)		31.4	450		750	450		
	13D	2.6 (7)		35.4	300		650	-		
	13E	46.0 (7)		13.4	150		300	-		
	13F	13.6 (7)		-	0		0	-		
	14	-		27.7	250		250	-		
	20A	-		17.4	0		0	-		
TOTAL COMMERCIAL		74.0 (7)		201.3	2,150		2,150	1,150	0	0
GRAND TOTAL		~~9,290.7~~	9,275.2	211.3 (3)	2,600/2,150		2,600/2,150	2,253/1,150	1,730	1,079

(1) Estimated number of dwelling units or accommodations per Planning Area.
(2) Maximum number of dwelling units or accommodations per Planning Area.
(3) A maximum of 10 gross acres (100,000 sq.ft.) of Neighborhood Commercial will be permitted in Medium/High Residential Planning Areas PA 1C, PA 2A, PA 2B, PA 3A, PA 3B or PA 8.
(4) 27.4 acres of Residential Planning Area 9 is devoted to Golf Course.
(5) Acreage includes the mobile home park.
(6) Total area of Irvine Coast Wilderness Regional Park is 2,866 acres.
(7) 74.0 acres within Tourist Commercial Planning Areas is devoted to Golf Course.
(8) The equivalent of 700 resort accommodations have been approved in a Coastal Development Permit for the Marriott Vacation Resort.

TECHNICAL REFINEMENTS
(a) Reflects revisions made as part of Site Development Permit PA 970180 and PA 980037, administratively approved on April 14, 1998 and June 9, 1998, respectively
(b) Reflects Coastal Development Permit PA 980049, approved by the County of Orange Planning Commission on July 7, 1998, and subsequent technical refinements
(c) Reflects Coastal Development Permit PA 980139, approved by the County of Orange Planning Commission on November 17, 1998
(d) Reflects modifications proposed as part of appeal of Master Coastal Development Permit - 7th Amendment, including a balancing of dwelling units reflecting final development plans

Ex. 33

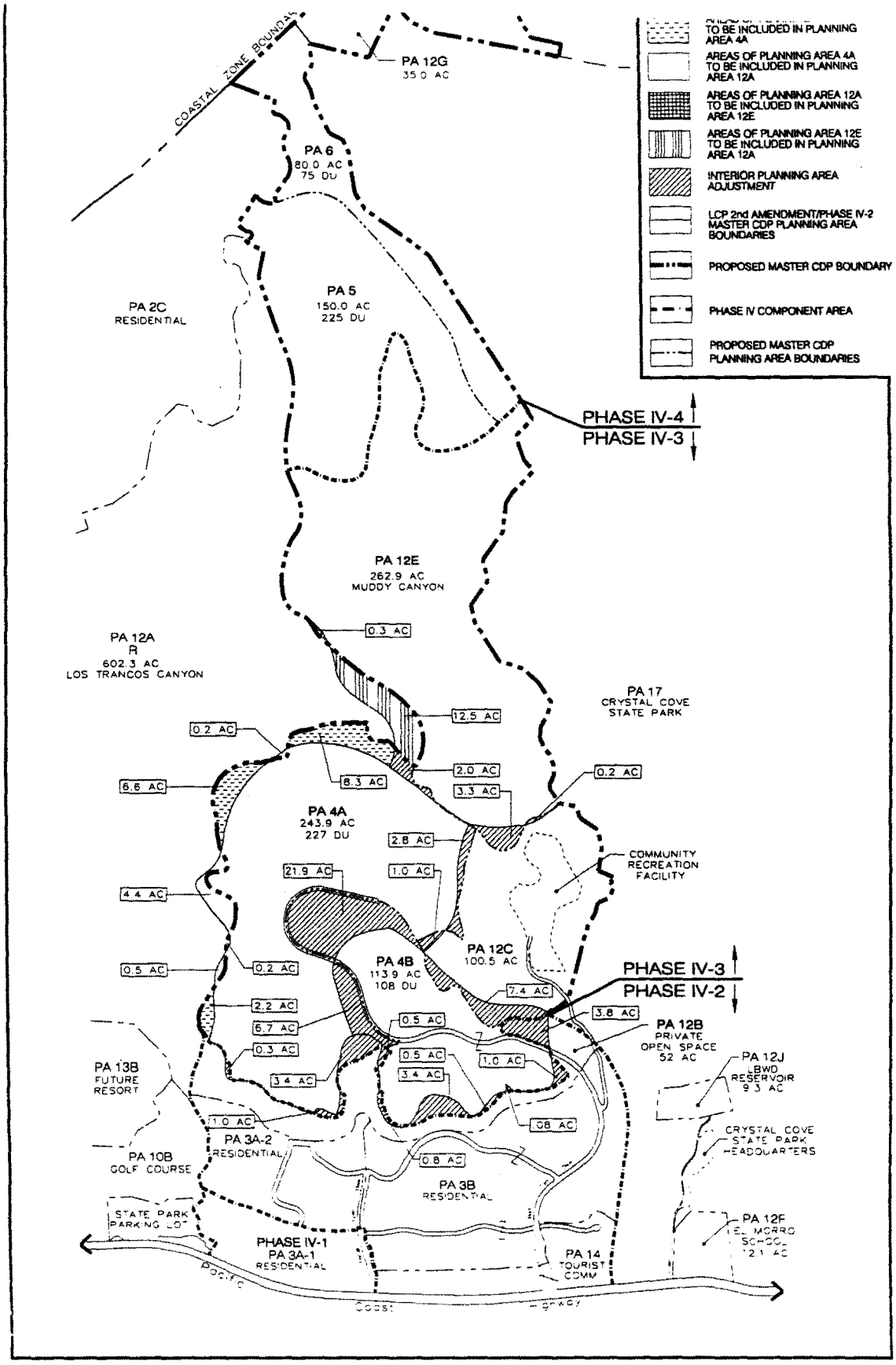


Exhibit 2.2

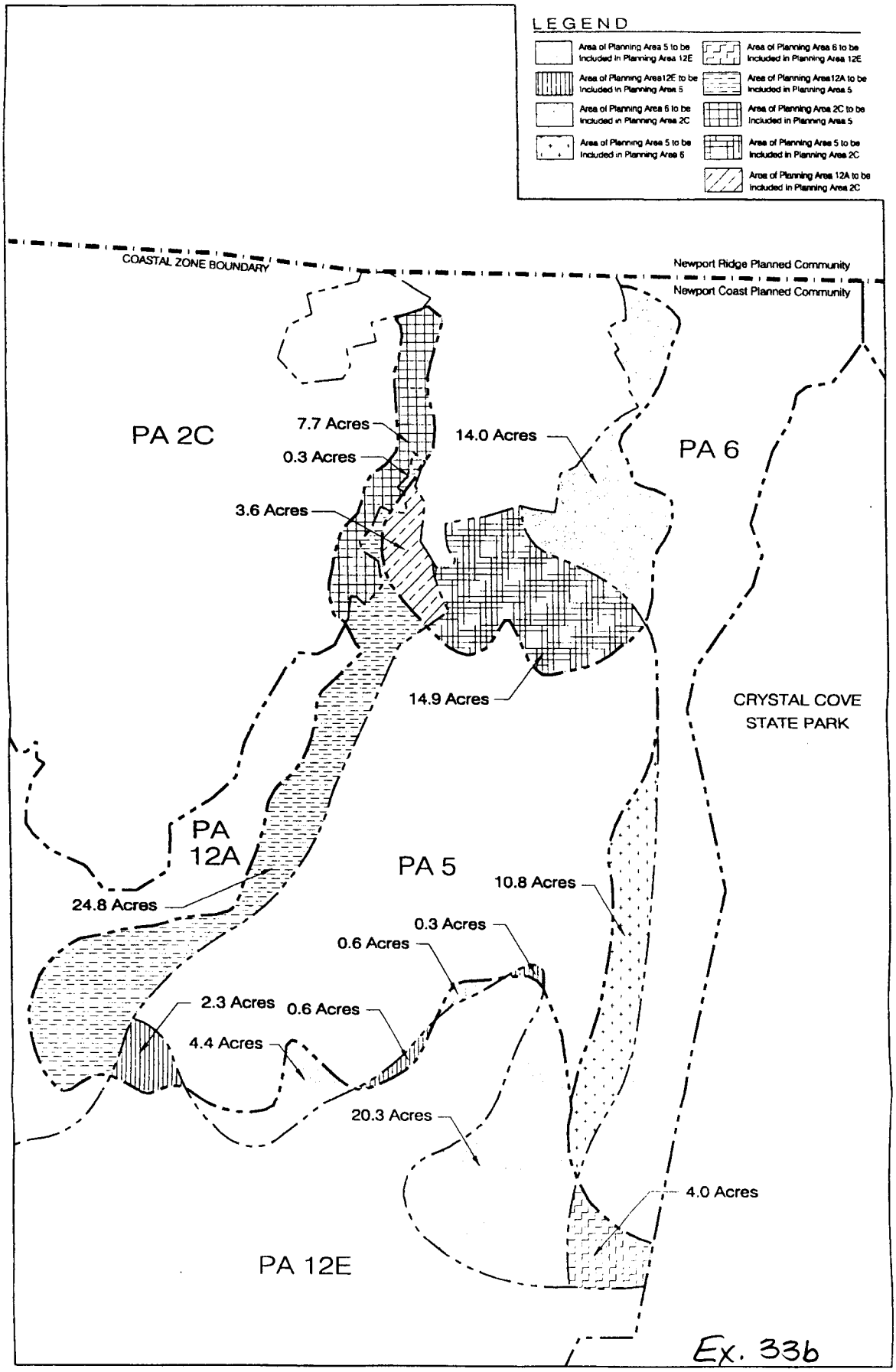
PROPOSED BOUNDARY ADJUSTMENT

Master Coastal Development Permit-Seventh Amendment

THE IRVINE COMPANY

FORMA

Ex. 33a

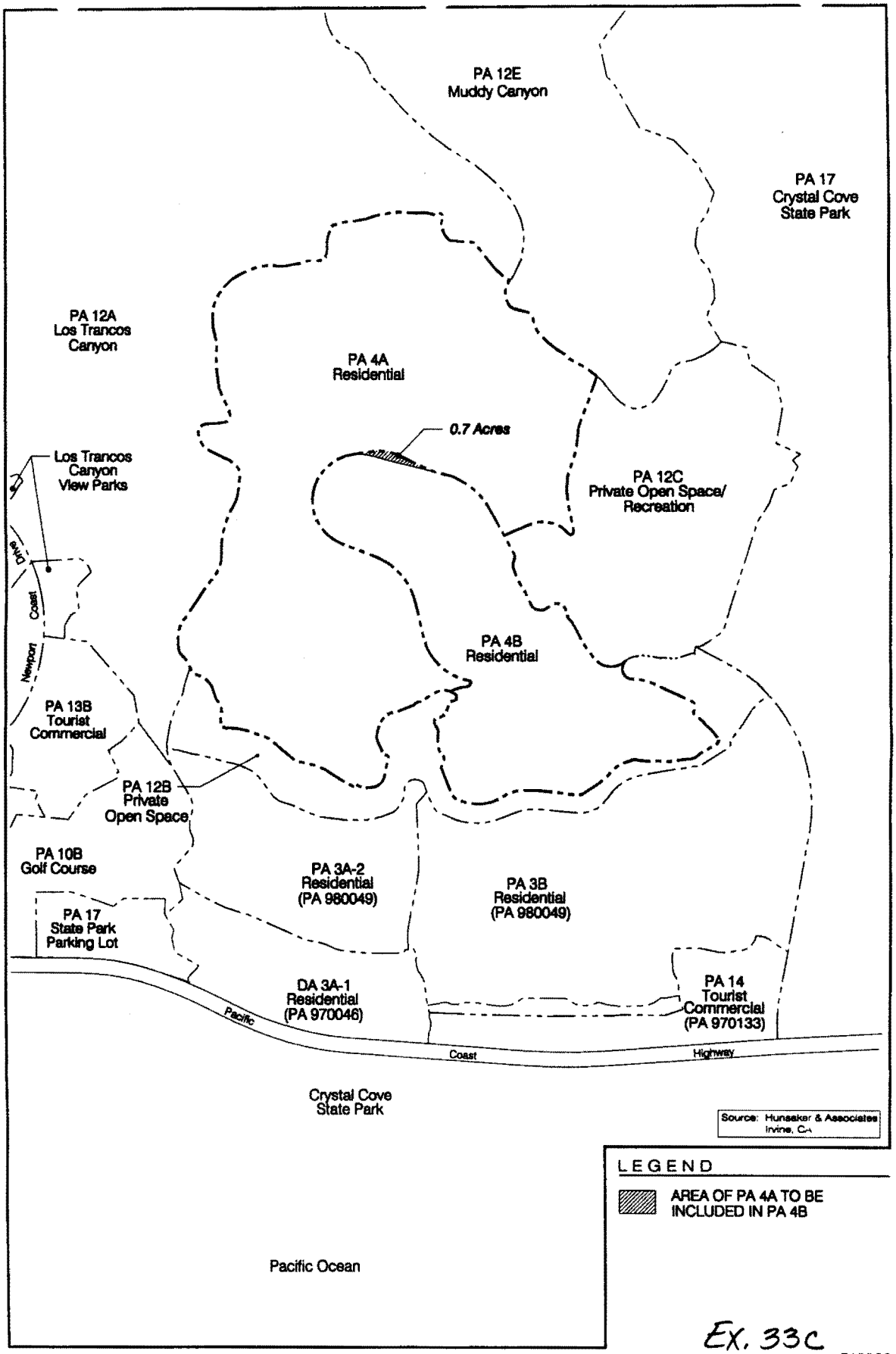


Ex. 33b

THE IRVINE COMPANY

PROPOSED BOUNDARY ADJUSTMENT
Newport Coast Planning Areas 2C, 5 and 6

FORMA



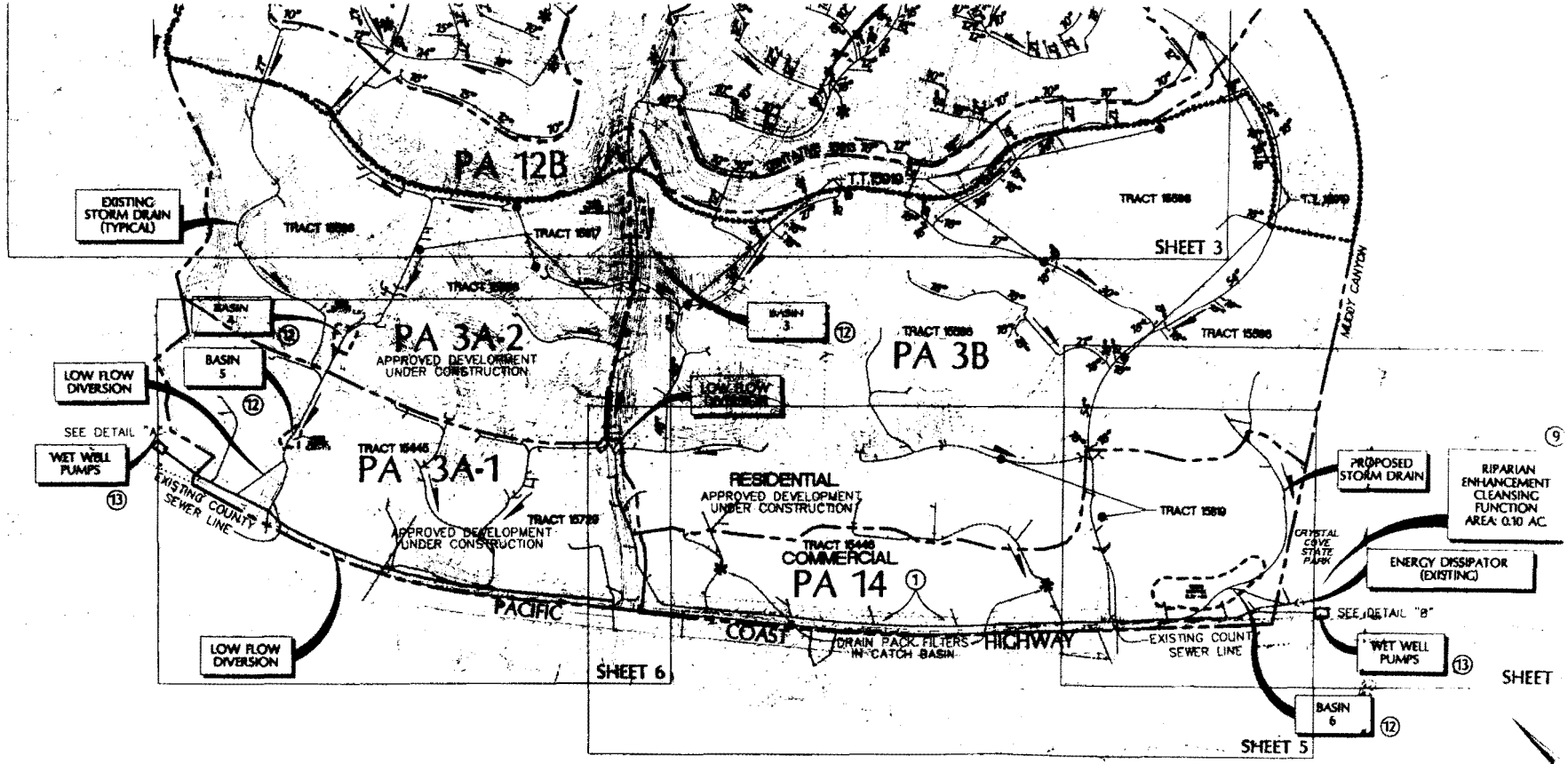
Ex. 33c

Exhibit 2.2

PROPOSED BOUNDARY ADJUSTMENT

Crystal Cove Phase IV-3 Coastal Development Permit

THE IRVINE COMPANY



LEGEND

- Appeal Area Boundary
- Planning Area Boundary
- Wet Well and Pumps
- Existing Storm Drain
- Proposed Storm Drain
- 18" Storm Drain Pipe Size
- Direction of Flow
- Energy Dissipator
- Riparian Enhancement
- DrainPac Filter

1. Grassy Swale - Cleansing Function Around Parking Lot Within Commercial Center (See sheet 4)
2. Covered Wash Rack Drains into Sewer
3. Pool and Spa Drainage into Sewer
4. Water quality swales throughout development area; including cul-de-sacs, streetscapes/parkways, parking lots and recreation centers.
5. Connection of equestrian wash racks. Pool and spa back flows into sewer.
6. Storm drain filters for hydrocarbons, heavy metals, sediment, bacteria and trash.
7. Low flows within riparian vegetation natural cleansing function.
8. Energy dissipator at canyon bottom. (slows water velocity)
9. Riparian vegetation
10. Agricultural reservoir/polishing pond.
11. Wetlands
12. Water quality detention basin.
13. Low-flow dry season diverted into POH sewer line.

SHEET 1 — Index to Sheets

0 125 250 500

REVISION DATE 4/20/2000

SHEET INDE

SHEET #	SHEET TITLE
SHEET 1	COMPOSITE
SHEET 2	PA5 & PA6
SHEET 3	PA 4A & PA4B
SHEET 4	RECREATION CENTER P
SHEET 5	COMMERCIAL CENTER
SHEET 6	LOS TRANCOS & MUDD

COMPOS

SHEET 1 OF

DETAIL "A" & "B" : LOW FLOW PUMPING FACILITIES

Ex. 34

07/17/20

Elements of Scope of Work for Hydrologic Expert
Newport Coast Appeal
March 2000
Revised

BACKGROUND STATEMENT

The proposed development project has the potential to substantially modify the current hydrologic regime and patterns of sediment erosion and deposition. The California Coastal Act charges the California Coastal Commission with the responsibility to thoroughly review all such projects and to insure that any approved project is in compliance with the Coastal Act and applicable certified Local Coastal Program. The Irvine Company will soon be providing the Commission staff with detailed technical information on hydrology and sedimentation. In order to assist the Commission and staff in the review of this material, The Irvine Company has agreed to fund a third party reviewer. This third party reviewer will review all of the material provided by The Irvine Company, provide staff with an independent review of the technical work, including but not limited to, a review of input assumptions, modeling, results and conclusions. This independent review will be used by staff in its project analysis and recommendations to the Commission concerning compliance with the Coastal Act and the certified Local Coastal Program. Therefore, throughout the independent review process, the independent reviewer must work with Commission staff to insure that the review effort accomplishes these objectives.

It must be emphasized that although The Irvine Company is to compensate the third party reviewer for the awarded work, the third party reviewer will be working under the supervision, management, and direction of the Commission staff only. Until the review is completed and the Commission staff has determined that the work product is satisfactory, the third party reviewer should not have any contact with The Irvine Company or any of it's agents, consultants, or contractors involved with this activity (other than that administrative work necessary for development and authorization of this contract), or other interested parties or agencies, unless a member of the Commission staff is either present or part of a conference call. Deviation from this protocol by any member or representative of the third party review company is grounds for immediate suspension of work, nullification of The Irvine Company's financial responsibility for any work performed, and nullification of the utility of the third party review process by the Commission staff. The nature of this review arrangement necessitates that The Irvine Company, the Commission staff and the third party reviewer work cooperatively, but all correspondence and contact must go through the Commission contact unless it is determined, in writing, that a deviation from this protocol is necessary. At this time, Teresa Henry has been identified as the Commission contact for all communications with the third party reviewer for purposes of these work tasks.

The Irvine Company is now in the process of preparing reports on site hydrology and sedimentation. As soon as practicable, The Irvine Company will provide the independent third party reviewer with any and all information that will facilitate the third party review. Some material will be presented in stages. The material will include, but is not limited to:

- Project description.
- Thorough description of all appropriate baseline conditions, including but not limited to: location of all Environmentally Sensitive Habitat Areas (ESHAs), location of any Areas of Special Biological Significance (ASBS), as designated by the State Water Resources Control Board), hydrology, geology, soil types, channel stability, sediment yields and transport mechanisms (overland, in-stream and littoral), existing development induced erosion areas, and a coastal sediment budget.
- Site maps of all proposed grading and development areas, all proposed and existing roads, storm drain facilities, and all stations or locations that were sampled or monitored to establish "pre-project" conditions.

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p. 1

- The detention plans, with locations used to calculate pre- and post-project flows.
- Hydrologic modeling results, including peak discharge volume and duration, for storm events with recurrence intervals of 2, 5, 10, 25 and 100 years for pre- and post-project conditions, monthly rainfall with a qualitative discussion of streamflow (and any quantitative support that is available), low flow volumes, and flow durations for pre- and post-project conditions, pre- and post-project hydrographs, and changes in sedimentation patterns (erosion and accretion), sedimentation rates, and volumes at various locations within the site, at the project boundaries, at Crystal Cove State Beach and at the ASBS.
- Input assumptions for hydrologic modeling and for sediment yield.
- Significance of these changes to coastal resources.
- Sensitivity of results to changes in input parameters.
- Analysis of error in the models and sensitivity analysis.
- Pre- and post-development water budget analysis for evaluation of potential changes in biological regimes.

Scope of Work

The third party reviewer will undertake the following tasks:

1. Work with Commission staff and The Irvine Company to develop an achievable schedule (Key steps provided in the attached table).

2. Independent examination of the appropriateness of the modeling to the project site.

3. Independent examination of hydrologic assumptions, input, modeling results and conclusions. Independent examination of assumptions, input, and results of sediment yields, grain size analysis, chemical tracer analysis and effects on the sediment budgets of the stream channel, beach, ASBS and littoral area.

4. Site visit, with Commission staff and TIC personnel, to facilitate review of hydrologic and hydraulic material.

5. Independent assessment of the major causes of bank channel formation and the variability of those causes.

6. Independent assessment of proposed detention program and sediment management program; independent assessment of compliance with agreed-upon standards (to be provided separately by Commission staff); recommendations for ways to improve or modify the project, either to reach compliance or reach compliance in the least environmentally damaging manner.

7. Coordination with third party water quality reviewer.

8. Regular verbal communication with Commission staff on project review, as needed.

9. Detailed presentation of independent analysis and conclusions to staff of the Commission.

10. Preparation of a final written report, outlining detailed third party review.

11. Presentation of final written report to The Irvine Company, staff and consultants to The Irvine Company and any other interested parties.

12. Development of responses to any comments or concerns raised by any parties.

13. Attendance at Commission hearing to respond to Commission questions about independent review, or to present information developed from independent analysis.

TABLE 1: SCHEDULE OF KEY REVIEW STEPS

Date/ or Time Following Receipt of Specific Material	Key Steps
4/3/00	Identification of any materials that will be needed from The Irvine Company, other than those listed above, that will be needed to complete the independent third party review. (The third party reviewer will not be limited to only these identified materials; however, to the extent practicable, the independent reviewer shall try to provide The Irvine Company with a complete a listing of needed materials early in the review process.)
3/29/00	Site Visit
4/7-28 (hydrology/sediment) 4/25-5/5 (coastal resources)	Independent examination of the appropriateness of the modeling to the project site
5/11/00	Presentation of analysis to staff of the Commission
5/17/00	Presentation of final written report to The Irvine Company
5/19/00	Presentation of final written report to Coastal Commission staff
6/2/00	Development of responses to any comments or concerns raised by any parties for inclusion in staff report addendum
	Attendance at Commission hearing to respond to Commission questions about independent review, or to present information developed from independent analysis

Irvinecoast.SOWhydro/sed.final.revised3.28.00

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Newport Coast Phases IV-3 and IV-4 Appeal
Technical Reports

Irvine Community Development Company
August 2000

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TABLE OF CONTENTS

A. Geotechnical

Leighton and Associates 2000. Crystal Cove Watershed Area, Newport Coast, County of Orange, California. Report prepared for Irvine Community Development Company. May 31, 2000. 12p.

Hurst, Richard W. 2000. Muddy Canyon Sedimentation Study, Crystal Cove, Orange County, California. Report prepared for Leighton and Associates. June 2, 2000. 27p.

Leighton and Associates. 2000. Geotechnical Review of Proposed Retention Basins in Tract 15586 and 15446, Planning Areas 3A/12B and 14, Crystal Cove, Newport Coast, County of Orange, California. Letter report prepared for Irvine Community Development Company. March 23, 2000. 3p.

NMG Geotechnical, Inc. 2000. Preliminary Geotechnical Review of Proposed Detention Basins 1 and 2, Planning Areas 5 & 6, Phase IV, Newport Coast, County of Orange, California. Letter report prepared for Irvine Community Development Company. April 5, 2000. 2 p.

Goffman, McCormick & Urban, Inc. 2000. Geology of Muddy Canyon, Newport Coast, Orange County, California. Report prepared for Irvine Community Development Company. February 22, 2000. 7 p. plus appendices

NMG Geotechnical, Inc., 2000, Supplemental Geotechnical Investigation and Review of 40-scale Preliminary Grading Plan, Tract 15811, Planning Area 2C (Portion), 5 & 6, and Planning Area 15, Newport Coast, County of Orange, California, Project No. 98048-01, dated June 6, 2000. 38p plus appendices

Goffman, McCormick & Urban, Inc., 2000 Volume I, Report of Geotechnical Studies, Crystal Cove Custom Lots and Recreation Area Access Road, Newport Coast, South Orange County, California, dated August 6, 1999. Volume II, Report of Geotechnical Studies, Crystal Cove Recreation Area Access Road, Newport Coast, South Orange County, California, dated August 6, 1999. 45p plus appendices

Leighton & Associates, 2000. Fill Slope Design Along Muddy Canyon, Appeal Area, Tract 15586 Phase 2, Crystal Cove, Newport Coast, County of Orange, California, letter to Irvine Community Development Company, dated June 16, 2000. Letter to Irvine Community Development Company, dated June 16, 2000. 4p

B. Hydrology

Tettemer and Associates, 2000. Revisions to the "Newport Coast Planned Community, Revised Runoff Management Plan, Hydrologic Analysis Report," dated April 2000. Letter to Irvine Community Development Company, dated April 20, 2000. 2 p.

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Tettemer and Associates, 2000. Newport Coast Planned Community Revised Runoff Management Plan Hydrological Analysis. Report prepared for Irvine Community Development Company. April 2000. 33 p. plus appendices.

Hunsaker and Associates, 2000. Master Drainage and Water Quality Plan – Detention Basin Drainage Areas. Plan prepared for Irvine Community Development Company. April 7, 2000. 1 sheet.

Tettemer and Associates, 2000. Letter prepared for The Irvine Company clarifying the pre and post development drainage conditions in Muddy Canyon dated May 16, 2000. 1p and attachments.

Tettemer & Associates, 2000. Revisions to the "Newport Coast Planned Community, Revised Runoff Management Plan, Hydrologic Analysis Report," dated April 2000, letter to Irvine Community Development Company dated June 14, 2000. 2p w/addendum

C. Inland Biology

LSA Associates, 2000. Wetland/Riparian Mitigation and Monitoring Plan: Crystal Cove/Newport Coast Phases IV-3 and IV-4, Orange County California. Report prepared for Irvine Community Development Company for Submittal to the U.S. Army Corps of Engineers, California Department of Fish and Game and California Coastal Commission. May 16, 2000. 58 p. plus appendix.

LSA Associates, 2000. Analysis of Coastal Drainages and Wetlands – Comparative History and Likely Future Habitat Conditions in Muddy Canyon. Report prepared for Irvine Community Development Company. April 20, 2000. 28 p. plus appendix.

Haglund, Thomas R., 2000. Considerations Regarding Riparian Habitat Expansion. Report prepared for Irvine Community Development Company by San Marino Environmental Associates. April 2000. 21 p. plus appendix.

LSA Associates, 2000. Effects of Bridge to Recreation Center on Wetland Habitats. Report prepared for Irvine Community Development Company. February 14, 2000. 2 p.

LSA Associates, Inc. (1999) Newport Coast Phase IV Southern Coastal Needlegrass Grassland. Report prepared for Irvine Community Development Company. November 5, 1999. 9 p. plus appendices.

LSA and Associates, 2000. Letter prepared for Culbertson Adams and Associates describing vegetation types within the graded slopes along Muddy Canyon dated June 13, 2000. 1p.

D. Kelp/Intertidal

Mitchell, Charles T., Beck, D.S., Curtis, M.D., Mitchell, K.L. and North, W.J. 2000. The Status of Kelp Beds at Newport Coast and Their Relationship to the Kelp Beds

along the Orange County Coast. Report prepared for Irvine Community Development Company by MBC Applied Environmental Sciences. April 2000. 12 p. plus appendices.

Deysher, Larry E., Senior Scientist, Coastal Resources Associates, Inc., 2000. The Potential Effects of Coastal Development On Subtidal Kelp Resources, dated June 16, 2000. 10p

E. Marine Mammals/Fish

Graham, Jeffrey B., 2000. The status of Marine Fishes and Mammals in Waters Near the Irvine Coast Marine Life Area of Special Biological Significance and in Relation to Other Southern California Coastline Areas. Report prepared for Irvine Community Development Company. May 27, 2000. 61p. and appendix.

Graham, Jeffrey B., (2000) The Status of Marine Fishes and Mammals in Waters Near the Irvine Coast Marine Life Area of Special Biological Significance and in relation to other Southern California Coast Line Areas. Report prepared for Irvine Community Development Company. June 12, 2000. 56 p.

F. Ocean Process

Jenkins, Scott A., and Wasyl, Joseph, 2000. Analysis of Near Shore Transport and Shoreline Change in the Presence of the Crystal Cove Development Project. Report prepared for Irvine Community Development Company. May 31, 2000. 87 p. and appendix.

Inman, Douglas and Masters, Patricia, 2000. Coastal Processes of the Crystal Cove Littoral Sub Cell and the Effects of Development. Part A. Geology and Mineralogy. Prepared for Irvine Community Development Company. June 5, 2000. 13p and appendix.

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G. Planning

Newport Coast Local Coastal Program, Second Amendment Planned Community Statistical Table, Part II Chapter 11.3, May 16, 2000.

Hunsaker and Associates. View Profiles for Proposed Bridge Across Muddy Canyon Creek within Planning Area 12C. Plan prepared for Irvine Community Development Company. April 4, 2000. 1 sheet

Culbertson Adams & Associates. Newport Coast Appeal-Utility/Fire Access Road. Letter prepared for California Coastal Commission. April 14, 2000. 2 p. plus attachments.

H. Sedimentology

Chang, Howard H., 2000. Sediment Yield Study for Muddy Canyon and Los Trancos Canyon. Report prepared for Irvine Community Development Company. May 2000. 52 p. plus appendices.

Chang, Howard H., 2000. Stability of Muddy Canyon and Los Trancos Canyon as Affected by Proposed Development. Letter to Irvine Community Development Company. May 18, 2000. 5 pages.

Chang, Howard H., 2000. Basin 6 modification on the "Sediment Yield Study for Muddy Canyon and Los Trancos Canyon" letter to Irvine Community Development Company, dated June 13, 2000.

I. Water Budget

Hamilton, Douglas L., 2000. Response of the Muddy Canyon Watershed (Crystal Cove, CA) Water Budget to Multi-Decadal Shifts in Rainfall Patterns and Development. Report prepared for LSA Associates, Inc. by Exponent. May 26, 2000. 46 p. plus appendix.

Hamilton, Douglas L., 2000. Response of the Los Trancos Canyon Watershed (Crystal Cove, CA) Water Budget to Multi-Decadal Shifts in Rainfall Patterns and Development. Report prepared for LSA Associates, Inc. by Exponent. May 26, 2000. 46 p. plus appendix.

Hamilton, Douglas L., 2000. Projected Water Balance for Muddy Canyon, Crystal Cove Area, California. Report prepared for LSA Associates, Inc. by Exponent. April 20, 2000. 28 p. plus appendix.

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J. Water Quality

Ford, Richard F., Hemmingsen, Barbara B. and Shane, Michael A. 2000. Water Quality and Marine Ecological Monitoring Studies for the Crystal Cove Development Project Analytical Report on Water Quality Data for the Period January 25 – April 3, 2000. Report prepared for submission to the California Regional Water Quality Control Board, Santa Ana Region. June 2, 2000. 63 p. plus appendices.

Ford, Richard F., Hemmingsen, Barbara B. and Shane, Michael A., 2000. Water Quality and Marine Ecological Monitoring Studies for the Crystal Cove Development Project: First Quarterly Report for 2000 Report prepared for Irvine Community

Development Company for submission to the California Regional Water Quality Control Board, Santa Ana Region. May 12, 2000. 68 p. plus appendices.

Ford, Richard F., 2000. Evaluation of Water Quality and Marine Ecological Issues Concerning Fresh Water Runoff into the Irvine Coast Marine Life Refuge Area of Special Biological Significance. Report prepared for Irvine Community Development Company. April 20, 2000. 30 p. plus appendix.

Hunsaker and Associates. 2000. Master Drainage and Water Quality Plan – Crystal Cove. Engineered plans prepared for Irvine Community Development Company. April 20, 2000. 6 sheets.

URS Corporation and GeoSyntech Consultants, 2000. Crystal Cove Water Quality Model / Report. Report prepared for Irvine Community Development Company. June 13, 2000. 39p and appendix.

Ex. 3c p.6

County of Orange
Planning & Development Services Department

THOMAS B. MATHEWS
DIRECTOR

300 N. FLOWER ST.
SANTA ANA, CALIFORNIA

MAILING ADDRESS:
P.O. BOX 4048
SANTA ANA, CA 92702-4048

South Coast Region

JUL 1 8 2000

CALIFORNIA
COASTAL COMMISSION

July 14, 2000

Ms. Teresa Henry
California Coastal Commission
200 Oceangate, 10th Floor
Suite 1000
Long Beach, CA 90802-4302

Subject: Appeal of MCDP – 7th Amendment (Newport Coast Phases IV-3 and IV-4)

Dear Ms. Henry:

It is my understanding that the Coastal Commission will consider the subject appeal during its August hearings. This letter is to inform you that the County of Orange has reviewed the overall revision to the proposed project. Our conclusion is that these revisions will make the Newport Coast development even better. As such, we have taken action to approve related technical revisions to development in adjacent areas.

Please be advised that the County is prepared to find the revised project in conformance with the Newport Coast LCP – Second Amendment at the appropriate time. It is our understanding that we must delay affected subsequent permit approvals until after the Commission's de novo hearing and final action on this appeal.

If you have any questions, please do not hesitate to contact me at (714) 834-4643.

Sincerely,

Thomas B. Mathews, Director
Planning and Development Services Department

c: Roberta Marshall
Andi Culbertson
5th Supervisorial District
John Buzas

Ex. 37
p. 1 of 1

HUNSAKER & ASSOCIATES
IRVINE, INC.

PLANNING
ENGINEERING
SURVEYING
GOVERNMENT RELATIONS

IRVINE
LAS VEGAS
RIVERSIDE
SAN DIEGO

RECEIVED
NOV 10 1999
CALIFORNIA
COASTAL COMMISSION

Memorandum

To:	Irvine Community Development Co. 550 Newport Center Drive Newport Beach, CA	Date:	November 9,1999
		Project:	Newport Coast Water Quality Enhancement Program Low flow Pump Stations
Attn:	Roberta Marshall	W.O. No.:	

As requested we have summarized the characteristics of the dry weather, low flow pump stations being proposed for Muddy Canyon and Los Tancos Canyon. Are comments are as follows:

The pump stations are designed to handle dry weather low flow runoff as quanified by John Tettemer & Associates memo dated October 15, 1999. The pumps will be placed in a 8'X6'X5 deep precast concrete vault place underground.

Dry weather flows will be intercepted by a 4' wide concrete v'gutter constructed to pick up the water and convey it into the pumping facilities. The vault will have 2 cell with the first one allowing some sediment to settle out prior to entering the 2nd cell and into the pumps.

We are proposing 2 sets of 2-7.5 HP pumps placed in series, each unit designed for a submersible environment. These pumps and motors are generally utilized in sewer systems. They are reliable and have a 5 year warranty. Each pump station will be able to handle 60 gpm of runoff and lift it approximately 120' in elevation through a forced main into a sanitary sewer manhole for treatment at the sewage treatment facility.

Each pump station will require a transformer and a vandalproof control panel to provide electricity and to control the pump station. We are proposing ESSCO pumps and control panels and have detailed specifications, pump curves and quote sheet if you so desire.

As you know, we have forwarded copies of the proposed pump station designs to Mr Dave Pryor, Associate State Park Resource Ecologist, California Department of Parks and Recreation.

Please give me a call at 949.458.5473 if you desire additional information.

RICHARD HUNSAKER
TOM R. McGANNON
JOHN A. MICHLER
DOUGLAS G. SNYDER

By: Michael C. McGovern

xc:

REGISTERED PROFESSIONAL ENGINEER
MICHAEL C. McGOVERN
No. 27163
Exp. 3/31/01
CIVIL
STATE OF CALIFORNIA

Ex. 38

Three Hughes
Irvine, California
92618-2021
(949) 583-1010 PH
(949) 583-0759 FX
www.hunsaker.com

EXHIBIT "B"

RESOLUTION NO. OCSD 00-04

ESTABLISHING DRY SEASON URBAN RUNOFF POLICY

A RESOLUTION OF THE BOARD OF DIRECTORS OF ORANGE COUNTY SANITATION DISTRICT ESTABLISHING DRY SEASON URBAN RUNOFF POLICY

****

WHEREAS, certain types of dry season urban runoff create public health and/or environmental problems which are infeasible to economically or practically control; and,

WHEREAS, THE Orange County Sanitation District ("District") has available limited system capacity in its collection, treatment and disposal facilities which may allow the District to accept certain dry season urban runoff discharges without adversely affecting the District's primary function of collection, treatment and disposal of sanitary sewer discharges; and

WHEREAS, the District does not have system capacity available to allow wet season discharges to the District's facilities; and

WHEREAS, District has developed a Dry Season Urban Runoff Policy to address certain environmental concerns associated with dry season runoff; and,

WHEREAS, District may accept dry season urban runoff, on a permanent basis, provided that the discharge occurs in full and complete compliance with the terms of the District's Dry Season Urban Runoff Policy.

NOW THEREFORE, the Board of Directors of the Orange County Sanitation District,

DOES HEREBY RESOLVE, DETERMINE AND ORDER:

Section 1: That the following Dry Season Urban Runoff Policy is established as a District Policy:

POLICY FOR ACCEPTANCE OF DRY SEASON URBAN RUNOFF INTO THE ORANGE COUNTY SANITATION DISTRICT SEWERAGE SYSTEM

The Orange County Sanitation District ("District") may accept surface urban runoff into the sewerage system only during the period of April 15 through October 31 of each year ("dry season urban runoff") and only if the following requirements are met:

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p. 1

A. Requirements for Obtaining Permission to Discharge

1. The dry season urban runoff diversion to the sewerage system shall address a public health or environmental problem associated with the runoff discharge that cannot be otherwise economically or practically controlled;

2. The dry season urban runoff diversion structure shall be designed and other necessary provisions shall be implemented to exclude storm runoff during wet weather. The diversion structure shall be equipped with a lockable shut-off device, satisfactory to the District, and to which the District shall be provided access at all times;

3. The permit applicant shall consider and evaluate the feasibility of other disposal alternatives (i.e., discharging into storm drains, reuse and reclamation of the runoff, etc.) for the discharge of the dry season urban runoff. The permit applicant shall submit to the District a report, satisfactory to the District describing the evaluation of each disposal alternative, and demonstrating why each alternative is not economically or practically feasible to dispose of the proposed dry season urban runoff in lieu of sewer discharge;

4. The permit applicant's proposed diversion system shall prevent debris or any other pollutants of concern from entering the District's sewerage system. The permit applicant shall submit design drawings and an operations and maintenance plan for the proposed dry season diversion structure which shall be sufficient to establish that all District requirements will be met to prevent pass through of and/or interference with the District's sewerage facilities. The diversion system shall be capable of measuring and recording on a daily basis the flow discharged to the sewerage system;

5. The permit applicant shall submit best management practices and pollution prevention strategies designed to minimize or eliminate dry season urban runoff. More stringent practices and strategies may be required depending on the nature of the anticipated discharge;

6. The permit applicant shall submit to the District a proposed method to guarantee the existence of an enforceable mechanism to ensure that the District receives payment for all monies due pursuant to this policy for as long as the permit exists. No permit application shall be complete without such an enforceable mechanism, satisfactory to the District in its sole discretion. This mechanism shall be designed to limit any administrative burden on the District;

7. The General Manager, or his designee, may impose additional requirements as may be appropriate to reduce the burden on the District's collection, treatment and disposal facilities;

8. Collection, treatment and disposal of sanitary sewer discharges remain the

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District's primary function. No additional dry season urban runoff permits shall be issued if the General Manager, or his designee, determines that such issuance may, alone or in conjunction with other permits, adversely affect the District's primary function;

9. Permit applicants shall pay a permit fee in an amount established by the District prior to the issuance of any permit;

10. Prior to commencement of discharge of the dry season urban runoff to the sewerage system, in accordance with the policies and procedures set by the District, the permit applicant must apply for and receive a Wastewater Discharge Permit from the District. The District may require that the permit applicant enter into an agreement setting forth the terms under which the dry season discharge is authorized in addition to or in lieu of issuance of the Wastewater Discharge Permit; and

11. The permit applicant shall indemnify and hold the District harmless from all liability associated with the dry season urban runoff to which the permit and/or agreement apply. The terms of the indemnification shall be in a form satisfactory to District's General Counsel;

B. Requirements After Granting Permission to Discharge

1. The quality and quantity of the discharge shall meet the conditions, provisions or limitations contained in the District's *Wastewater Discharge Regulations* (Ordinance No. OCSD-01)*;

2. The permittee shall conduct self-monitoring for the pollutants of concern as direct by the District to ensure compliance with the terms, conditions and limits set forth in the discharge permit and/or agreement and the District's Ordinances. Unless otherwise directed, the permittee shall conduct self-monitoring of the discharge on a quarterly basis. The result of all self-monitoring shall be submitted to the District, upon request, but in no event later than forty-five (45) days following the completion of sample analysis. The permittee shall monitor the flow and submit reports documenting the flow discharged as directed by the District;

3. In the event that the quality or quantity of the dry season urban runoff discharge to the sewerage system does not meet the conditions, provisions, or limitations set forth in the discharge permit/agreement or Ordinance No. OCSD-01, the permittee shall take immediate action to correct the problem(s) to ensure that full compliance is met. The District may take enforcement action for any violation of the terms of the permit and/or the District's Ordinances, including termination of the discharge, in accordance with the provisions of Ordinance No. OCSD-01;

---

* Any reference in this policy to any District Ordinance, policy or permit shall include any subsequent amendments, modifications, revisions or successors to such ordinance, policy or permit.

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p. 3

4. In accordance with Ordinance Nos. OCSD-01, OCSD-10, and OCSD-11, and any other current or future District Ordinances or policies, the permittee shall pay all the applicable fees and charges including but not limited to permit fees, sewer use charges, capital facilities charges, and noncompliance fees. Failure to pay any fees in a timely manner shall be cause for termination of the permit and discharge;

5. The permittee shall provide District's employees with access to the diversion location and all areas from which and through which runoff originates and/or flows, during all reasonable hours, which shall include any time when a discharge to the sewer system may be occurring, for purposes of inspection, monitoring, and verifying compliance with the discharge permit/agreement or the District's Ordinances;

6. The permittee shall have complete responsibility for the construction, operation and maintenance of the diversion facility or any other associated facilities, for ensuring compliance with the terms and conditions of the discharge permit/agreement and the District's Ordinances, and for paying all the applicable charges and fees for the entire duration of the discharge to the District's sewerage system;

7. All District administrative costs related to the implementation of this policy shall be borne by the permittee;

8. If the District determines that the dry season runoff, alone or in conjunction with other discharges, is adversely affecting or threatening to adversely affect the District's collection, treatment and/or disposal facilities, the District shall so notify the permittee who shall immediately cease all such discharge to the sewerage system. The District may, in its sole discretion, allow the continued discharge provided that the permittee installs, operates and maintains additional facilities as the District determines are appropriate to ensure that the dry season runoff does not, alone or in conjunction with other discharges, adversely affect or threaten to adversely affect the District's collection treatment and/or disposal facilities; and

9. Except as expressly authorized by this policy or a District Ordinance, no urban runoff shall be discharged directly or indirectly into the District's facilities.

PASSED AND ADOPTED at a regular meeting held April 26, 2000.

Jean Dolany
Chair

ATTEST:
Penny M. Fyfe
Board Secretary

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p. 4

California Regional Water Quality Control Board
Santa Ana Region

Winston H. Hickox
Secretary for Environmental Protection

Internet Address: http://www.swrcb.ca.gov/rwqcb8
3737 Main Street, Suite 50 ., Riverside, California 92501-3348
Phone (909) 782-4130 - FAX (909) 781-6288

Gray Davis
Governor

JUL 1 8 2000

July 14, 2000

Ms. Roberta Marshall
Irvine Community Development Company
550 Newport Center Drive, 7th Floor
Newport Beach, CA 92660

REVISION OF THE PROPOSED CRYSTAL COVE/NEWPORT COAST PHASES IV-3 & IV-4 PROJECT; REVIEW OF SEPTEMBER 30, 1999 WAIVER OF WASTE DISCHARGE REQUIREMENTS

Dear Ms. Marshall:

On June 15, 2000, we received a transmittal dated June 8, 2000 for the above-referenced project. Your letter indicates that the proposed Crystal Cove Phase IV-3 & IV-4 project has been revised. You are seeking our agency's confirmation that the waiver of waste discharge requirements issued on September 30, 1999 still covers the revisions to the proposed project.

As further explained, because project impacts to wetlands have been reduced, we will not reconsider the waiver of waste discharge requirements for those impacts. With respect to potential receiving water quality impacts, the project will be covered by the statewide general construction permit for stormwater and the county areawide stormwater permit. If our evaluation of monitoring data or additional information demonstrates the need, we may issue individual waste discharge requirements for the proposed project.

PROJECT DESCRIPTION

The Irvine Community Development Company (ICDC) is proposing to develop 681 acres of a 980-acre parcel that is bounded by Crystal Cove State Park to the southeast; Pacific Coast Highway on the southwest; Los Trancos Canyon, Pelican Hill Golf Course, future residential development and a parking lot for the State Park to the northwest; and the San Joaquin Hills Transportation Corridor to the northeast. The proposed project area includes the entire Muddy Canyon watershed between Signal Peak and Lower Wishbone, all of the drainages associated with Upper Wishbone, several small tributaries along the southeastern slope of Los Trancos Canyon, and the extreme upper end of Moro Canyon.

The proposed project is comprised of Phases IV-3 and IV-4 that have been divided into seven Planning Areas: 4A, 4B, 5, 6, 12C, 12E and 12G. The proposed development will consist of single family residential units (635 dwelling units are proposed), a private recreational facility, associated roadways, open space and trails, and drainage channel modifications.

Ex. 40
p. 1

include installation of water quality drainage swales in the residential area and community areas, creation of riparian enhancement areas immediately below major storm drain inlets, and the inclusion of the water quality conditions and responsibilities in the Crystal Cove Community Association's CC&R's.

Given that the project impacts to wetlands have been reduced from 2.72 acres to 2.59 acres and mitigation for these impacts is unchanged from the original proposed project (and is essentially enhanced), we find that the criteria for waiver of waste discharge requirement for impacts to wetlands and riparian habitats specified in Resolution No. 96-9 continue to be satisfied.

To reiterate, as an absolute minimum, potential water quality impacts will be covered by the statewide general construction stormwater permit and the county areawide stormwater permit. We will continue to evaluate the appropriateness of issuing an individual waste discharge requirements for the proposed project.

Should there be any questions, please contact me at (909)782-3284, or Joanne Schneider or Hope Smythe of my staff at (909)782-3287 or (909) 782-4493, respectively.

Sincerely,

Joanne E. Schneider

for GERARD J. THIBEAULT
Executive Officer

cc:
The Irvine Company – Sat Tamaribuchi
U.S. Environmental Protection Agency, Wetlands and Sediment Management Section – Nancy Woo (WTR-10)
U.S. Army Corps of Engineers, Los Angeles District – Jae Chung
U.S. Fish and Wildlife Service – Will Miller
State Water Resources Control Board, DWQ-Nonpoint Source Certification and Loans Unit – Timothy Stevens
California Department of Fish and Game, Long Beach – Terri Dickerson
California Coastal Commission – Teresa Henry
Orange County Public Facilities and Resources Department – Chris Crompton
Orange County Public Facilities and Resources Department – Herb Nakasone
Orange County CoastKeeper – Garry Brown
Alliance to Rescue Crystal Cove – Laura Davick
LSA Associates, Inc. – Art Homrighausen

FILE:HAS;MEMLETS;CRYSTALCOVE3.DOC

EX. 40
P. 2

Oct. 20, 1999

RECEIVED
JAN 1 8 2000
CALIFORNIA
COASTAL COMMISSION

Honorable Gray Davis
Governor of California
State Capitol
Sacramento, Ca. 95814

Dear Gov. Davis:

As we speak, the pipe line in the picture is being laid to carry run-off water into a State protected waterway located in a State Park. It will drain into a sensitive protected marine habitat in a State designated Marine Preserve.

How is it possible that all the agencies set up to protect the environment have been persuaded to disregard or circumvent environmental law and issue permits to allow this? You might want to conduct an investigation of your governmental agencies and find out who is at fault and why. You might also want to have the State's Attorney step in and stop this rape.

The following may be helpful:

1. The Coastal Commission, the EPA, the Santa Ana Water Quality Board all were asking for more hearings until a state water board attorney named Craig Wilson issued the following "legal" opinion: "The Ocean Plan.... does not apply to Inland discharges of waste, and this project is inland of the ocean". With that, the permits started to come.

Please be aware that this pipeline empties into the protected waterway in the State Park 150 yards from the surf. That's what the attorney is calling "inland".

2. The coastal Commission has issued an EMERGENCY PERMIT to allow the developer to lay pipe over 65 feet of Coastal Commission controlled land.

Please be aware that there is no emergency of weather, or of development. The grading isn't even finished for the project, but they've rallied an army of earth moving equipment to complete this project in stunning record time. The only emergency is the outrage of people in the area and pending strategies to stop the outrage. What caused the coastal commission to allow such a travesty?

This is an Irvine Company development between Newport Beach and Laguna Beach. The pipeline is the latest in a string of environmental outrages.

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p. 1

How are they getting permits the law is set up to disallow? Does it have anything to do with the fact that Pete Wilson is on their board? I'd also like to know what relationship exists between Pete Wilson and Craig Wilson, the attorney who issued the "legal" opinion.

Governor, our precious environment is under attack. A pristine cove where dolphins come to birth is about to be decimated by the corporate arrogance of a developer. Not in some backward third world country, but right here in California. That seems like an emergency to me.

Cordially,

Ellen Brennan

Ellen Brennan
1659 Ocean Front Walk #102
Santa Monica, Ca. 90401
Ph. 310-393-1900

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p 2

OUR TIMES: Dana Point • Laguna Beach • San Clemente • San Juan Capistrano

ORANGE COUNTY | Friday SECTION B

WWW.LATIMES.COM OCT. 8, 1999

Los Angeles Times

Sensitive Zone Can Get Runoff

■ A state water board issues a controversial decision on the 800-home Irvine Co. project above protected Crystal Cove.

By JANET WILSON
TIMES STAFF WRITER

Overruling the recommendation of its regional staff, a state water board has determined it is legal for the Irvine Co. to drain runoff from a new development into creeks that flow across pristine Crystal Cove State Park beaches, reigniting criticism of the controversial project.

The decision comes a week before the California Coastal Commission is scheduled to decide whether the 800-home development needs further regulatory review, a step that could delay construction.

The state Water Resources Control Board backed the Irvine's Co. request despite a recommendation by the Santa Ana Regional Water Quality Control Board that the Pacific Ocean off Crystal Cove is biologically significant and protected under the 1997 California Ocean Plan.

A high-ranking attorney for the state water board determined that the ocean plan was irrelevant because runoff from the new homes would drain into two creeks that spill across the beach, not directly into the sea.

"The Ocean Plan . . . does not apply to inland discharges of waste, and this project is inland of the ocean," said Craig Wilson, assistant chief counsel for the state board. "If they were putting the entire amount of their discharge into a pipe and transporting it directly into the ocean, then one could argue the Ocean Plan would apply. That's not the issue here."

Based on the legal opinion, the regional water board reversed its recommendation and issued the waiver requested by the Irvine Co.

Environmentalists are crying foul over the decision, saying high-powered attorneys for the developer helped the state find a loophole to quash the agency's questions about how the project will affect water quality.

Across Southern California, concerns are growing about urban runoff from lawn fertilizers, pet waste, battery oil and other pollutants into storm drains, which causes major coastal pollution. On the Crystal Cove project, the U.S. Environmental Protection Agency and the Fish and Wildlife Service have raised questions about the effects runoff from homes into the creeks will

RUNOFF: Some Left Angry

Continued from B1

have on species downstream.

Grading for the upscale development is underway on the hillsides above the state park, between Corona del Mar and Laguna Beach.

"We're just incredibly shocked that the state board would, under political pressure, come out and say it's OK to pollute if you empty into a creek first, but it's illegal if you run it into a pipe through the ocean," said Garry Brown, head of Orange County Coastkeeper, an affiliate of a national environmental group that monitors key bodies of water.

Wilson, the state board's assistant chief counsel, said he knows the Ocean Plan law far better than any private attorney, and that his decision was based "not on a loophole."

Irvine Co. spokesman Paul Kranhold declined to comment on the water board waiver but dismissed any allegation of political pressure as "preposterous."

Board officials said they spoke with Irvine Co. representatives but did not feel they were inappropriately pressured. They said it was the first time they could recall making a decision on a development that will affect a specially protected ocean area.

There are 34 sites along the California coastline considered so biologically significant that they deserve extra protection. Crystal Cove is one. The state park includes one of the largest remaining pieces of natural coastal terrain in Southern California. It contains large natural reefs, and dolphins have been observed birthing in cove waters off the beach, according to local marine biologists.

In the past, Irvine Co. officials have said that while there will undoubtedly be some runoff, the project is a sophisticated, environmentally sound one with extensive measures for protecting wildlife and water. For instance, a detention basin midway up Muddy Creek will hold back large volumes of water during rainy season, allowing for slower, safer release into the Pacific.

Irvine Co. officials also say using the creeks for drainage rather than pipes will allow much of the runoff to seep into the earth rather than hit the beach.

Officials of the regional water board, whose recommendation to deny the Irvine Co.'s request was overruled by the state board, said they have no problem with the decision. In an effort to address their concerns about the quality of the ocean water, staffers said they have asked the Irvine Co. to set up a monitoring program.

But they acknowledged that if problems with water quality are found after the homes are constructed and sold, it could be up to local water officials to take care of it, not the developer. That means taxpayers could be left with any cleanup bills.

"That is true," said Joanne Schneider, environmental control manager for the Santa Ana area board.

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CALIFORNIA
COASTAL COMMISSION

'The Ocean Plan . . . do not apply to inland discharges of waste, an this project is inland of tl ocean.'

CRAIG WILSON
State water board attorney

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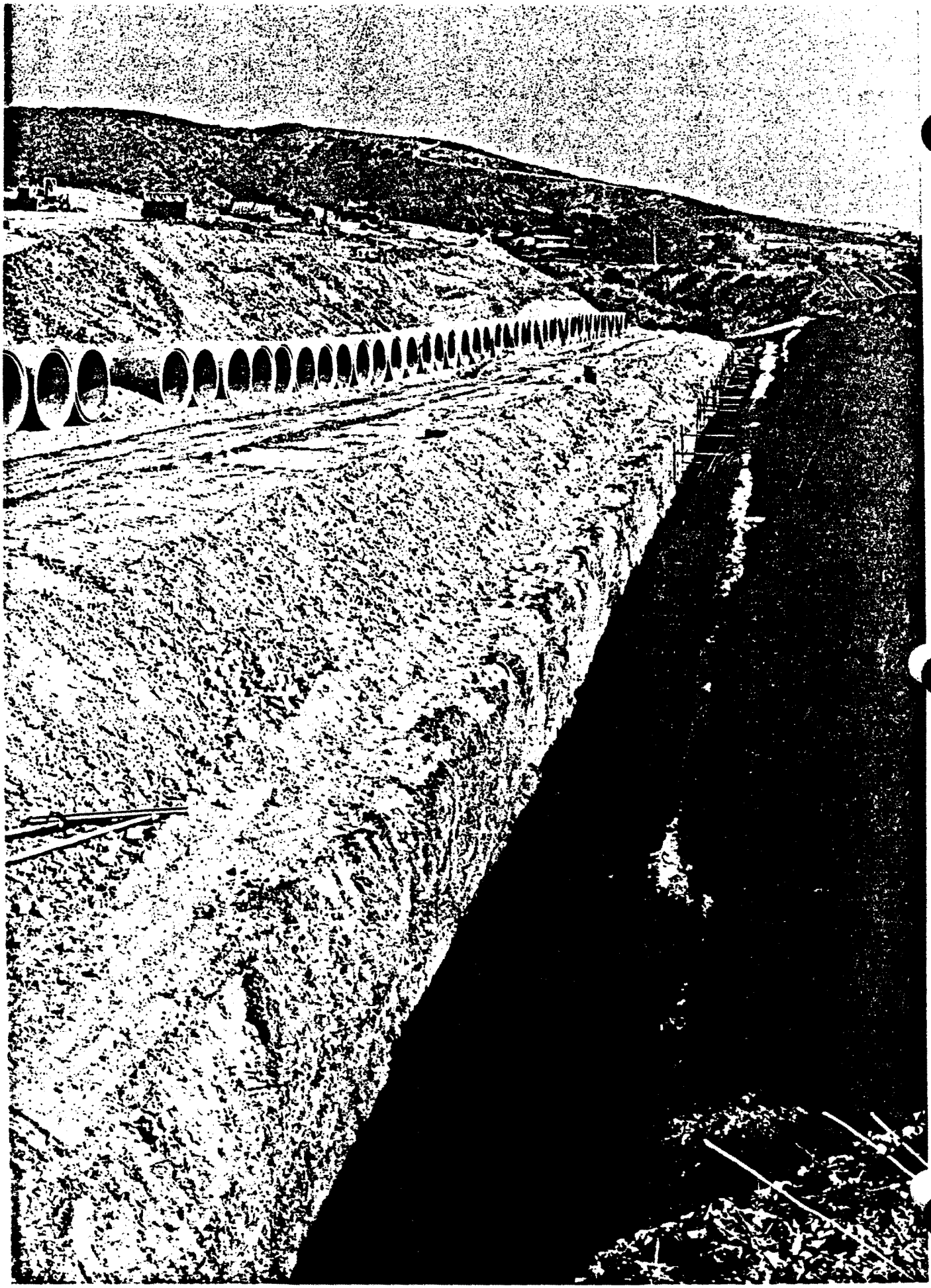

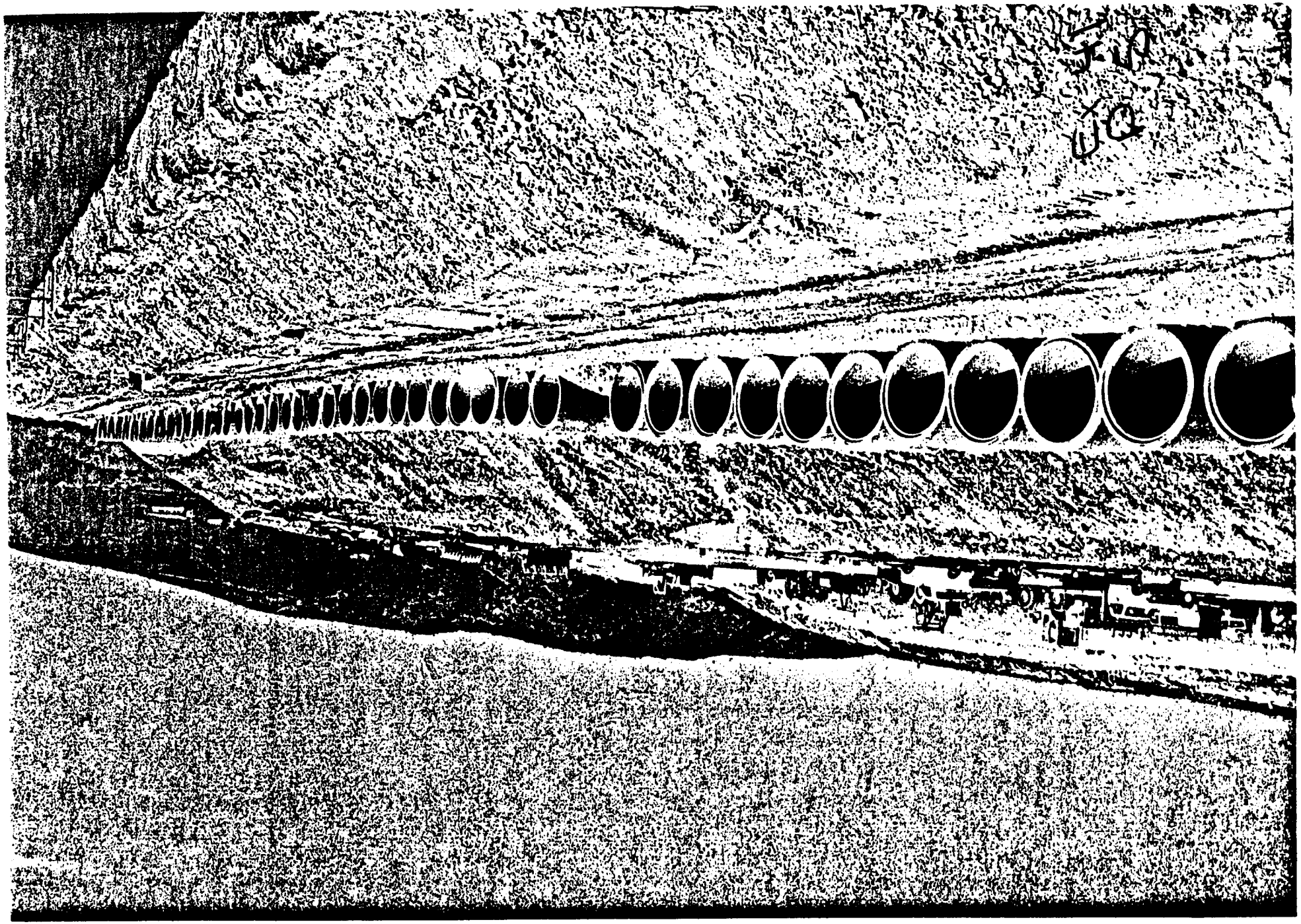

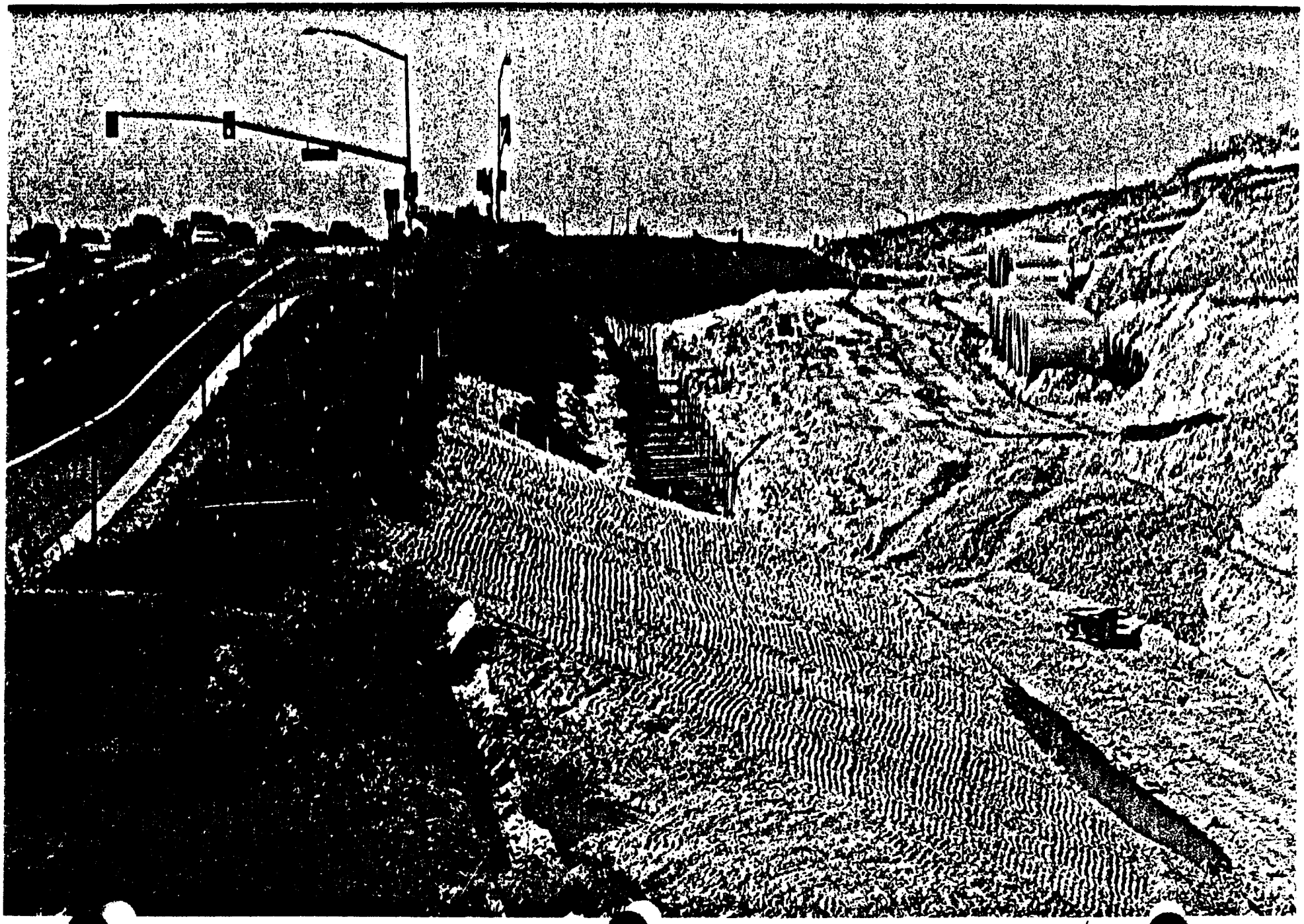

LAWYERS FOR CLEAN WATER

RECEIVED
JUL 21 2000
CALIFORNIA
COASTAL COMMISSION

July 20, 2000

Via Facsimile (Without All Exhibits) and U.S. Mail (With Exhibits)

California Coastal Commission
Teresa Henry,
District Manager,
California Coastal Commission
200 Oceangate
Tenth Floor, Suite 1000
Long Beach, CA 90802

Re: Appeal No. A5-IRC-99-301

Dear Commissioners and Ms. Henry:

The following sets forth preliminary comments on behalf of the Orange County CoastKeeper ("CoastKeeper") regarding conformity of the proposed development (referred to herein as either the "Crystal Cove Development," "Development," or the "appeal area") with the Newport Coast certified Local Coastal Program ("LCP"). CoastKeeper is still in the process of reviewing the documents prepared by consultants of The Irvine Company and/or the Irvine Community Development Company (collectively referred to herein as "TIC"), and reserves the right to supplement this letter prior to the California Coastal Commission ("CCC") hearing on this matter. In addition, CoastKeeper incorporates by reference the documents and videotape it has already submitted to the CCC . CoastKeeper also incorporates the comment letter submitted by the League for Coastal Protection.

I. POSITION OF COASTKEEPER.

CoastKeeper is not necessarily opposed to the Crystal Cove Development. However, CoastKeeper is deeply concerned with the impacts from the Development on the Crystal Cove Area of Biological Significance ("ASBS"), and all tributaries to the ASBS including, but not limited to, Los Trancos and Muddy Creeks.

This letter addresses five areas of primary concern to the CoastKeeper:

1) The prior and current monitoring of water quality impacts performed by TIC's consultants is inadequate;

2) The increased volume of runoff from the Crystal Cove Development will render the Development not in conformity with the LCP's Environmentally

11777 SAN VICENTE SUITE 555, LOS ANGELES, CA 90049
PHONE: 310-820-2322 • FAX: 310-820-1452

Sensitive Habitat Area ("ESHA"), Runoff, Erosion, and Sediment Policies;

3) There will be direct discharges from the appeal area into the ASBS;

4) Significant sediment impacts will occur from construction activities, which have not been considered and are not in conformity with the LCP; and

5) A less environmentally damaging alternative would be to increase the size of the basins, which would mitigate both construction and post-development impacts.

II. FACTUAL BACKGROUND.

A. The Crystal Cove Development.

Beginning in 1988, TIC undertook a massive development (the "Newport Coast Development") of property adjacent to and draining into Crystal Cove. The Newport Coast Development proposes to turn approximately 10,000 acres of untouched land into two golf courses, thousands of very large residences, thousands of Marriott Destination resort accommodations, a private recreation center, and 2.66 million square feet of commercial development in 12 phases. It contains several canyons, including Buck Gully, Los Trancos, Muddy, Moro and Emerald Canyons. The "Crystal Cove Project" constitutes Phases IV-3 and IV-4 (which includes seven Planning Areas: 4A, 4B, 5, 6, 12C, 12E, and 12G) of this massive Newport Coast Development. The Crystal Cove Project would develop approximately 1,000 acres with a proposed 635 single-family residential units, a private recreational facility, associated roadways, and drainage channel modifications.

The Crystal Cove Development includes mass grading, backbone infrastructure for future development and approval of Vesting Tentative Tract Map 15546 in Planning Areas 4A, 4B, 5, 6, 12C, 12E, and 12G. Within the Development, there exists approximately 7.05 acres of Federal jurisdictional waters and wetlands. The Development proposes to fill 2.49 acres of these jurisdictional waters and .23 acres of wetland habitat. The Development proposes 22 million cubic yards of cut, 24.7 million cubic yards of fill, 13.1 million cubic yards of grading for remedial earthwork, and the fill of 36,000 feet (approximately six miles) of Army Corps of Engineers designated intermittent and ephemeral drainage for Muddy and Los Trancos Creeks and their tributaries.

B. Watersheds Affected by the Project.

The Project includes and would adversely alter the *entire* Muddy Canyon watershed between Signal Peak and Lower Wishbone; *all* of the drainages associated with Upper Wishbone; several small tributaries along the southeastern slope of Los Trancos Canyon; and the extreme upper end of Moro Canyon. According to the U.S. Environmental Protection Agency ("EPA"), the Project would "completely eliminate all of the functions provided by [the] 6 miles of streams including functions such as surface water storage, energy dissipation,

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P 2

nutrient cycling, retention of particulates, maintenance of characteristic plan and animal community, ground water recharge and habitat interspersion and connectivity." (*See* September 24, 1999, letter from EPA, attached hereto as Exhibit 1.) EPA also noted:

> [The Crystal Cove] watershed is one of the last relatively unaltered drainages within Southern California. The various hydrogeological, and plant and habitat functions performed by these tributaries are essential to maintaining the integrity of downstream and coastal watersheds region. Loss of these first order tributaries creates downstream impacts including increases in peak flow, increased sediment runoff, decreased nutrient uptake and degradation of habitat.

(*Id.*)

C. **Crystal Cove.**

All of the Project's urban and stormwater runoff would drain into Los Trancos Creek, Muddy Creek, and culverts, *all of which empty into Crystal Cove.* This is in addition to the urban and stormwater runoff from the entire Newport Coast Development, which also is proposed to drain into Crystal Cove.

Crystal Cove has long been recognized as a precious part of California's aquatic resources. In fact, Crystal Cove is such a precious aquatic resource that in 1974, in recognition of its ecological value, the State Board designated the area of the Pacific Ocean within which Crystal Cove lies as an ASBS. "Areas of Special Biological Significance are those areas designated by the State Board as requiring protection of species of biological communities to the extent that alteration of water quality is undesirable." (*In the Matter of the Petition of Marina County Water District*, Order No. WQ 82-2, March 3, 1982.) An ASBS designation prohibits discharges of waste to the ASBS because "...certain biological communities because of their value or fragility deserve very special protection consisting of preservation and maintenance of natural water quality conditions..." Moreover, Crystal Cove is the largest ASBS in the entire State of California.

Crystal Cove is also designated for special ecological protection as part of the Irvine Coast Marine Life Refuge by the California Department of Fish & Game. F&G §1580; F&G §10912. As one of 13 marine life refuges along the coast of California, this designation is further evidence of Crystal Cove's significance as an aquatic resource.

In addition, Crystal Cove is one of only two sites along the Orange County coast that Pacific Coast Bottlenose Dolphins (Tursiops truncatus) frequent when they are preparing to give birth to offspring. (*See* January 2, 1996 and May 27, 1999 letters from Dennis L. Kelly, Professor of Marine Science, Orange Coast College and Director of the Coastal Dolphin Survey Project, to Kenneth Mitchell and Mary Nichols, respectively, true and correct copies of which are attached hereto as Exhibit 2.) In fact, a new dolphin behavior - the "birthing cycle" - has been observed at Crystal Cove, numerous times, *and almost nowhere else on earth.* (*Id.*)

Ex 4
P 3

As acknowledged by the State of California Department of Parks and Recreation: "[the dolphins] use of this "safe" haven [Crystal Cove] to birth their young genuinely qualifies the location as significant to the local population." (*See* February 13, 1996 letter from Jack Roggenbuck, District Superintendent Department of Parks and Recreation, Orange Coast District, to Dennis L. Kelly, Professor of marine Biology, a true and correct copy of which is attached hereto as Exhibit 3.) That this unique birthing cycle has been observed at Crystal Cove provides further evidence of Crystal Cove's significance as an aquatic resource.

III. PRIOR AND CURRENT MONITORING OF WATER QUALITY IMPACTS PERFORMED BY TIC CONSULTANTS IS INADEQUATE.

LCP Policy No. E provides that "[a] water quality monitoring program shall be submitted to the Regional Water Quality Control Board prior to initial implementing approvals for the golf course, for the purpose of monitoring runoff entering the ocean as well as the riparian corridors." The monitoring program that has been performed and is currently being performed is inadequate for several reasons. These reasons are partially set forth in two letters from our consultant, Richard Rollins, of the Watershed Advisory Group, copies of which are attached hereto as Exhibit 4. We refer you to these attached letters and, in the interest of brevity, will not repeat those comments here. However, a few additional comments are noteworthy.

First, each and every monitoring program pertaining to the Development has been performed by a TIC consultant, rather than a neutral or objective consultant. Second, none of these monitoring programs, nor their results, have ever been peer reviewed. Third, each study has been narrowly scoped to focus on certain specific issues. This has resulted in the absence of study of certain other important issues (e.g., impacts from construction activities, discussed below). This has also prevented the reviewer from having a complete picture of the overall impacts from all disciplines, e.g., biology, hydrology, geology, etc., from the entire Development. Accordingly, CoastKeeper believes the CCC should require its own monitoring program, with an objective consultant, as it did with the Treasure Island project.

IV. THE VOLUME OF RUNOFF FROM THE SITE RENDERS THE CRYSTAL COVE DEVELOPMENT NOT IN CONFORMITY WITH THE LCP'S ESHA, EROSION, AND SEDIMENTATION POLICES.

As set forth in the comments from Michael Drennan of Montgomery Watson, a copy of which is attached hereto as Exhibit 5, it is becoming widely recognized that the greater the increase in impervious cover from a development, the greater the amount of impacts to the hydrology, habitat structure, water quality, and biodiversity of aquatic systems. (*See The Importance of* Imperviousness, from Watershed Protection techniques Vol. 1, Mo.3 – Fall 1994, by Tom Schueler, Center for Watershed Protection, p. 1). "The many independent lines of research . . . converge toward a common conclusion – that it is extremely difficult to maintain predevelopment stream quality when watershed development exceeds 10 to 15% impervious cover." (*Id.* at p. 4.)

Ex 4a
P 4

TIC's own consultants report that annual average stormwater runoff volume in this watershed is expected to increase by 60 percent due to increases in paved areas (Exponent 2000), and that the Development will *double* the runoff into Muddy Canyon and increase the duration of the storm water flows due to detention of storm water (LSA Associates, *Analysis of Coastal Drainages and Wetlands - Comparative History and Likely Future Habitat Conditions in Muddy Canyon*, prepared for Irvine Community Development Company, April 20, 2000). This far exceeds the 10-15% threshold for impacts to the streams such as Los Trancos Creek, Muddy Creek, and their tributaries. This doubling of the volume of runoff into Muddy Canyon renders the Crystal Cove Development not in conformity with the following LCP policies.

A. Category "A" and "B" Environmentally Sensitive Habitat Area Policies.

LCP Policy No. D, Category "A" and "B" Environmentally Sensitive Habitat Area Policy, No. 1, mandate that *"the natural drainage courses and natural springs will be preserved in their existing state."* Neither this language nor any other language in Policy No. D limits this mandate to "physical" changes to the natural drainage courses and natural springs. Moreover, the CCC approved the LUP subject to the condition requiring that "environmentally sensitive areas policies to ensure that the . . . rate of run-off in streams and gullies associated with development does not cause excessive siltation and impacts on the off-shore environment." (CCC December 20, 1999, Staff Report, p. 10.)

As set forth above and in the attached comments by Michael Drennan, increasing the runoff in the watershed by 60%, doubling of the volume of runoff in Muddy Canyon, and sustaining the peak flows for a significantly longer period of time than natural peak rates will clearly preclude the Development from preserving the natural drainage courses in their natural state. Indeed, TIC's own consultants admit that Los Trancos and Muddy Creeks will change from ephemeral to perennial streams. (*See e.g.*, LSA Associates, Analysis *of Coastal Drainages and Wetlands - Comparative History and Likely Future Habitat Conditions in Muddy Canyon*, prepared for Irvine Community Development Company, April 20, 2000; Haglund, Thomas R., *Considerations Regarding Riparian Habitat Expansion*, prepared for Irvine Community Development Company by San Marino Environmental Associates, April 2000.) As explained more fully below under the Erosion and Sediment sections, the increase in runoff will also "cause excessive siltation and impacts to the off-shore environment." It is thus clear that the Development does not conform to this LCP policy.

B. Category "C" " Environmentally Sensitive Habitat Area Policies.

The Crystal Cove ASBS is considered a Category "C" ESHA. LCP Policy No. E, Category "C" Environmentally Sensitive Habitat Area Policies provide that the protection of water quality in such marine resource areas is "provided by the LCP Runoff Policies and will be reviewed by the Regional Water Quality Control Board in conjunction with . . . coastal development permits." Here, the Santa Ana Regional Board has refused to review the revised Development. (*See*

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P 5

July 14, 2000, letter from the Regional Board to Roberta Marshall, attached hereto as Exhibit 6.) The CCC should therefore ensure that the LCP Runoff Policies are applied in a manner that is protective of the Crystal Cove ASBS. By doubling the volume of runoff into Muddy Canyon and increasing the duration of such runoff, the water quality of the Crystal Cove ASBS will be severely impaired.

The intent of the LCP regarding erosion policies is clear: "Marine water quality will be protected by . . . means of erosion control techniques to slow runoff so that habitat areas are protected from flows significantly in excess of natural rates of flow." LCP, p. I-2.7. LCP Policy I, Erosion Policies, No. 1 state that post-development erosion rates shall approximate the natural or existing rates before development. Here, not only has TIC failed to propose erosion control techniques to *slow* runoff, but runoff as a result of the Development will double in Muddy Canyon and increase the runoff in the entire watershed by 60%, significantly impairing marine water quality. Clearly, this contravenes the intent of the LCP Erosion Policies.

The Erosion Policies are not limited to policies on post-development, however. Rather, the erosion policies clearly also encompass grading or construction activities. Most notably, Grading Policy No. L-2 states that "Grading allowed between October 15 and April 15 shall be subject to the *Erosion*, Sediment, Runoff, and Grading Policies herein and the provisions of the County of Orange Grading Code." A similar policy statement is found in Policy No. I-4, which states that "For *grading and construction* commencing in the period from October 15 to April 15, erosion control measures will be implemented in conjunction with the project in a manner consistent with the County of Orange Grading Code. Additionally, Policy No. I-3, states that "Erosion control devices shall be installed in coordination with clearing, grubbing, and *grading* of upstream construction; the *Grading Plan* shall describe the location and timing for the installation of such devices . . . . " Thus, the erosion policies clearly cover construction activities, as well post-development impacts.

C. Sediment Policies.

LCP Policy J, Sediment Policies, No. 4 states that "sediment movement in the natural channels shall not be significantly changed in order to maintain stable channel sections . . . ." As set forth above and in the attached comments by Michael Drennan, increasing the runoff in the watershed by 60%, doubling the volume of runoff in Muddy Canyon, and sustaining the peak flows for a significantly longer period of time than natural conditions will "significantly change" sediment movement in the natural channels. This in turn could prevent maintenance of stable channel sections. Moreover, as explained below, and more fully in the attached Richard Rollins comments, high levels of sediment concentrations from the construction site have already impacted the receiving waters, and can be expected to do so from the appeal area.

Ex 42
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D. Runoff Policies.

LCP Policy K, Runoff Policies, No. 1 states that "Peak flood rates of storm water flows in the major streams shall not exceed the peak rates of storm water runoff from the area in its natural or undeveloped state . . .." We refer you to the attached comment from Michael Drennan as to how the Crystal Cove Development is not in conformity with this requirement.

E. Grading Policies.

As mentioned above, LCP Policy L, Grading Policies, No. 2 states that "Grading allowed between October 15 and April 15 shall be subject to the Erosion, Sediment, Runoff, and Grading Policies herein and the provisions of the County of Orange Grading Code." Thus, the LCP's Erosion, Sediment and Runoff Policies specifically apply to construction activities, as well post-development activities. Policy No. L-4-a states that "Runoff from the stockpiled area shall be controlled to prevent erosion." Policy No. L-4-c states that "Except for necessary drainage improvements and/or erosion control modifications, no materials shall be placed within the 100 year flood-plain of coastal waters and/or streams."

CoastKeeper refers the CCC to the discussion below regarding CoastKeeper's deep concern pertaining to impacts from the construction phase of the Development and the CoastKeeper's request for the CCC to take action pursuant to LCP policies, such as these Grading Policies, and the 1992 NPDES General Permit for Stormwater Discharges Associated with Construction Activities, to ensure these impacts are properly mitigated.

V. THERE WILL BE DIRECT DISCHARGES FROM THE APPEAL AREA INTO THE ASBS.

The Development contemplates discharges from the Crystal Cove Development directly into the Crystal Cove ASBS. This is supported by the Executive Summary of the *Newport Coast Planned Community Revised Runoff Management Plan Hydrological Analysis,* prepared by Tettemer and Associates in April of 2000. As that report states, in pertinent part:

A total of 10 culverts (installed during the construction of PCH) exist under PCH. In the post-development scenario, the only PCH culverts which will discharge project storm flows will be the Los Trancos Canyon 9'x10' arch, the 30-inch RCP below Drainage Area A, the 3'x4' RCB below Drainage Area Br, the 24" RCP below Drainage Area C, and the Muddy Canyon 6' x 8' arch. Refer to Figure 2. Of these five culverts, only two, the 3'x4' RCB below Drainage Area Br and the 24" RCP below Drainage Area C, are outside of the CC appeal area and are not proposed for alteration. These two culverts discharge to the ocean without passing through a tributary creek. However, as previously stated, these two culverts are associated with construction areas outside of the scope of the CC appeal.

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P ~

According to this report, three culverts will continue to discharge directly to the Pacific after development in addition to Muddy and Los Trancos Creeks. Pre and post development flows are provided in Figure 2: "Proposed Runoff Management Plan Watershed Map," April 2000. The 100-year peak flow rates are indicated in the Table below with Muddy and Los Trancos Creek flows included for comparison. Based on the post development flows, *the direct discharges represent almost 12 per cent of the total drainage.*

Culvert Description	Existing Flow	Developed Flow
30" RCP below Drainage Area A	92 cfs	91 cfs
3'x4' RCB below Drainage Area Br	279 cfs	215 cfs
24" RCP below Drainage Area C	25 cfs	21 cfs
Los Trancos Arch Culvert	1637 cfs	1563 cfs
Muddy Creek Arch Culvert	960 cfs	952 cfs

It also bears repeating that the Regional Board has refused to examine the revised Crystal Cove Development. (*See* July 14, 2000, letter from the Regional Board to Roberta Marshall, attached hereto as Exhibit 6.) Thus, the Regional Board has failed to independently examine whether the Development will discharge directly into the Crystal Cove ASBS.

VI. SIGNIFICANT SEDIMENTATION IMPACTS WILL OCCUR FROM CONSTRUCTION ACTIVITIES, WHICH HAVE NOT BEEN CONSIDERED AND ARE NOT IN COMFORMITY WITH THE LCP.

Construction is considered the most damaging phase of the development cycle for streams and other aquatic resources. (*See Muddy Water In – Muddy Water Out?, A Critique of Erosion and Sediment Control Plans,* by Whitney Brown and Deborah Caraco, a true and correct copy of which is attached hereto as Exhibit 7.) Notwithstanding this fact, the documents submitted by TIC to the CCC fail to consider impacts from the Development's construction activities. CoastKeeper contends that the Development's construction activities will likely violate the LCP's ESHA, Erosion and Sedimentation Policies. This is based on CoastKeeper's contention that TIC has and is violating the 1992 NPDES General Permit for Stormwater Discharges Associated with Construction Activities ("Construction Permit") relating to Phases IV-1 and IV-2 of the Newport Coast Development. (*See* January 4, 2000, letter from Garry Brown to Irvine and other entities, a true and correct copy of which is attached hereto as Exhibit 8.)

The Construction Permit includes requirements that the discharger maintain pollution control measures meeting Best Available Technology standards, as well as flat prohibitions on discharges which cause or threaten to cause pollution, or which cause or contribute to violations of water quality standards, including the prohibition against discharges of waste to an ASBS

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contained in the Ocean Plan. TIC contends it is using Best Available Technology for Phases IV-2 and IV-3. Even TIC's Best Available Technology must be failing, however; for CoastKeeper has evidence, including photographs and videotapes taken during site inspections, indicating TIC has failed to comply with the requirements of the Construction Permit, and is discharging stormwater containing heavy concentrations of silt and other pollutants, as well as non-storm water discharges containing high concentrations of chlorine and other pollutants, into Crystal Cove. (*Id.*; *see also* videotape of stormwater discharges from the construction site at Phases IV-2 and IV-3, previously submitted to the CCC.) Despite these notifications by CoastKeeper, TIC violations continue.

Existing TIC data also demonstrates that TIC's construction activities at Phases IV-2 and IV-3 are in violation of the LCP's ESHA, Erosion and Sediment Policies. Indeed, one of TIC's reports, which TIC never submitted to the CCC, measures sediment concentrations on March 5, 2000, which was during the construction phase of Phases IV-2 and IV-3, of 35,610 mg/L (35.61 grams/liter). This far exceeds the already liberal 2,000 mg/L background level estimated by another of TIC's own consultants. CoastKeeper refers the CCC to Richard Rollins' attached comments, which provides a more detailed explanation of this data and its associated impacts.

That TIC is constructing Phases IV-2 and IV-3 in chronic violation of the Construction Permit and LCP policies bears directly on TIC's ability to meet these laws upon constructing the Crystal Cove Development. TIC's past and present violations of these law and policies indicate TIC could, and likely would, violate these laws for the construction phases of the Crystal Cove Development.

The LCP contemplates implementing additional control of non-point sources " if necessary to comply with State, regional and County standards." LCP, p. I-2.7. The CCC should therefore take action to ensure that impacts from the construction phases of the Crystal Cove Development will not violate the Construction Permit or the LCP's ESHA, Erosion, and Sediment policies. CoastKeeper has proposed below a mechanism by which to do that.

By taking action to ensure impacts from the construction phase of the Crystal Cove Development will not violate LCP policies, the CCC would not be acting to "modify, adopt conditions, or take any action in conflict with any determination by the State Water Resources Control Board or any California regional water quality control board in matters relating to water quality or the administration of water rights." This is because any such CCC action would also ensure compliance with the Construction Permit (created by the State Water Resources Control Board) rather than conflict with it. The alternative proposed by the CoastKeeper would therefore meet the standard of section 30412 of the California Coastal Act.

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VII. A LESS ENVIRONMENTALLY DAMAGING ALTERNATIVE WOULD BE TO INCREASE THE SIZE OF THE DETENTION BASINS.

One of the conditions by which the CCC approved the LUP included "protection of environmentally sensitive resources by requiring that the least environmentally damaging alternatives are employed in development projects." (*See* December 20, 1999, CCC Staff Report, p. 10.) CoastKeeper is informed and believes that not all of the runoff from the Development is captured in the detention basins, and that the detention basins are designed only to detain the first 3/4 inch of the runoff from a rain event for the area directed to the detention basins, for a total detention capacity of 12-acre feet.

In Michael Drennan's attached comments, CoastKeeper proposes a less environmentally damaging alternative to handle *all* of the runoff from the Crystal Cove Development. This alternative entails increasing the size of the currently proposed detention basins, and either treating the water from the detention basins or turning the detention basins into retention basins. By constructing the detention or retention basins to capture all of the runoff from the construction phase of the Development, the alternative would serve dual purposes: it would mitigate the impacts from both the construction phase of the Crystal Cove Development, as well as the Development at build-out (post-development).

The Noble report confirms that detaining or retaining the runoff would not effect beach replenishment. Moreover, this alternative would not "modify, adopt conditions, or take any action in conflict with any determination by the State Water Resources Control Board or any California regional water quality control board in matters relating to water quality or the administration of water rights." The alternative would therefore meet the standard of section 30412 of the California Coastal Act. This is because, as set forth above, the alternative would also ensure compliance with the Construction Permit, the Municipal Stormwater Permit, and the Ocean Plan, rather than conflict with them. Indeed, the LCP contemplates implementing additional control of non-point sources "if necessary to comply with State, regional and County standards." (LCP, p. I-2.7.) Thus, the CCC should take action to ensure the Development's construction phase and post-development compliance with the Construction Permit and the Municipal Stormwater Permit.

The CCC should also take action to ensure the Development's compliance with the Ocean Plan. As explained above, such CCC action would not conflict with the any action taken by the Regional Board regarding the Ocean Plan, because the Regional Board has refused to reconsider whether their prior waiver (finding the Ocean Plan not applicable to the *old* project) covers the *revised* Development project. (*See* July 14, 2000, letter from the Regional Board to Roberta Marshall, attached hereto as Exhibit 6.) The State Board has taken no action on the Regional Board's refusal to reconsider the revised Development project. Thus, because neither the Regional Board nor the State Board have made a determination regarding the Ocean Plan's applicability to the current Crystal Cove Development, there is no Regional Board determination to conflict with.

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VIII. CONCLUSION.

The Crystal Cove watershed is one of the last remaining relatively pristine watersheds along Southern California. In light of Crystal Cove's designation as an ASBS and a Category C ESHA, and Los Trancos and Muddy Creeks' designations as ESHAs, the CCC should interpret the LCP Policies in the most environmentally protective manner to ensure that the Crystal Cove Development is protective of the water quality of these invaluable aquatic resources. By increasing the size of the basins, CoastKeeper believes the Development would accomplish this goal.

Should you have any questions or comments, please do not hesitate to contact Kim Lewand, Richard Rollins, or Michael Drennan directly. Thank you in advance for your careful consideration of this matter.

Sincerely,

Kim Lewand

Kimberly Lewand

cc: Ann Cheddar, Staff Counsel, California Coastal Commission

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P 11

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, Ca. 94105-3901

SEP 2 4 1999

Ms. Teresa Henry
California Coastal Commission
200 Oceangate, Suite 1,000
Long Beach, CA 90802

RE: Proposed Crystal Cove Community Development Center, Muddy Canyon Creek (Appeal # A-5-IRC-99-301)

Dear Ms. Henry;

The U.S. Environmental Protection Agency (EPA) has reviewed The Irvine Development Company's (TIC) proposal to fill approximately 2.78 acres of jurisdictional waters of the United States (waters) for the purpose of developing a 980-acre site into a recreational facility, 635 single family residences, and other amenities. The proposed project will directly impact 36,000 linear feet of ephemeral and intermittent drainages (approximately 6.0 linear miles of streams). Off-site, indirect and cumulative impacts that would occur to the drainages downstream of the project site have not yet been calculated. We have also reviewed TIC's mitigation proposal (dated September 16, 1999). We ask the Commission to consider the following comments:

Non-Compliance with the federal Clean Water Act

EPA reviews projects for consistency with Section 404(b)(1) of the Clean Water Act. As stated in our earlier comments to the US Corps of Engineers (June 4, 1999 letter, attached), we do not believe that the proposed project has minimal cumulative impacts, nor has it been demonstrated that the proposed project is the least environmentally damaging practicable alternative. Therefore, we are concerned that the proposed project violates the Clean Water Act. We request that a more detailed alternatives analysis be prepared which examines opportunities for reducing and minimizing impacts to aquatic resources.

Significant Degradation

In Southern California, the lower order, headwaters streams are typically narrow, linea aquatic features and are predominantly intermittent or ephemeral. The proposed project will completely eliminate all of the functions provided by 6 miles of streams including functions su as surface water storage, energy dissipation, nutrient cycling, retention of particulates, maintenance of characteristic plant and animal community, ground water recharge and habitat interspersion and connectivity.

Among the functions provided by these ephemeral drainages are their function as important habitat for sensitive reptile and amphibian species such as the spadefoot toad, coast range newt, California legless lizard, and southwestern pond turtle. These tributaries provide

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wildlife and seed dispersal and also provide shallow ground water recharge that may support springs along the coastal bluff.

This watershed is one of the last relatively unaltered drainages within coastal Southern California. The various hydrological, biogeochemical, and plant and habitat functions performed by these tributaries are essential to maintaining the integrity of downstream and coastal watersheds region. Loss of these first order tributaries creates downstream impacts including increases in peak flow, increased sediment runoff, decreased nutrient uptake and degradation of habitat. We continue to be concerned that the downstream impacts from the proposed fill to the ephemeral network have not been adequately considered.

Inadequate Mitigation

We are concerned that the proposed mitigation is inadequate to offset the impacts to aquatic resources. First, there has been no mitigation provided for the downstream and cumulative impacts. EPA believes that the off-site mitigation proposed at the San Joaquin Marsh Mitigation Bank is technically flawed and relies on artificial hydrology that is not naturally sustaining.

Most importantly, there is no mitigation proposed for the loss of over 6.0 linear miles of stream. The replacement waters need to be provided on-site and need to offer in-kind replacement of functions that mimic the ephemeral system that is lost. While detention basins and seasonal wetlands may compensate for some of the on-site water quality functions, they will not replace other functions including habitat support and export of organic carbon for sustainment of the food web. We recommend that TIC restore or enhance other first order tributaries as mitigation. Lastly, all mitigation should provide adequate buffer zones and include a discussion of success criteria, monitoring protocols, and maintenance and management of the site.

We encourage the Commission to ask for a more rigorous analysis as to why it is not practicable to avoid more aquatic resources. In addition, we would like additional assessment of the downstream cumulative impacts of the project and adequate mitigation to offset the project impacts.

If you have any questions about these comments, you may contact me (415/744-1164) or have your staff contact Rebecca Tuden (415/744-1987). Thank you for your consideration.

Sincerely,

Nancy Woo, Chief
Wetlands Regulatory Office

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COPY

January 2, 1996

Mr. Kenneth Mitchell
California State Department of Parts and Recreation
c/o Crystal Cove State Park
8471 Pacific Coast Hwy
Laguna Beach, CA. 92652

Dear Mr. Mitchell,

I am writing you out of my concern for Pacific Coast Bottlenose Dolphin (Tursiops truncatus) that utilize the nearshore waters off Crystal Cove in a very special way. In fact, the way they utilize this specific coastal area is for the most important thing that these dolphins do - namely reproduction. Crystal Cove is one of only two sites along the Orange County coast that dolphins frequent when they are preparing to give birth to offspring. The other spot is far to the south at San Onofre State Park.

Over the past 19 years I have conducted research on the coastal dolphin population of Orange County (see enclosed report). During that time I have made numerous coastal boat surveys of the Orange County coast in search of pods (groups) of dolphin. Although my students and I have observed pods of bottlenose dolphins at almost every location along this busy coast, I have observed that several places along the coast are very special to the dolphins. What I mean by that is dolphins utilize a few specific sites in ways that are unusual compared to the rest of the coast. For instance, north Newport Beach, Huntington State and City Beach, and Bolsa Chica State Beach are sites where the dolphins slow down and begin exhibiting feeding behavior. Another similar site is San Clemente State Beach and San Onofre State Beach.

The most interesting and important behavior of the dolphins, however, is reproduction. During birthing dolphin pods usually stop completely and seven to eight individuals (we suspect they are females) will surround the female giving birth. They will drift slowly along a coast, just offshore, sometimes for several hours awaiting the birth of the calf. Afterward, all of the dolphin present will touch and accompany the calf for short periods of time as the mother recovers from the birth. In nineteen years of studying and observing these dolphins I have observed this unique behavior eight times. Six of those eight times, according to my records, were right off Crystal Cove. The other two times were off south San Onofre State Beach.

It is my belief that Crystal Cove represents a "safe" haven for these dolphins when they are performing this most important of

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behaviors. The dolphins are not molested at Crystal Cove or at San Onofre State Beach due to two different facts, in my opinion. One the human density at these two sites tends to be very low. Secondly, I believe, in the case of Crystal Cove, the long-term residents there are very aware of the dolphins and are careful not to bother them (swim out or paddle out on a surfboard) while this behavior is going on. In addition to that the residents there have been very good about calling me whenever there has been a stranding of dolphins at the beach at that location or when the animals are exhibiting this birthing process.

The reason I am concerned is due to the plans your agency has to move these long-term residents out of Crystal Cove. These residents have acted, over the years, as unofficial "wardens" of this tiny beach area and of the local dolphin population. They report sittings of dolphins and strandings of dead dolphins to me. They report jet skiers harassing dolphins and warn people who visit not to molest the dolphins when they are nearby. In recent years there has been increasing incidents of people (probably tourists but some residents as well) swimming out to try to touch or grab dolphins off north Newport Beach, Huntington Beach, and Bolsa Chica State Beach. This doesn't happen at Crystal Cove since there are so many people watching and ready to report. Informative signs are simply not enough to deter this behavior by irresponsible people. I urge you and your agency to reconsider these plans in lieu of the potential damage that making this area of the coast more accessible to the general public could have on the local marine mammals.

Sincerely,

Dennis Kelly

Dennis L. Kelly, Professor of Marine Biology
Marine Science Department
Orange Coast College
Director - The Coastal Dolphin Survey Project

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P 15

ORANGE COAST COLLEGE

2701 Fairview Rd., P.O. Box 5005, Costa Mesa, CA 92628-5005

Margaret Anderson, President

COPY

May 27, 1999

[redacted]

Mary Nichols
Secretary of Natural Resources
1416 9th St. Room 1311
Sacramento, CA. 98514

Dear Secretary Nichols,

I am writing you in regards to the development plans for Crystal Cove State Park - specifically with regards to the design and plans submitted by Mike Freed's group - Resort Design.

I have had a chance to meet with Mr. Freed and his associates on several occasions and have reviewed and commented upon the plans for the restoration of the cottages at Crystal Cove and the creation of a resort as they developed.

I was most specifically interested in this development due to research that I conduct (the Coastal Dolphin Survey Project) on the coastal population of Pacific Bottlenose Dolphin (Tursiops truncatus) that frequent this area. We have made discoveries that the dolphins actually use this cove for "birthing". In fact we have documented a new dolphin behavior - the "birthing circle" - that has been observed at this location, numerous times, and almost nowhere else on earth.

Imagine my concern when I heard of the plans for the cottage restoration and resort at this most sensitive location along the entire California coast. I immediately contacted and wrote letters to the local representatives of California State Parks informing them of our discoveries and my concerns for the dolphins.

The long and the short of it is this. I am very satisfied with Mr. Freed and Resort Designs plans for the restoration of the cottages and the creation of the resort - with regard to the dolphin population. He and his people have listened carefully when I have spoken with them and have included many of my suggestions into their design. I feel the dolphins will be safe and actually watched over carefully based on these plans.

I urge you to consider this as you contemplate approval of this project.

I only wished to be an advocate of the dolphins. I feel that I have accomplished this task and in writing you I hope that this information is of some use. I am sure this represents a tough decision on your part. I you need any further information with regard to the dolphins please feel free to contact me.

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William M. Vega, Chancellor • Board of Trustees: George E. Brown, Paul G. Berger, Walter G. Howald, Jerry Patterson, Armando R. Ruiz, Shirley M. Raines-Student Trustee

Finally, I have enclosed a copy of a scientific paper I recently wrote documenting the dolphin "birthing circle" behavior for your information I plan to submit this article to two different journals in hope of getting it published.

Sincerely,

Dennis

Dennis L. Kelly, Professor of Marine Science
Orange Coast College

Director of the Coastal Dolphin Survey Project

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P 1r.

STATE OF CALIFORNIA — THE RESOURCES AGENCY
PETE WILSON, Governor
DEPARTMENT OF PARKS AND RECREATION
Orange Coast District
3030 Avenida del Presidente
San Clemente CA 92672
(714) 492-0802

COPY

February 13, 1996

Dennis L. Kelly, Professor of Marine Biology
Marine Science Department
Orange Coast College
2701 Fairview Road
P.O. Box 5005
Costa Mesa CA 92628-5005

Dear Professor Kelly:

Thank you for writing and expressing your concerns regarding Pacific Coast Bottlenose Dolphin that utilize nearshore waters off Crystal Cove State Park. Their use of this "safe" haven to birth their young genuinely qualifies the location as significant to the local population.

The interplay between the Crystal Cove residents and yourself has no doubt been beneficial to the population as well as your work as Director of the Coastal Dolphin Survey Project. The additional data you have been able to collect from birthing episodes and strandings has no doubt helped your project work. We applaud the residents for being vigilant and caring by reporting harassment by jet skis, and warning visitors to keep away from the nearby dolphins.

The Crystal Cove Redevelopment Project is now in the process of selecting a contractor. They will fulfill a section of the approved General Plan in making this area available to all citizens. The people using these cottages in the future will no doubt be less informed than the current residents. However, one of our department's goals is interpreting park resources to our visitors. One of the permenent structures in the redevelopment plan includes an interpretive facility with information on both the Crystal Cove Underwater Park as well as terrestrial habitats. Dolphin concerns can be included into this permanent structure.

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We have lifeguard and/or ranger patrols every day of the year, and feel staff can fill the reporting void once Crystal Cove residents have moved. We have patrol radios that can speak directly with Orange County Harbor Patrol for boating violations. We have a Waverunner for rescue and enforcement work at Crystal Cove State Park, as well as two 30' patrol vessels available from Newport Harbor. The Department will require the operator of the Historic District to have an interpretive program to assist you with specific dolphin activity.

For marine mammal strandings, we follow protocols set up by the National Marine Fisheries Service. We would be glad to assist with this species' sensitivities and the Coastal Dolphin Survey Project, and in informing the public in the absence of our long-term, unofficial "wardens" of Crystal Cove. There are no doubt many ways to work together to help make our development project and your Dolphin Project mutually successful.

Thanks again for voicing your concerns. If you have any questions our local contact is David Pryor, Resource Ecologist at (714) 848-1566.

Sincerely,

Donald H. Pfo

for Jack B. Roggenbuck
District Superintendent

cc: K. Jones
D. Troy
R. Rayburn
D. Pryor
M. Eaton

Ex 42
P 19

May 18, 2000

California Regional Water Quality Control Board
Santa Ana Region
3737 Main Street, Suite 500
Riverside, CA 92501-3339

Dear Board Members:

On behalf of the Orange County CoastKeeper, the following sets forth my comments on Dr. Richard Ford's Water Quality Monitoring Study Plan for Runoff from Crystal Cove/Newport Coast Phases IV-3 & IV-4 Project.

1. **General Comments on the Plan**

   a. Currency. The Monitoring Plan (Plan) provided is dated 12 January 2000 and approved for implementation by a letter from the EO of the Regional Board on 14 January 2000. There has been no mention of the substantial loads of sediment deposited by winter 1999-2000 wet weather flows in Crystal Cove as a result of development of Phase I on the lower elevations of the hills that discharge to Los Trancos and Muddy Creeks. This sediment deposition is being incorporated into the current Plan's data set as a pre-existing baseline condition, which is fundamentally inconsistent with the Plan's assumption that Crystal Cove is in a currently undisturbed or "natural" condition. No effort has been made in the Plan to account for the degradation that has already occurred as a result of this early phase of development.

   In addition, no effort has been made to account for the substantial historical flows of reclaimed effluent from the golf course. Based on the Administrative Civil Liability Complaint No. 00-042 against the Pelican Hill Golf Club, an average of over 2.6 million gallons of reclaimed wastewater treatment plant effluent was discharged indirectly to Crystal Cove by the Club per month. At a discharge rate of almost 32 million gallons per year, the potential exists for over 300 million gallons of treated wastewater to have been discharged to the Crystal Cove ASBS over the full operational life of the golf course.

   The Plan does not mention or account for these two important pre-existing stressors on the ecology of Crystal Cove nor have any modifications been made to the Plan which would adequately address these omissions in considering the addition of further development related stressors to the ecosystem. The Plan should be updated to fully account for these ongoing activities which have and are likely to continue altering the "baseline" against which the Study is supposed to evaluate future post-construction conditions.

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1259 EL CAMINO REAL, SUITE 124 • MENLO PARK, CA • 94025
PHONE 650-853-0464 • FAX 650-853-0465

b. **Control Area.** The use of the Emerald Canyon site as a control area illustrates a fundamentally flawed premise of the study. The Purposes section of the Plan indicates that the data will be used to "assess differences among sites and to evaluate possible ecological effects of storm water runoff." (Page 3, item 9) To accomplish this evaluation, Dr. Ford and The Irvine Company or Irvine Community Development Company (collectively, TIC) are proposing to use an already degraded Emerald Canyon and receiving water (Emerald Bay) as a control for previously undisturbed Crystal Cove tributary watersheds which are in the process of being permanently degraded by large scale suburban development.

In the Ford Proposal (page 3), the ECU sampling station (control) is described as "Emerald Canyon, just upstream of Swanson Park swimming pool area and all Emerald Cove residences." Clearly, the downstream and marine "control" areas will already have been affected by altered water quality due to presence of housing, roads, and recreational facilities. Using an already degraded receiving water as a reference by which the degradation of another water body can be measured is, at best, a questionable experimental design. At worst, it is an attempt to obscure the magnitude of degradation that may be indicated by sampling results.

c. **Dilution is Not the Solution.** In the Introduction to the Plan, Dr. Ford refers to a very limited study that he performed for TIC historically in support of TIC's development of Phase I of the project. The study purports to demonstrate that the development has "had no significant adverse effects on water quality or marine ecological characteristics of the Irvine Coast ASBS."

What is actually meant by the phrase "no significant adverse effects?" That no effects were measured or observed? That effects that were observed but were not recognized or seen as significant? The previous Ford study is voluminous and a detailed critical review is beyond the scope of this effort. However, three principal weaknesses render the previous Ford conclusions to be very limited in scope and application or simply incorrect.

First, the study did not include efforts to quantify concentrations of heavy metals like mercury, toxic organic compounds such as pesticides, or to measure physical effects such as changes in rates of sedimentation. So, not only was the parameter list incomplete, but little or no information on toxic materials or physical effects of pollutants was collected.

Second, the minimal list of parameters that were measured were sampled in the surf zone and in deeper water where massive dilution by sea water made most parameters undetectable by common analytical techniques. Based on these low concentrations, Dr. Ford concludes that there is no adverse effect. Given the high initial dilution of the Pacific Ocean, it would be surprising to conclude otherwise. This is especially true during storm event sampling when mixing in the surf zone will ensure rapid and fairly turbulent mixing of runoff into the ocean water.

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Over time, the cumulative load of nutrient and toxic discharges from the increasingly developed coast will create observable effects. By continually moving the reference point to the conditions of the last study or the last ten years time frame, the gradual, incremental process of degradation becomes imperceptible to the average observer. It does not mean, however, that no pollutants are being discharged or that no impacts have occurred. This is the same process by which the Mississippi River has become an open sewer that creates a several hundred square mile dead zone in the Gulf of Mexico and by which many of the fish in San Francisco Bay have become too toxic to regularly consume.

Third, time and spatial coverage were very limited. Sampling efforts only covered a few stations and either missed or only sparsely covered the Los Trancos Creek watershed which has been significantly impacted by additional flows since the golf course was developed. Sampling was limited to discreet grab or short term composite sampling. Little or no analysis of dry weather flows in the creeks was conducted. Since no continuous sampling was conducted, the sampling program likely missed the periodic discharges of wastewater treatment plant effluent from the golf course storage and irrigation system.

In summary, the Phase I Ford study overlooked most possible impacts and relied upon very dilute sampling to obscure any remaining impacts in order to report that the development "had no significant adverse effects on water quality or marine ecological characteristics of the Irvine Coast ASBS."

d. **Commitment to Study Conclusions.** In the third paragraph of the Introduction to the Plan, the statement is made:

> "Predictive evaluations by Ford (1999) and PBS&J (1999b-c) indicate that these runoff management measures will be very effective, [sic] and that they will result in no significant adverse effects on water quality and ecological characteristics of the freshwater watersheds or the adjacent marine environment. The primary goal of the monitoring studies described here will be to characterize and evaluate these potential effects."

This raises the question of how the potential effects will be characterized and evaluated if the researcher does not expect to find any. Since Dr. Ford has committed his reputation to the prediction "that these runoff management measures ... will result in no significant adverse effects," the question must be asked as to whether Dr. Ford is sufficiently objective to conduct such a study.

e. **Loss of Water Quality and Ecological Reference Point.** As indicated in the Introduction to the Plan, Crystal Cove has been designated as an Area of Special Biological Significance (ASBS) by the State Water Resources Control Board in the 1970's. Crystal Cove was designated as an ASBS because it represented a remarkably "un-degraded" site able to support remarkable populations of marine organisms. As such, the ASBS at Crystal Cove served as a relatively unaltered reference point by which all other similar stretches of Orange County Coastline could be compared when studies of human impacts were conducted. The fact that Crystal Cove has become the study area itself and an already developed (and therefore, somewhat degraded) site has become the reference point indicates the

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magnitude of the loss of Crystal Cove as the only relatively undisturbed stretch of coast in this part of the County. As indicated above, the present Plan does not contemplate documenting conditions before the development above Crystal Cove began. The Plan should be modified to document, to the extent possible, all pre-existing conditions at Crystal Cove so all degradation can be identified and practices modified to minimize permanent damage.

2. Specific Comments

a. The Plan anticipates elimination of chemical constituents from the analytical parameter list when non-detect results are repeatedly returned from the analytical lab (page 2, ¶1). What about future introduction of these constituents by the human activities during and after development? Who determines which chemicals should be dropped? All current parameters should be kept and the list should be expanded.

b. The before and after control impact method evaluates pre- and post- construction impacts (page 3, ¶5, above "Project Management"). What happened to impacts during construction? When are impacts reported? What is the contingency plan when an impact is detected (e.g. erosion and sediment transport during small storm events this last winter)? How are the original characteristics restored once an impact has occurred?

c. Substantial portions of the water quality and toxicity elements of the Plan (pages 4-7 and 12-13) are devoted to documenting dilution in surf zone. Most people already know that dilution occurs and that the dilution factor is large. More of the resources committed to this Study should be spent documenting sources of pollutants and effectiveness of removal before discharging.

d. There is a typographical error on page 9 in detection limit units. The correct unit should read "at least 50 ηg/L (parts per trillion)" not 50 mg/L.

e. Parameter list (page 8) should be expanded to include COD, Total petroleum hydrocarbons, and other indicators of pollutants from anthroprogenic sources like MBAS or other priority pollutants. Arsenic, mercury, and selenium should be added to the metals analysis.

f. Pesticides (page 9) should be sampled using suspended sediment techniques recently developed by USGS. Hydrophobic contaminants like pesticides end up on particles and often generate non-detection results (NDs) unless properly collected and extracted.

g. Field evaluation of BMP section (page 8) is an ex post facto evaluation. What happens if removal is not sufficient to meet requirements? What are performance requirements? How were they set? What happens if the BMPs do not intercept the majority of contaminated water leaving the site?

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h. There is no evaluation of increased offshore TSS deposition rates from erosion and runoff nor any evaluation of what effect such increased sedimentation has on the benthic ecosystem.

i. Acute and chronic toxicity studies should be performed directly on filter backwash and other recycled wastewater discharged from the golf course.

j. Although the description of sampling is fairly detailed, there is almost no description of "evaluation of impacts methodology." What constitutes a "significant" impact, and how will such decisions be made?

k. Although mention of "standard quality control procedures" is made several times, no description or reference to a quality control plan for this study is made in the Plan. For a study of this magnitude and importance, the Regional Board should be requiring a detailed and comprehensive quality assurance plan.

l. The Plan states that Dr. Ford will submit quarterly and annual reports of evaluated and summarized data (page 3, ¶6). In order to ensure timely access to the data by the interested public as well as the Board, raw data, should be made available within 7 days of receipt from the analytical laboratory by either posting to an internet web page or mailing disks to interested parties.

3. Conclusion

By primarily focusing on the surf zone and attempting to conduct a dilution study with fairly low concentration constituents, the Plan has been constructed to have a high probability of detecting "no significant adverse effects." This conclusion is precisely what has already been predicted in the Introduction. A more constructive approach would be to quantify the sources of pollutants before, during, and after construction and install the necessary systems to prevent either direct or indirect discharge of pollutants to the ASBS. By contrast, the present Plan is an elaborate diversion that will, at best, only serve to document the potential destruction of a rare biological resource after the fact.

Sincerely,

Richard Rollins

Richard Rollins, Watershed Advisory Group

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Watershed Advisory Group

TO: Carrie Bluth and Jack Gregg, California Coastal Commission
FROM: Rick Rollins, Watershed Advisory Group *RR*
DATE: 20 July 2000
SUBJECT: Responses to Questions Raised in 19 July Telephone Conference

This responds to two of the five areas for which Coastal Commission staff requested clarification in yesterday's telephone conference. Specifically, what are the main issues concerning validity of the Ford Studies and what are Orange County Coast Keeper's concerns related to the deposition of large amounts of sediment into the ASBS. Another related concern about direct discharges into the ASBS was addressed in a Watershed Advisory Group Memorandum faxed to the Coastal Commission yesterday.

The following outlines proposed draft comments on the First Quarterly Report for 2000 of the Water Quality and Marine Ecological Monitoring Studies for the Crystal Cove Development Project. (1Q2000 Report or Report) which has been conducted for the Irvine Company (TIC) under the direction of Richard F. Ford. For the sake of brevity, this set of comments will refer to sections of the comments on the proposed monitoring plan submitted to the SARWQCB (Regional Board) on or about 18 May 2000. This present set of comments is somewhat limited in scope by the fact that the separate analytical report has not yet been fully reviewed in conjunction with the 1Q2000 Report. Once the Analytical Report has been more completely reviewed, an additional comment letter will be submitted to the Coastal Commission and the Regional Board.

1. General Comments on the Monitoring Results Report

   a) All of the General Comments Section of the Watershed Advisory Group Letter submitted to the Regional Board are hereby incorporated by reference. Additional comments on the indicated topics follow.

      i) Current Conditions – The 1Q2000 Report makes no mention of the fact that a substantial part of the Muddy Canyon and Los Trancos watersheds have been recently graded for new housing by TIC contractors resulting in substantially increased erosion and flow carrying a high concentration of Total Suspended Solids (over 35,000 mg/L, Cotton, Shires Report, 12 April 2000). Further, no sampling or analysis has been conducted of recycled wastewater treatment plant effluent discharged from golf courses directly or indirectly into the ASBS. The 1Q2000 Report has made no attempt to account for those impacts in order to evaluate what conditions would be in a non-degraded Crystal Cove. Instead, by not mentioning these development related sources of large amounts of pollutants, the Report attempts to incorporate the already degraded conditions of the creeks and the ASBS into the baseline data set as undisturbed background.

      ii) As indicated earlier, the watershed chosen as a control, Emerald Canyon and Emerald Bay, is already contaminated. Water chemistry results indicate toxic levels of pesticides and heavy metals in several samples.

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The minimal toxicity testing that has been conducted indicates chronic and acute toxicity in the whole effluent sample. Even a deep water marine sample is contaminated in Emerald Bay (Table 27, Sample EC2, 11:30 am, 6 March 2000, exceedances in dissolved lead and total and dissolved copper).

The 1Q2000 Report discounts these results as a "special case" where "This first flush of runoff from these developed areas...apparently produced the levels [above the CTR water quality acute criterion for freshwater]of dissolved copper observed." (page 17 of 1Q2000 Report [bracketed information added]). In fact, none of the events in this rain year exceeded even a 2 year 24 hour storm for this area which is approximately 2.0 inches (Figure 38, NOAA Atlas 2, Volume XI). Since the largest event measured this year was 1.27 inches on 5 March 2000, this type of relatively small rain event can be expected on a frequent, perhaps annual, basis. These chemistry results combined with toxicity test results from Emerald Canyon actually indicate that runoff from developed areas is potentially toxic and the same toxicity should be expected from the developments underway at Crystal Cove.

iii) Reliance on Dilution – Even though significant quantities of toxic pollutants are being discharged from developed areas and toxicity studies confirm toxic levels of metals and pesticides in those discharges, dilution and turbulent mixing in the surf zone is relied upon to state that "These nearshore processes help to prevent adverse effects of runoff on the adjacent marine environment." (page 27 of 1Q2000 Report) In addition to designation as an "Area of Special Biological Significance," the offshore area of Crystal Cove is also an "Underwater State Park" and a "Marine Life Refuge" as designated by the California Department of Fish and Game. Reliance upon dilution to mitigate discharge of tons of pollutants per year into this sensitive receiving water will not, in the long run, preserve the high water and sediment quality required to maintain the many recreational and ecological beneficial uses indicated by these designations.

iv) Foreshadowing of study conclusions – Despite significant number of water quality excursions beyond acceptable limits for periods up to 24 hours (Table 27, 4 Samples EC, 4:30 am, 12 February to 7:00 am, 13 February 2000, exceedances in total and dissolved copper), and at least 9 animal studies showing statistically significant toxicity in the discharge the Report concludes: "Based on the evaluations completed thus far, the results of these toxicity tests provide further confirmation that freshwater and nearshore marine habitats associated with Muddy Canyon and Los Trancos Canyon watersheds were affected little, if at all, by the chemical constituents of storm and dry-weather runoff during the period January—March, 2000." (page 29 of 1Q2000 Report)

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b) Fundamental Design Flaws of the Study

i) Neglects Chronic Water Quality Objectives for Toxic Pollutants – The 1Q2000 Report focuses only on acute limitation exceedances and makes no effort to evaluate the analytical results of storm flows for exceedance of chronic limitations (CCC). Situations where discharges exceed the CMC (acute limitations) for toxic pollutants are analogous to mixing zones. The US EPA specifies that where a mixing zone exists, "the areal extent and concentration isopleths of the mixing zone must be such that the 1 hour average exposure of organisms passing through the mixing zone is less than the CMC." (*Technical Support Document for Water Quality-based Toxics Control*, EPA/505/2-90-00, March 1991, "TSD", page 71). Since there are many instances where exceedances of freshwater CMCs persist for several hours or even 24 hours from the first occurrence, the chronic limitations becomes the relevant limit and the Report should also identify exceedances of CCCs so that duration of those exceedances can also be evaluated. By the same reasoning, for marine conditions exceedances of the 6 month median and the marine CCC limitations should be identified so duration of exceedance can be determined.

ii) Full List of Toxics in the CTR and the Ocean Plan Not Tested– One objective of the study is to "establish baseline or pre-development conditions of water quality, against which future measurements can be compared." This objective cannot be met if data is not present in the baseline database for all toxics listed in the CTR and the Ocean Plan. Even if a compound is not expected to be present in discharges from less developed areas, it may be present once development occurs. Therefore, the full list of toxics from the CTR and Ocean Plan should be sampled and analyzed at least once per year so initial appearances can be identified.

iii) Inappropriate Analytical Methods Used – In "Diazanon Sources in Runoff From the San Francisco Bay Region" (Watershed Protection Techniques, Vol. 3, No. 1, April 1999, pages 614) toxicity levels for Diazanon are presented in Table 106.1. Lethal concentrations range as low as 150 ng/L. The analytical method used by the Ford Monitoring Team has a reporting limit (RL) of 500 ng/L and a detection limit of 160 ng/L. Therefore, a non-detection indication in the results does not warrant that the sample is not lethal. The 1Q2000 Report states "It is extremely significant that these 26 organophosphorus pesticide compounds were not present above laboratory reporting limits for any of the samples taken in or offshore of Los Trancos and Muddy Canyons during runoff from the four storms sampled. This is strong evidence that these compounds did not represent a problem in runoff from Los Trancos Canyon or Muddy Canyon during the storm season of 2000." (page 18) The fact that the RL for Diazanon is over 3 times the lethal

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limit contradicts this conclusion in the 1Q2000 Report.

iv) Toxicity Studies Are Not Valid Because of Lack of Species – "When toxicity tests are required in order to make decisions regarding appropriate next steps in a screening protocol, EPA **recommends as a minimum that three species (for example, a vertebrate, an invertebrate, and a plant) be tested for a minimum of a year.**" (TSD, page 59, [emphasis in original]) Since the present studies are being conducted with only one organism in fresh and one organism in salt water, additional species should have been used and should be used in future testing. This is especially true since toxicity has already been documented in the minimal testing that was recently conducted.

v) Discounts Relevance of Total Concentrations – The 1Q2000 Report makes a dubious distinction between Total and Dissolved Concentrations of toxic Pollutants that "most of the toxicity to aquatic organisms is produced by the dissolved form of the trace metals, rather than the total recoverable form." This is a questionable distinction for at least two reasons. First, the total recoverable analysis accounts for both particle bound and dissolved compounds of a given toxic material, so the dissolved concentration is contained in the total concentration result. In fact, the EPA process by which the applicable limits are determined includes a translator factor for the dissolved limit conversion to the total limit. Second, particle bound toxic compounds can be easily released into solution under slightly different ambient water conditions such as within sediment. When these compounds are ingested by benthic organisms or re-suspended in the water column by wave action, the previously bound toxics can become part of the dissolved fraction. In consideration of the fact that 156 of the 805 heavy metals results (total recoverable form), or over 19 per cent of the samples analyzed, were exceedances (Ford Analytical Report 2 June 2000, page 28), the assumption that the total recoverable form of toxic pollutants has little toxic potential is not protective of the Marine Wildlife Refuge. This is confirmed by the fact that at least 9 instances of discharge toxicity have already been documented by toxicity testing.

vi) Chronic Toxicity Test – The 1Q2000 Report suggests that chronic toxicity is not appropriate because of the short duration of exposures to storm water runoff. This is not valid because the intent of using a more sensitive test than acute toxicity is to detect potential toxicity of the discharge. Chronic testing can indicate the presence of a toxic chemical at sub-acute concentrations that may prove toxic under different runoff conditions. Or, chronic testing may indicate the presence of a toxic combination of chemicals which may, by themselves, be non-toxic at present concentrations. Chronic toxicity testing can also indicate the presence of a toxic chemical that has not otherwise been detected because it was not being analyzed for.

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As already indicated, none of the events in this rain year even exceeded a 2 year 24 hour return period. When storm events of greater magnitude occur, the concentrations of toxic compounds or the total mass discharged to the creeks and the ASBS may increase. If toxic conditions already exist under the relatively mild runoff conditions already experienced, then chronic toxicity test provides a warning that intervention to prevent actual toxicity in the ASBS may be warranted.

Finally, chronic toxicity was included in the approved monitoring plan for the above or other reasons. If the 1Q2000 Report authors object to the requirement to conduct chronic toxicity testing, why weren't those objections raised in the monitoring plan? By waiting until after unfavorable results are returned to object to the test, the authors give the impression that the procedure should be scrapped because of reasons apart from the merits of the test which were known well before the monitoring plan was drafted.

2. Sediment

a) One of the most glaring omissions in the 1Q2000 Report is the complete absence of any mention of a several hundred acre construction site located in the Muddy Canyon and Los Trancos Watersheds. The presence of this large bare soil area on a steep slope contributes large quantities of fine sediment (also termed fines or wash load in various Irvine Reports) which consist of silt and clay. In the Ford Reports, concentrations of 7600 mg/L to 18,000 mg/L Total Suspended Solids (TSS) were measured downstream of construction in the Los Trancos and Muddy Canyon Watersheds. In the Cotton, Shires Report (12 April 2000), not initially provided to the Coastal Commission, levels of 4500 mg/L to 35,600 mg/L were measured in the Muddy Creek on 5 and 8 March 2000 (an approximately 0.5 inch event not sampled by the Ford team). Mangarella and Strecker (Crystal Cove Stormwater Quality Evaluation Report, 14 June 2000, page 36) suggest that background concentrations in Muddy Creek are "approximately 2000 mg/l" TSS which indicates that up to 33,000 mg/l TSS load is attributable to the current construction practices of Irvine. If the multiple instances of heavy metals exceedances are related to high suspended solids concentrations, as the 1Q2000 Report suggests, then these construction related mass loadings of suspended sediment would be a good place to start efforts to control the pollutants entering the creeks and the ASBS.

b) Effects of High Suspended Solids Loading – The Chang Sediment Yield Study (May 2000, page 16) states that "the development sites have several floodwater detention basins. Such basins are designed to reduce the flood discharge but they are not designed to detain sediment. Fine sediments are responsible for the muddy appearance of storm water; they do not settle in large quantities in such small floodwater detention basins." Therefore, the high load of fine suspended sediments in Muddy and Los Trancos Creeks is not ameliorated by the proposed detention ponds and will have the effect of depositing silt and clay in the creek

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beds and in the ASBS. Using the only storm water flow measurements made during the entire course of all the studies performed, the Cotton, Shires Report estimates that up to 5.60 tons/hour of silt and clay is delivered from Muddy Creek alone to the ASBS. That rate is achieved during a less than 2 year 24 hour storm. During larger storms the fine sediment transport rate could be expected to be higher.

c) Almost all of the consultant reports produced for Irvine analyze pre-development conditions and post-development conditions. Construction has been ongoing in the Los Trancos Watershed for at least a decade and will continue in this project for another decade, more or less. Yet, no Irvine report addressed the long, middle or short term consequences of this continuous disturbance of steep slopes that is a necessary part of the Irvine building program. The net result is that tons of silt and clay sized sediments are being and will be delivered through Muddy and Los Trancos Creeks to the ASBS from the Irvine construction activities for the foreseeable future without benefit of analysis by any of Irvine's consultants.

d) Page 25 of the Noble Report (Third Party Independent Review, 29 June 2000) states that "offshore samples [of sediment] are finer than those on the beach, so apparently they have been sorted from the beach material by wave and current action." This indicates that the fine sediment may be deposited on or near the beach with the rest of the coarser sediments (beach sand, gravel, etc.) but wave action carries the fines out to deeper water where they settle to the bottom. This accelerated rate of fine sediment deposition has the effect of covering rocks and reefs that have historically been the holdfast points for kelp. Anecdotal reports from local divers indicate that few, if any, of the rocks where kelp was historically present in Crystal Cove are still visible through the sediment. The result is that kelp spores cannot attach to a solid surface and kelp cannot naturally reestablish at this disturbed location. Since the construction that gives rise to the high sediment loads is expected to continue far into the future, the likelihood of reestablishing a thriving kelp population appears remote. Given the fact that containment and removal of the suspended sediment from construction sites is feasible using large detention ponds or other treatment alternatives, the continued degradation of the Marine Wildlife Refuge is not appropriate.

3. Measures to Assure Permit Compliance Through Monitoring – As indicated in this Memorandum, the current state of "monitoring" is not adequate to protect the creeks or the ASBS from continuing degradation. There are ways to use monitoring as a means of assuring compliance with permit conditions. The methods currently used by industrial companies to manage their compliance efforts with good success generally rely on peer review, auditing, and enforceable corrective action programs. As applied to the Crystal Cove project, such an approach would include the following elements.

a) Use a technically qualified review panel to approve monitoring plans, results, and interpretations. All actions of the review panel would be subject to public review and comment.

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b) Goals of the permit requirements would be performance based (i.e., the discharge quality would have specific, well-defined limits, preferably numeric), and the monitoring program would be designed to measure the performance as directly as possible.

c) When performance goals are not met, specific actions are taken (i.e. construction work stops) until corrective actions are fully implemented. A performance bond can be posted to insure compliance with this element.

d) If performance requirements are not met, the discharger must present acceptable corrective actions to the review panel within a short, set period (i.e. 30 days).

e) Annual or more frequent audits of the monitoring methods and results should be conducted to assure that the monitoring program is properly carried out.

4. Conclusion – Actual or potential damage is already occurring in Los Trancos and Muddy Creeks and Marine Wildlife Refuge. The toxicity observed at the Emerald Canyon sampling station indicates what the discharge will look like once Crystal Cove is developed. The high TSS levels measured in Muddy Creek indicate what runoff conditions exist under Irvine's current construction practices. The combination of toxicity and high suspended sediment observed in Los Trancos indicates the flow conditions that can be expected as the Irvine development of Crystal Cove proceeds over the next several years with a mixture of construction and completed development.

Some mention of source controls has been made for pesticides. The Watershed Protection Techniques article faxed to the Coastal Commission yesterday states "It should be noted that residential source areas monitoring indicated that **'proper use' still produced very high Diazanon levels, even when label directions were scrupulously followed.**" Therefore, reliance on source control is not a fully realistic approach unless an appropriate contingency measures are simultaneously implemented. Unless specific performance requirements with appropriate contingency measures are incorporated into Irvine's permits, the Marine Wildlife Preserve ASBS is likely to be temporarily and perhaps permanently degraded.

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Technical Note 106

Diazinon Sources in Runoff From the San Francisco Bay Region

Diazinon is a common broad spectrum insecticide that is widely applied by homeowners and pest control professionals alike. In California alone, diazinon is contained in over 200 different pesticide formulations. The primary use for diazinon is for general insect control, with the most common targets being ants, fleas, ticks, grubs and spiders. It is often the insecticide of choice to deal with fire ant problems in the South.

There are several reasons why watershed managers are concerned about the use of diazinon. To begin with, diazinon is highly toxic to aquatic life at exceptionally low levels. Toxicologists have found that diazinon causes mortality in the popular bioassay organism, *Ceriodaphnia dubia* (water flea) at exposure levels as low as 300 parts per trillion. In addition, diazinon is very soluble and therefore very mobile in the urban environment. Although it eventually breaks down in the environment, diazinon has a half-life of about 40 days in surface waters. In addition, diazinon is typically sprayed as a concentrate on a spot basis near foundations, driveway cracks, sidewalk crevices and other impervious surfaces.

Given these factors, it is not surprising that researchers are frequently finding diazinon in stormwater and dry weather flows in urban streams, particularly in the South (Schueler, 1995). Diazinon has been detected in urban streams in Sacramento, CA (O'Connor, 1995) Atlanta, GA (Hippe et al., 1994) and Dallas-Fort Worth, TX (Brush et al., 1996). In each case, diazinon was detected in nearly 90 percent of all stream samples. In the Texas study, the mean runoff concentration of diazinon at 11 residential catchments was a whopping 1800 ng/l (parts per trillion).

Until recently, our understanding of the sources and pathways of diazinon in urban watersheds has been very sparse. A much clearer picture, however, has recently emerged from a comprehensive research effort in the San Francisco Bay region. The study team included James Scanlin, Tom Mumley, Revita Katznelson, Val O'Connor and many other colleagues. The study team has progressively traced diazinon sources to increasingly smaller watershed units. The team investigated diazinon at the regional scale, and then proceeded to urban watersheds, and even smaller subwatersheds. From there, they continued to trace diazinon through individual storm drain outfalls, to street gutters and finally, to individual homes. In addition, the team profiled how diazinon is actually used in residential areas, through surveys and retail sales statistics. Taken together, the story of their search is both interesting and very disturbing.

> Diazinon is highly toxic to aquatic life at exceptionally low levels.

The story begins with how diazinon is actually used. Scanlin and Cooper (1997) started by checking statistics on retail sales of diazinon, which are required under California's extensive pesticide reporting system. For the California and the Bay region, Scanlin and Cooper estimated that 0.04 lbs. of active diazinon was applied outdoors per person each year in the San Francisco Bay area. As such, it was the leading insecticide used in California, in terms of retail sales of active ingredient. The primary reason cited for applying diazinon was general insect control (about 80 percent), with some additional use to control garden pests (20 percent). About half of the diazinon was applied to structures, and half applied to lawns and landscaped areas. Diazinon users were roughly split between homeowners and pest control companies. Users applied diazinon as a liquid concentrate about 65 percent of the time, and as granules about 34 percent of the time.

Concern about diazinon in the Bay area was initially prompted by a series of toxicity tests conducted by Steve Hansen and others the early 1990's. Of 130 runoff samples from Bay area creeks, 22 percent caused mortality in *Ceriodaphnia dubia* within 48 hours, and further testing revealed that diazinon was the primary cause (Katznelson and Mumley, 1997). Consequently, a synoptic study was undertaken in 1995 to monitor diazinon, and 167 urban creek samples were collected around the Bay. Potentially toxic levels of diazinon were found in 27 percent of the storm samples (Table 106.1). The study concluded that diazinon was a widespread problem in many urban creeks, and also suspected that chlorpyrifos, another insecticide frequently found in creek runoff, might also be a problem.

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Table 106.1: Occurrence of Diazinon in San Francisco Creeks Spring 1995 Coordinated Survey (N=167) *(Source: Katznelson and Mumley, 1997)*

Diazinon Levels	Toxicity to *Ceriodaphnia*	Percent of storm samples
< 30 ng/l [1]	Not detectable	43
30 to 150 ng/l	Non-lethal	29
150 to 300 ng/l	Lethal 4 to 7 days	16
300 to 500 ng/l	Lethal within 96 hours	11

[1] ng/l = nanograms per liter (or parts per trillion)

The next chapter of the story involved extensive diazinon sampling across the San Francisco Bay region. New sampling methods made it easier to detect diazinon at both lower levels and lower cost. The study team compiled hundreds of samples, and detected diazinon in rainwater, urban runoff, dry weather flow, creek sediments, wastewater effluent, and even the waters of San Francisco Bay (Table 106.2). The highest levels were found in stormwater and dry weather flows in urban creeks. Rainfall was initially suspected as a major source of diazinon, since previous research had found rainwater concentrations as high as 4,000 ng/l. These very high levels, however, were collected in the highly agricultural Central Valley of California, and were apparently influenced by the drift of diazinon from orchard spaying. In the San Francisco Bay region, diazinon was detected in less than one half of rainfall samples, and no rainfall sample exceeded 100 ng/l.

Diazinon was also routinely detected in wastewater effluent, which was presumably due to indoor use and disposal. Treatment plants had great difficulty in removing this soluble insecticide, and it frequently caused the plants to flunk their effluent toxicity tests. Diazinon levels in the water column of San Francisco Bay were well below potential estuarine toxicity thresholds (30 ng/l chronic, 80 ng/l acute). It is worth noting that the highest concentrations in the Bay were almost always found near urban creeks.

Based on the regional monitoring data, the study team narrowed their focus to urban creeks, where the greatest potential for toxicity existed. The search for watershed sources of diazinon then began in earnest. Scanlin and Feng (1997) performed automated sampling of runoff and dry weather flow in Castro Valley Creek, a 5.5 square mile residential watershed in Alameda County. They sampled 22 storms over two years and detected diazinon in all events. The mean storm concentration was 343 ng/l and ranged from 90 to 820 ng/l. As might be expected, higher diazinon levels were found during Spring storms when application rates were greatest. Diazinon concentrations also tended to be greater if it had been dry for several weeks before the storm.

Table 106.2: Summary of Diazinon Levels (ng/l) from Different Sources in the San Francisco Bay Region *(adapted from Katznelson and Mumley, 1997)*

Diazinon source sampling	N	Mean	Maximum	Minimum
Rainfall [1]	8	58 [3]	88	33
Stormflow [2]	23	282	590	< 30
Dry weather flow	43	282 [4]	3,000	< 30
Creek sediments (µg/kg)	43	19	59	2.6
San Francisco Bay	55	10	98	< 0.1
Wastewater effluent [5]	21	78	809	< 30

[1] Mean of rainfall samples with detectable diazinon concentrations.

[2] Selected streamflow samples.

[3] Diazinon levels in rainfall from the Central Valley of California, influenced by agricultural pesticide drift were about two orders of magnitude higher than the Bay area samples which were not influenced by agricultural spraying.

[4] If two extreme values are excluded, the mean dry weather concentration drops to 179 ng/l.

[5] Mean of effluent discharge from Bay area wastewater treatment plant, presumably reflects household disposal. Removal rates at treatment plants averaged only 35 percent.

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High concentrations persisted for several days after storms and often exceeded 200 ng/l. In general, diazinon levels dropped only 50 percent two days after a storm. Scanlin and Feng (1997) computed a mass balance for Castro Valley Creek and concluded that 90 percent of the diazinon load was delivered by stormwater runoff. They concluded the mass load discharged by the Creek could be accounted by approximately 0.3 percent of diazinon applied outdoors in the watershed. This finding suggests that it takes very little washoff of the applied diazinon to produce the observed instream concentrations.

Sampling continued at smaller catchment scales. Scanlin and Feng collected grab samples in five smaller catchments within Castro Valley Creek during a single storm event in April of 1996. The range of diazinon levels found in these catchments (mean 390 ng/l, range 201-675 ng/l) was nearly identical to that seen in Castro Valley Creek, despite the fact though each catchment differed greatly in pervious area, residential area, and open space. This suggested that diazinon loads could not be predicted on the basis of general land cover variables.

The search for diazinon continued on an even smaller scale. Scanlin and Feng moved up the catchments to sample individual street gutters. They collected samples at 45 randomly selected street gutters within two catchments of Castro Valley Creek during a single storm event in May of 1996. Each street gutter served about four of five homes. At last, they were able to find diazinon hotspots (Figure 106.1). The mean diazinon level climbed to 3,900 ng/l in all of the street gutter samples, but the range spanned three orders (30 to 70,000 ng/l). After a block by block search, they concluded that diazinon levels in Castro Valley Creek were produced at a very small number of individual residential hotspots. As few as 2 to 4 percent of residential homes in the watershed accounted for the bulk of diazinon observed in Castro Valley Creek. A similar pattern was also observed in monitoring of small storm drain outfalls to San Leandro Creek (Figure 106.2).

The final stage of monitoring evaluated diazinon runoff from individual homes. Two homes were selected for intensive source area sampling. Diazinon was applied to each home at recommended rates and in accordance with label instructions. Source area samples were collected from roof drains, patios and driveways following rainfall events for fifty days after application (Table 106.3). As might be expected, the highest diazinon concentrations were recorded when it rained a few days after initial application (1,100 to 1,200,000 ng/l). Nevertheless, high diazinon concentrations were still recorded in runoff three and even seven weeks after application. The largest source areas were patios and driveways, followed by roof drains.

Figure 106.1: Street Gutter Sampling of Diazinon in Castro Valley Creek *(Source: Scanlin and Feng, 1997)*

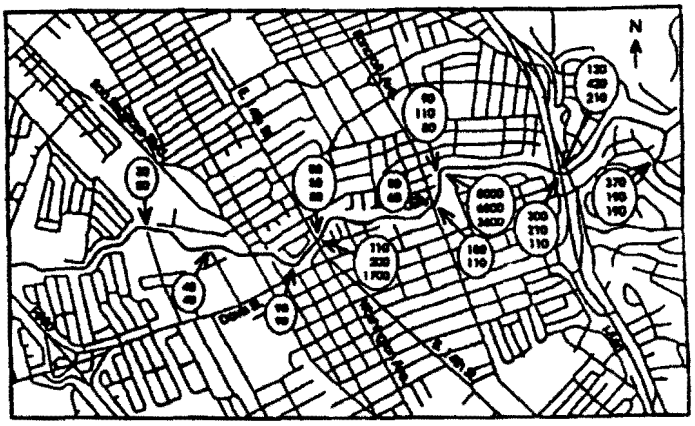
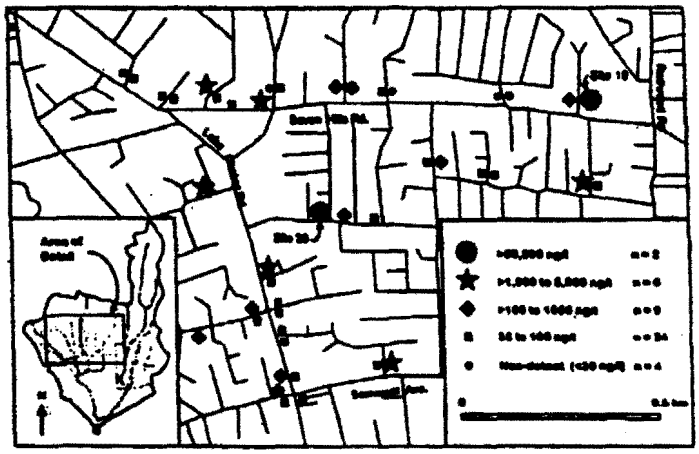


Figure 106.2: Diazinon Levels in Small Drain Outfalls in San Leandro Creek, Spring, 1996 *(Source: Katznelson and Mumley, 1997)*



Implications

The diazinon research has several profound and troubling implications. The first is that harmful diazinon levels can be produced in urban streams from a handful of individual homes within any given watershed. Once diazinon gets into urban streams, it is not easy to remove it. Because of its solubility, current stormwater and even wastewater treatment technology cannot significantly reduce diazinon levels. The only real tool to control diazinon in urban watersheds is source control—to either reduce the use of diazinon or to apply it in a safer manner. It should be noted that residential

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Table 106.3: Concentrations of Source Area Runoff Samples Over Time From Single Family Homes Where Diazinon Was Applied According to Label Instructions *(adapted from Katznelson and Mumley, 1997)*

	First week	Third week	Seventh week
No. of samples	5	6	12
Mean	281,600	166,500	19,200
Minimum	1,100	350	50
Maximum	1,200,000	880,000	110,000

source areas monitoring indicated that "proper use" still produced very high diazinon levels, even when label directions were scrupulously followed.

Consequently, a strong case can be made that the use of diazinon should be restricted or banned in residential areas. Fortunately, for the first time since diazinon was initially registered in 1956, a unique opportunity is currently available to consider such actions. Every pesticide must be re-registered under 1988 federal pesticide regulations, and diazinon's registration is

The only real tool to control diazinon in urban watersheds is source control.

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MEMORANDUM

MONTGOMERY WATSON

To:	Kim Lewand Lawyers for Clean Water	**Date:**	July 19, 2000
From:	Michael Drennan, P.E.	**Reference:**	1026635.011801
Subject:	Impacts of Urbanization on Stream Channel Erosion		

Executive Summary

The following key points are summarized in this memo:
1) Urbanization creates significant adverse impacts on the aquatic environment, specifically increased stormwater peak discharge rates, and increased stormwater volumes.
2) Traditional methods of addressing stormwater peak discharge do not address impacts of increased stormwater volumes.
3) Increased stormwater volumes prolong time of erosive velocity in stream channels and thus the total erosion and sediment generation is increased.
4) Increased stormwater volumes expected from developments such as The Irvine Company's Crystal Cove Development will likely cause increased erosion and sediment generation in conflict with the Erosion, Sediment, Runoff, and Environmentally Sensitive Habitat Area Policies of the certified Newport Coast Local Plan.
5) Adverse impacts associated with urbanization can be reduced through maintaining post-development stormwater runoff volumes at or near pre-development volumes.

Introduction

The purpose of this memo is to discuss the potential impacts of urban development on stream channel erosion, describe how these impacts conflict with the Erosion, Sediment, Runoff, and Environmentally Sensitive Habitat Area Policies of the certified Newport Coast Local Coastal Plan (LCP), and suggest options for minimizing these impacts.

Discussion

1) Urbanization creates significant adverse impacts on the aquatic environment, specifically increased stormwater peak discharge rates, and increased stormwater volumes. The impacts of urbanization on the aquatic ecosystem are well documented (Schueler, 1995, Livingston, 1996, US EPA, 1999). The adverse stormwater and environmental impacts associated with urbanization include:

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Decreased depression storage, floodplains, and wetlands
Decreased infiltration
Decreased evapotransporation
Decrease stream base flows
Decreased habitat and biodiversity
Increased stormwater volume
Increased stormwater peak discharge rate
Increased pollutant concentrations and loadings
Increased channel erosion
Increased frequency of flooding
(Livingston, 1995)

One of the most obvious impacts is the increase in impermeable cover, or imperviousness. Imperviousness in an urban watershed represents the "imprint of land development on the landscape" and is comprised of the transportation system (roads, parking lots, driveways, and sidewalks) and rooftops (Schueler, 1995). Transportation systems can comprise up to 70 percent of the total imperviousness of residential development and the imperviousness for a typical subdivision comprised of single-family homes can reach up to 60 percent (Schueler, 1995).

The increase of imperviousness may change the characteristics of stormwater runoff resulting from precipitation events. In fact, Ferguson and Deak (1994) assert that "urban development in a watershed increases storm-flow volume and peak [flow] rate." Hollis (1995) states that even "low levels of impervious cover (5 to 10 percent) are capable of increasing the peak discharge rate by a factor of 5 to 10 for storms smaller than the one year storm." Schueler (1995) agrees, asserting that effects due to increases in impervious cover is "more pronounced during smaller events" that are typical of winter precipitation in southern California.

One method commonly used to estimate stormwater runoff on small to medium-sized watersheds, like that of the Development, is the rational method. A detailed description of this approach is provided in Maidment (1993). The rational method is governed by the following equation:

$$q=FCiA$$

Where:

q = the peak discharge (length/time)
F = a dimensionless conversion factor
C = runoff coefficient
i = the rainfall intensity(time)
A = drainage basin area

The runoff coefficient is the ratio of runoff to rainfall, where an increase in the runoff coefficient generates a higher peak flow (Schueler, 1995). Intuitively, an increase in imperviousness generates an increase in runoff volume. **Table 1** illustrates this concept with a simple analysis

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using the rational method. The Table shows how runoff volume of a one-inch storm over a one-acre plot ranges from 218 cubic feet for an undeveloped meadow, to 3450 cubic feet for a watershed that has been made completely impermeable (a parking lot). Although this analysis is not based upon the Development, it does illustrate how urbanization leads to increased stormwater runoff volume.

Table 1
Comparison of One Acre of Parking Lot versus One Acre of Meadow

Hydrologic or Water Quality Parameter	Parking Lot	Meadow
Runoff Coefficient	0.95	0.06
Time of Concentration (minutes)	4.8	14.4
Runoff Volume from One-Inch Storm (ft^3)	3450	218

2) Traditional methods of addressing stormwater peak discharge rates do not address impacts of increased stormwater volumes. While the approach to addressing the impacts of urbanization is an evolving field, a common theme is emerging which acknowledges the limitations of managing only peak discharge rates. Traditionally stormwater peak discharge rates have been the primary impact addressed by local development ordinances (Ferguson, 1994). A traditional response of state and local government to concerns about urban development has been to require suppression of the peak rate of flow leaving developments (Ferguson, 1994). For example, The Irvine Company has proposed detention basins for their proposed Crystal Cove Development which prevent peak discharge rates in nearby streams from increasing above pre-development levels during the 100 year storm event to respond to the LCP's Runoff Policy.

While Schueler (1995) comments that "more impervious cover directly translates into higher peak discharge rates, greater runoff volumes, and higher floodplain elevations," detention ponds are most commonly constructed to mitigate these effects. The primary goal of stormwater detention ponds is to reduce the peak discharge rate by slowly releasing water over a longer period of time. This concept is illustrated in **Figure 1**, which is a hydrograph based on that of McCuen (1979). In this case, the total volume of runoff (represented by the area under the triangle) is the same with or without the detention pond, the only difference is that discharge lasts for a longer amount of time.

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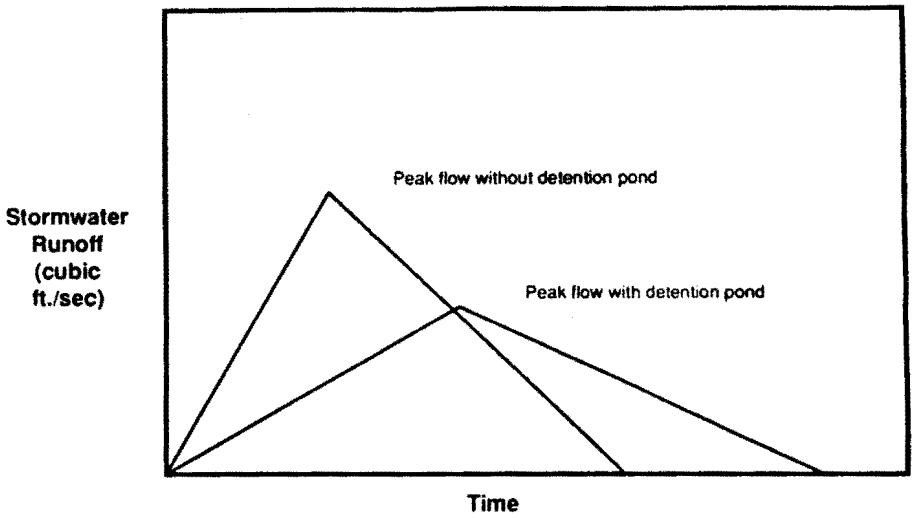
Figure 1
Stormwater Hydrograph - Effects of Increased Stormwater Runoff Volume



3) Increased stormwater volumes prolong time of erosive velocity in stream channels and thus the total erosion and sediment generation is increased. Although stormwater detention ponds can be a useful stormwater management tool, increased stormwater volumes associated with urbanization cause increased stream channel erosion. Urbanization in a watershed tends to aggravate channel erosion by increasing storm flow volume, lengthening the time during which velocity is over a threshold erosive velocity, and thus increasing the total erosion and sediment generation during a given flow event (Ferguson, 1994). McCuen and Moglen (1988) indicate that although "detention basins...are effective in controlling the peak [flow] rate, the basins are ineffective in controlling the degradation of erodible channels downstream of the basin. The increase in runoff volumes that accompany land development causes greater rates of channel degradation because of the increased duration of high in-bank flow rates." Ferguson also states: "Increased volume of flow with urbanization has previously been criticized because it can increase downstream peak flows in open channels where tributary hydrographs combine, it prolongs time of erosive velocity in stream channels, and it represents water diverted from ground water recharge and stream base flow (Ferguson 1994). It appears that the total amount of erosion is increased downstream of detention ponds, since the time of moderate flow rates over a threshold erosive velocity can be extended for a much longer period than would be present in the undeveloped or "natural" watershed (Ferguson, 1994).

At least four studies have estimated the increase of stormwater runoff volume associated with the Crystal Cove Development. The first study that investigates stormwater runoff in the area of the proposed development was conducted by Exponent, Inc. (2000). This study evaluates the water balance of the Muddy Canyon area of the development. The majority of the proposed development lies within the Muddy Canyon watershed. This study predicts that annual average

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stormwater runoff volume in this watershed is expected to increase by 60 percent due to increases in paved areas (Exponent 2000). As noted above, this increase in storm water runoff will likely cause increased stream channel erosion.

The second analysis investigates the water balance of the Los Trancos Canyon in the vicinity of the Development and was also conducted by Exponent (2000). This report indicates that for the Los Trancos Canyon watershed, which is to the west of the development, the post-development water budget is expected to change little.

The third study was conducted by LSA Associates dated April 2000 and entitled Analysis of Coastal Drainages and Wetlands – Comparative History and Likely Future Habitat Conditions in Muddy Canyon. This report states that the proposed development will double the runoff into Muddy Canyon and increase the duration of the stormwater flows due to detention of stormwater.

The fourth study, which was conducted by Tettemer and Assoc. (2000), is summarized in **Table 2**. The Table shows the pre- and post-development areas of each subwatershed in the proposed Newport Coast Planned Community. Also shown in the Table are the stormwater runoff volumes associated with a 100-year storm event (defined as 5.62 inches of rain over a 24-hour period) before and after the development. The Table indicates that although the total change in subwatersheds area is nominal, there is an increase in stormwater runoff volume of 109.8 acre-feet, representing a 5.3 percent increase in runoff volume.

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Table 2
Pre- and Post-Urbanization Subwatershed Areas
and Stormwater Runoff Flow Volumes for the Development

Subwatershed Name	Pre-Dev. Area (acres)	Post-Dev. Area (acres)	Difference (post-pre) in Area (acres)	Pre-Dev. Flow Vol. (ac-ft)	Post-Dev Flow Vol. (ac-ft)	Difference (post-pre) in Flow Vol. (ac-ft)
Los Trancos Canyon at PCH	1101.0	1014.0	-87.0	459.0	426.0	-33.0
Watershed A	87.0	123.0	36.0	52.3	76.2	23.9
Watershed B(1)r, B(2)r	158.0	50.0	-108.0	62.0	9.0	-53.0
Watershed C	10.3	4.9	-5.4	3.0	0.9	-2.1
Watershed D	67.0	49.0	-18.0	18.0	0.0	-18.0
Watershed E	19.0	24.0	5.0	4.0	0.0	-4.0
Watershed M5	99.0	380.0	281.0	27.0	128.0	101.0
Muddy Canyon	988.0	884.0	-104.0	1426.0	1521.0	95.0
Total	2529.3	2528.9	-0.4	2051.3	2161.1	109.8

While it appears that the proposed development has little affect on stormwater runoff volume, it is critical to note that this particular analysis was only describing the 100-year storm event. MacRae (2000) asserts that the response of developed and undeveloped basins to extremely large precipitation events (such as 100-year storms) will be essentially identical. He continues to emphasize that typical small winter storms contribute larger runoff volumes in developed watersheds.

4) Increased stormwater volumes expected from developments such as The Irvine Company's Crystal Cove Development will likely cause increased erosion and sediment generation in conflict with the Erosion, Sediment and Environmentally Sensitive Habitat Area Policies of the California Coastal Commission. The LCP's Sediment Policy states: "Sediment movement in the natural channels shall not be significantly changed in order to maintain stable channel sections and to maintain the present level of beach sand replenishment." The Erosion Policy states: "Post-development erosion rates shall approximate the natural or existing rate before development." The Runoff Policy states: "Peak flood discharge rates of storm water flows in the major streams shall not exceed peak rates of storm water runoff from the area in its natural or undeveloped state . . . ." The Environmentally Sensitive Habitat Area Policy states: "Natural drainage courses and natural springs shall be preserved in their existing state."

As stated in Section 3, above: "Increased volume of flow with urbanization has previously been criticized because it can increase downstream peak flows in open channels where tributary hydrographs combine, it prolongs time of erosive velocity in stream channels, and it represents water diverted from ground water recharge and stream base flow (Ferguson 1994). Exponent indicates post-development stormwater runoff volumes are expected to increase by 60 percent in

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the proposed Crystal Cove Development and LSA indicates runoff volumes will double. These stormwater runoff volumes will therefore likely lead to increased erosion and sediment generation, and potentially reduce the output of natural springs in conflict with the stated policies of the LCP.

Recommendations

5) Adverse impacts associated with urbanization can be reduced through maintaining post-development stormwater runoff volumes at or near pre-development volumes. At least three options exist for addressing the impacts associated with increased stormwater runoff volumes due to urbanization as described briefly below.

a) Existing or proposed detention basins designed to reduce peak discharge rates could be expanded and modified to provide reuse of the water between storm events for uses such as irrigation. Treatment standards and methods would need to be evaluated as well as capacity requirements of the basins. *Detention* basins would need to be redesigned as *retention* basins such that water was retained for subsequent reuse rather than merely detained for subsequent release to the nearby creeks. See discussion below regarding retention basin capacity.

b) Existing or proposed detention basins could be expanded and managed as stormwater retention basins to retain stormwater runoff volumes in excess of pre-development conditions for storm events up to 2 year, 5, year, or 10-year recurrence interval. Tettemer indicates precipitation values in the area of the Crystal Cove Development for these storm events are 2.05 inches, 3.68 inches, and 5.07 inches respectively (2000). Basins could be designed with a sufficient depth to allow levels to fluctuate between the dry season and the wet season, maintaining a minimum water depth the entire year. The size of the existing or proposed basins would likely need to be increased dramatically, but construction and land costs might be offset by designing the basins to provide multiple purposes. For example, many developments recognize the value of water features such as lakes or ponds as an asset to the overall value and appeal to the homeowner. A study by the National Association of Home Builders indicates that "whether a beach, pond, or stream, the proximity to water raises the value of a home by up to 28 percent." (US EPA, 1995)

c) Existing or proposed detention basins could be expanded and managed as stormwater retention/infiltration basins to retain and infiltrate stormwater runoff volumes in excess of pre-development conditions for storm events up to 2 year, 5, year, or 10-year recurrence interval. MacRae (2000) recommends that stormwater retention ponds be constructed in order to contain two-year storm events. MacRae indicates that retention ponds designed to contain the frequent, but smaller, two-year storms produce a reduced stream outflow rate that minimizes downstream erosion. The approach, which is explained in detail in MacRae (1996), may be generalized in scope, but it presents one possible solution to the potential for erosion as a result of development.

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Ferguson also encourages stormwater retention and infiltration because it restores hydrologic function to watersheds. All the water from small, frequent storms, and the first water from large, infrequent storms, infiltrates the soil. Infiltration basin capacity is limited on sites with slowly permeable soils, yet it is hydrologically feasible to infiltrate a large proportion of rain water over the course of a year, and to treat a large proportion of storm events because most of the rain storms and most of the water are in small, frequent storms. For example in the Los Angeles area, daily rainfall of less than 0.1 inch occurs 12 days in an average year, and the frequency of larger storms declines logarithmically. Fifty percent of Los Angeles' annual rain falls in storms of less than 0.8 inch. Thus the bulk of the annual rainwater and of the first flush events can be handled with retention/infiltration basins of modest water storage capacity (Ferguson 1994).

A consideration of the ecological significance of the downstream aquatic environment should help guide decisions about what return frequency of storm event should be retained and/or infiltrated from the Crystal Cove Development. Recognizing that the State Water Resources Control Board has designated the cove as an area of special biological significance, and the California Coastal Commission has designated the cove and Los Trancos and Muddy creeks as environmentally sensitive habitat areas would further warrant evaluation of the cost to retain and/or infiltrate the 10-year storm event.

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California Regional Water Quality Control Board
Santa Ana Region

Winston H. Hickox
Secretary for Environmental Protection

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Gray Davis
Governor

July 14, 2000

Ms. Roberta Marshall
Irvine Community Development Company
550 Newport Center Drive, 7th Floor
Newport Beach, CA 92660

REVISION OF THE PROPOSED CRYSTAL COVE/NEWPORT COAST PHASES IV-3 & IV-4 PROJECT; REVIEW OF SEPTEMBER 30, 1999 WAIVER OF WASTE DISCHARGE REQUIREMENTS

Dear Ms. Marshall:

On June 15, 2000, we received a transmittal dated June 8, 2000 for the above-referenced project. Your letter indicates that the proposed Crystal Cove Phase IV-3 & IV-4 project has been revised. You are seeking our agency's confirmation that the waiver of waste discharge requirements issued on September 30, 1999 still covers the revisions to the proposed project.

As further explained, because project impacts to wetlands have been reduced, we will not reconsider the waiver of waste discharge requirements for those impacts. With respect to potential receiving water quality impacts, the project will be covered by the statewide general construction permit for stormwater and the county areawide stormwater permit. If our evaluation of monitoring data or additional information demonstrates the need, we may issue individual waste discharge requirements for the proposed project.

PROJECT DESCRIPTION

The Irvine Community Development Company (ICDC) is proposing to develop 681 acres of a 980-acre parcel that is bounded by Crystal Cove State Park to the southeast; Pacific Coast Highway on the southwest; Los Trancos Canyon, Pelican Hill Golf Course, future residential development and a parking lot for the State Park to the northwest; and the San Joaquin Hills Transportation Corridor to the northeast. The proposed project area includes the entire Muddy Canyon watershed between Signal Peak and Lower Wishbone, all of the drainages associated with Upper Wishbone, several small tributaries along the southeastern slope of Los Trancos Canyon, and the extreme upper end of Moro Canyon.

The proposed project is comprised of Phases IV-3 and IV-4 that have been divided into seven Planning Areas: 4A, 4B, 5, 6, 12C, 12E and 12G. The proposed development will consist of single family residential units (635 dwelling units are proposed), a private recreational facility, associated roadways, open space and trails, and drainage channel modifications.

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ORIGINAL PROJECT IMPACTS/MITIGATION

The project as previously proposed impacted 2.72 acres of Federal jurisdictional waters: 0.10 acres of isolated seasonal wetlands; 0.13 acres of riparian wetlands associated with the creation of the Muddy Canyon detention basin; and 2.49 acres of ephemeral drainages (streambed). Stormwater and dry-season runoff from the development would be discharged to Muddy Canyon Creek and Los Trancos Creek which are tributary to the Pacific Ocean. Proposed mitigation for the impacts to Federal jurisdictional waters included the following: creation of 0.4 acres of seasonal wetlands on-site; creation of 0.88 acres of riparian habitat upstream of the Muddy Canyon detention basin; and, for mitigation of the 2.49 acres of ephemeral drainage, 0.61 acres of riparian habitat will be enhanced on-site, 1.44 acres of riparian drainage will be created on-site and 2.62 acres of river terrace habitat will be dedicated off-site in the San Joaquin Freshwater Marsh. To prevent adverse impacts to Muddy Canyon Creek, Los Trancos Creek and the Pacific Ocean, ICDC committed to the diversion of Muddy Canyon and Los Trancos Creeks low flows to the sanitary sewer, installation of filter fabric bags and other BMPs, and implementation of a long term water quality monitoring program.

REVISED PROJECT IMPACTS/MITIGATION

In the revised project, impacts to Federal jurisdictional wetlands have been reduced to 2.59 acres: 0.10 acres of seasonal wetlands and 2.49 acres of ephemeral streambed. The Muddy Canyon detention basin has been eliminated from the proposed project; however, minimal wetland impacts (0.0009 acres) may occur in this area as a result of vegetation loss due to shading from the presence of an approximately 46 foot-wide bridge across Muddy Canyon Creek.

Four detention basins located within the development area are proposed. Two of the basins are in the upper portion of the development in Planning Areas 3A and 3B. One detention basin is to be located in the lower portion of the project site in Planning Area 5 and the final detention basin is to be located in Planning Area 14. All runoff from the proposed project is to be conveyed to Muddy Canyon Creek and Los Trancos Creek; there will be no direct discharges from the proposed project to the Irvine Coast Area of Special Biological Significance.

Mitigation for impacts to wetlands (0.10 acres) and ephemeral streambed remains the same as proposed in the original project (creation of 0.4 acres of seasonal wetlands on-site, creation of 0.88 acres of riparian habitat upstream of the Muddy Canyon detention basin, on-site enhancement of 0.61 acres of riparian habitat, on-site creation of 1.44 acres of riparian drainage, and off-site dedication of 2.62 acres).

Mitigation proposed for the 0.0009 acres of shading in Muddy Canyon consists of creation of 0.002 acres of comparable or better quality wetland habitat within the Muddy Canyon open space area.

Measures to address potential water quality impacts remain the same as proposed in the original project (low-flow diversion, installation of filter fabric bags and implementation of long term monitoring program). Additional water quality protection measures proposed

include installation of water quality drainage swales in the residential area and community areas, creation of riparian enhancement areas immediately below major storm drain inlets, and the inclusion of the water quality conditions and responsibilities in the Crystal Cove Community Association's CC&R's.

Given that the project impacts to wetlands have been reduced from 2.72 acres to 2.59 acres and mitigation for these impacts is unchanged from the original proposed project (and is essentially enhanced), we find that the criteria for waiver of waste discharge requirement for impacts to wetlands and riparian habitats specified in Resolution No. 96-9 continue to be satisfied.

To reiterate, as an absolute minimum, potential water quality impacts will be covered by the statewide general construction stormwater permit and the county areawide stormwater permit. We will continue to evaluate the appropriateness of issuing an individual waste discharge requirements for the proposed project.

Should there be any questions, please contact me at (909)782-3284, or Joanne Schneider or Hope Smythe of my staff at (909)782-3287 or (909) 782-4493, respectively.

Sincerely,

Joanne E. Schneider
for GERARD J. THIBEAULT
Executive Officer

cc:

The Irvine Company – Sat Tamaribuchi
U.S. Environmental Protection Agency, Wetlands and Sediment Management Section – Nancy Woo (WTR-10)
U.S. Army Corps of Engineers, Los Angeles District – Jae Chung
U.S. Fish and Wildlife Service – Will Miller
State Water Resources Control Board, DWQ-Nonpoint Source Certification and Loans Unit – Timothy Stevens
California Department of Fish and Game, Long Beach – Terri Dickerson
California Coastal Commission – Teresa Henry
Orange County Public Facilities and Resources Department – Chris Crompton
Orange County Public Facilities and Resources Department – Herb Nakasone
Orange County CoastKeeper – Garry Brown
Alliance to Rescue Crystal Cove – Laura Davick
LSA Associates, Inc. – Art Homrighausen

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MUDDY WATER IN - MUDDY WATER OUT?

A critique of erosion and sediment control plans

Whitney Brown and Deborah Caraco

Construction is considered the most damaging phase of the development cycle for streams and other aquatic resources. Many communities have responded to the many impacts caused by construction sites by enacting erosion and sediment control (ESC) ordinances Typically, the ordinances require developers to submit a plan that contains measures to reduce soil erosion (erosion prevention) and practices to control sediments that have already eroded (sediment controls). In addition, the plan may restrict and/or phase the clearing or grading needed to prepare a development site. Once an ESC plan is reviewed and approved by the local or state authority, the ordinance then requires the developer or contractor install and maintain the specified measures and practices throughout the construction phase. The construction site may be inspected for compliance, and if found lacking, an inspector may issue a permit violation, stop-work order, fine or other measure to compel action.

Theory Collides with Reality

- How well do these ESC programs work in the real world? Not very well, according to six recent surveys of local and state ESC experts and administrators. Consider the following statistics:
- Paterson's (1994) investigation of 128 North Carolina construction sites revealed that 16% of the ESC practices prescribed in the plan were never installed. Of the ESC practices that were actually installed, sixteen percent were not installed correctly and failed to perform. An additional 18% of ESC practices failed because of a lack of maintenance. Combining these three sources of failure together, Paterson found that half of all practices specified in the ESC plans were not implemented properly.
- Mitchell (1993) surveyed state highway erosion control experts, and reported that 30% of respondents noted that at least half of the ESC practices specified in highway ESC plans were never actually installed. While 83% of the respondents indicated that they required a preconstruction meeting with the contractor to discuss ESC plan implementation, only 29% scheduled a pre-wintering meeting. The state highway ESC experts cited five major problems in achieving better highway ESC control: lack of inspectors, weather, lack of contractor cooperation, lack of state leadership, and contractor ignorance (in rank order).
- North Carolina ESC surveys by Patterson et al (1993) found that contractors actually spent only half the estimated cost to install the ESC controls outlined in their plan. In addition, local governments expended three to six times more effort reviewing plans than actually inspecting them. Despite the fact that a majority of ESC staff spent time in the office, they received very little training nor did they train contractors. Training comprised only one tenth of one percent of local ESC program budgets.
- According to a survey of 24 ESC local programs in Northeastern Illinois by conducted by Dreher and Mertz-Erwin (1991), less that 45% of ESC plan reviewers had received formal training in ESC techniques. In addition, a slightly higher number of inspectors were trained in ESC techniques (55%), with most training consisting of informal field mentoring by more experienced staff. The researchers also reported a wide range of inspection frequency. For example, 25% of communities only conducted inspections in response to citizen complaints, and 10% inspected construction sites less frequently than one time a month. More positively, half the Illinois programs reported construction site inspections were done weekly or on a more frequent basis.
- Corish's 1995 national survey of 40 local ESC programs documented poor plan implementation. For example, 67% of survey respondents indicated that ESC controls were inadequately maintained. Soils were not adequately stabilized within the prescribed time limit in 44% of ESC programs, and 56% of programs encountered chronic problems with inadequate temporary soil stabilization (grass or mulch cover).

Nearly half of the local program respondents noted that sensitive areas adjacent or within construction sites (such as stream buffers and wetlands) were inadequately protected from sediment or were actually cleared. 57% of respondents indicated that trees and forest areas that were "protected" under the plan, were not in fact. 24% reported clearing frequently occurred well beyond the disturbed area specified in the plan. Lastly, 36% of the respondents in Corish's survey observed that steep slopes were improperly cleared, or were inadequately stabilized

A national survey of over 80 local ESC programs conducted by Brown and Caraco (1996) discovered that 10% of local ESC programs appear to exist only on paper, as they allocated no staff for either plan review or inspection. Staffing was a major constraint even for the established ESC programs in larger communities

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that processed in excess of 100 ESC permits each year. Over half of these larger ESC programs had less than two plan reviewers and three inspectors to administer their program, and these staff were often asked to perform other duties.

The lack of manpower reflects a chronic funding problem for many local ESC programs, as 75% reported that they were totally dependent on unreliable revenue streams such as application fees or the local operating budget. Brown and Caraco (1996) further noted that a third of all programs surveyed did not require engineering plans, and one-fourth considered themselves a "non-regulatory" program

Several surveys also noted that ESC practices rated by experts as "most effective" were seldom applied at most construction sites. Conversely, a number of ESC practices rated as "ineffective" still enjoy widespread use (Patterson, 1994, Brown and Caraco, 1996). The four most popular practices cited in a national survey were silt fences, stabilized construction entrances, storm drain inlet protection and temporary vegetative stabilization-- all of which rank high in terms installation and maintenance problems.

The actual sediment removal capability of many ESC practices appears to be fairly limited, with most practices achieving TSS removal of 50 to 85% removal rates, according to recent field research profiled in this issue. By contrast, sediment removal rates on the order of 95 to 99% are needed to achieve anything resembling a "clear water" discharge.

ESC practices are increasing the cost of development, with various sources indicating that they comprise from 3 to 6 percent of total development costs. While this investment would have been unthinkable a few decades ago, it is evident from the foregoing statistics that much of this money is not being well spent-- practices are poorly or inappropriately installed, and very little is spent on maintaining them. It is thus not surprising that many in the development industry view ESC plans as "muddy water in-muddy water out and a lot of money in between."

Taken together, these statistics confirm the impression that both the quality and the implementation of ESC plans needs to be greatly strengthened in many communities. In this article, we explore some practical factors that lead to poor design and implementation of ESC plans, based on surveys and expert opinion among ESC professionals. Next, ten performance elements are outlined to improve the effectiveness of ESC plans. Lastly, some practical recommendations are made to improve the capability of local ESC programs to produce better results in the field, given the reality that resources will be always be perpetually scarce in most communities

Why Do Erosion and Sediment Control Plans Fail to Perform

Before ESC plans can be improved, it is important to understand the underlying reasons why they fail. In general, the poor performance can be explained by two reasons. First, many ESC plans are poorly integrated with other stream protection efforts occurring during construction. Construction is potentially the most destructive stage in the entire development process-- trees and topsoil are removed, soils are exposed to erosion, steep slopes are cut, natural topography and drainage are altered, wetlands filled, and riparian areas are disturbed. Consequently, an ESC plan is about more than preventing sediment from leaving the site-- it also sets forth how a stream will be protected during this critical stage of development. It should clearly outline where and how other stream protection measures are employed, such as wetland protection, forest conservation, stream buffers, and stormwater best management practices. It is worth emphasizing that grading and ESC plans are usually the only plans that are routinely read by earthmoving contractors at a construction site. Consequently, any stream protection measure that is dependent or influenced by their activities (and most are) should be clearly marked on the plan.

Many communities fail to make this important link, and as a result, their ESC programs are not integrated into an overall stream protection strategy. For example, only 35% of the local ESC programs considered wetland protection in the ESC plan approval process, and an even smaller number (20%) reviewed ESC plans within a watershed or special protection framework. (Ohrel, 1996). All too often, ESC plans tend to be developed in isolation from other stream protection plans prepared for the site-- someone else designs the stormwater management practices, somebody else does the grading plan, while others assemble any wetland protection, forest conservation, stream buffers or other sensitive areas requirements. Since each plan is often submitted to a different agency or approval process, there is no apparent need to integrate them. .

A quick glance through many state and local ESC manuals reveals a second major reason for poor ESC

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plans--cookie cutter manuals. Most ESC manuals consist of little more than a collection of a few dozen of detailed standards and specifications for individual ESC practices. Very little guidance is given on how to combine ESC practices together into an effective plan. In particular, most ESC manuals provide very skimpy coverage about erosion prevention techniques, such as clearing restrictions, protecting the limits of disturbance, and construction phasing. Many of the standard details for ESC practices are outdated, or lack specific guidance on where and when a particular practice is appropriate. For example, Mitchell (1993) reviewed the contents of 49 state highway ESC manuals and found that 50% did not have detailed standards and specifications for 25 of the more common ESC practices. Few practices ever seem to be dropped from ESC manuals, even if monitoring data or maintenance experience prove them to be inadequate. At the same time, design enhancements that can sharply increase the effectiveness of a ESC practice are often recommended but not required. Faced with this choice, cost- conscious designers and contractors will generally only chose to install that which is absolutely required.

Since ESC manuals offer relatively little practical guidance, the responsibility for developing a quality plan falls to the design engineer. ESC plans, however, are often among the last elements of a construction plan to be completed, and are usually delegated to junior engineers which possess little hands-on ESC experience or training. Often, the only resources available to them are the grading plan for the site, a few sample ESC plans and the local ESC manual. Given a tight timetable, a designer rarely has time to visit the site to become familiar with construction site conditions. Thus, it is not surprising that many ESC plans submitted to local agencies for review are of poor quality.

Local plan reviewers, in turn, often lack the time to fix mistakes, or may not have the field experience or specialized training needed to catch them. This leaves it up to the inspector to correct the mistakes at the construction site. At this point, the contractor (who based his ESC cost estimate on the original plan) is extremely reluctant to make any changes that results in greater expenses.

Ten Elements of an Effective ESC Plan

How can the implementation of ESC plans be improved? To start, designers and plan reviewers should check their ESC plan to determine if it includes ten critical elements as listed below, and portrayed in Figure X. These ten elements were drafted in consultation with local and state ESC experts, and present a comprehensive and integrated approach for achieving stream protection requirements during the construction. As a result, only four elements involve better design and selection of ESC practices. Three ESC elements emphasize non-structural techniques to prevent erosion from occurring and three others elements involve management techniques to translate the plan into reality: The ten elements are:

1. Minimize Needless Clearing and Grading
2. Protect Waterways and Stabilize Drainageways
3. Phase Construction to Limit Soil Exposure
4. Immediately Stabilize Exposed Soils
5. Protect Steep Slopes and Cuts
6. Install Perimeter Controls to Filter Sediments
7. Employ Advanced Sediment Settling Controls
8. Certify Contractors on ESC Plan Implementation
9. Adjust ESC Plan at Construction Site
10. Assess ESC Practices After Storms.

Element No. 1- Restrict Clearing and Grading to a Minimum.

Clearing and grading should only be performed within the context of the overall stream protection strategy. Some portions of the development site should never be cleared and graded, or are sharply restricted. These include:

- stream buffers
- forest conservation areas
- wetlands, springs and seeps
- highly erodible soils
- steep slopes
- environmental features

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- stormwater infiltration areas

A site designer can go even further however, and analyze the entire site to find other open spaces where clearing and/or grading can be avoided. Ideally, only those areas actually needed to build structures and provide access should be cleared. This technique, known as site fingerprinting, can sharply reduce earthwork and ESC control costs, by as much as $5000 per acre (Schueler, 1995) and is critical for forest conservation. All "protected" areas should be delineated on construction drawings, and shown as the "limits of disturbance" or LOD.

The LOD must be clearly visible in the field, and posted by signage, staking, flagging or most preferably, fences (i.e., silt fence or temporary safety/snow fence). The limits and the purpose of the LOD should be clearly conveyed to site personnel and the construction foreman at a pre-construction meeting. In addition, paving and other subcontractors that will be working on the site during a later stage of construction should also be routinely notified about the LOD as they arrive.

Element No. 2. Protect Waterways and Stabilize Drainageways

Streams and waterways are particularly susceptible to sedimentation, and a designer should always check to see if they are present at a site, and whether construction activities will occur near them. If so, no clearing is permitted adjacent to the waterway. As a secondary form of protection, a line of silt fence or earthen dike should be installed along the perimeter of the waterway buffer. If work is planned across or within the waterway, special crossings and diversion techniques will be required (WRA, 1986 is an excellent reference in this regard).

Of equal importance, a designer should carefully map the existing and future drainage patterns at the site, known as drainageways. Not only are drainageways the major route that eroded sediments take to reach streams and waterways, they also are prone to severe erosion due to the velocity of concentrated runoff that travels through them. Consequently, special ESC practices are applied to the drainageway, depending on their slope and length, and the disturbed area that drains to them. An ideal drainageway serves as a grassed waterway, which may require sod, erosion control blankets or jute netting to prevent erosion during storms. In addition, checkdams may often be needed along the drainageway, using riprap, earth, silt fence or straw bales. The storage provided behind checkdams can trap sediment, and is a useful backup in cases where an upstream portion of the drainageway begins to erode into a gully.

Element No. 3 Phase Construction to Minimize Duration of Soil Exposure

Mass grading of larger construction sites should be avoided since it maximizes both the time and area that disturbed soil are exposed to rainfall and therefore subject to soil erosion soils. As an alternative, designers should consider "construction phasing" whereby only a portion of a construction site is disturbed at anyone time to complete the needed building in that phase. Other portions of the construction site are not cleared and graded until the construction of the earlier phase is nearly completed and its exposed soils have been stabilized.

Construction phasing is similar to "just-in-time manufacturing" in that earthmoving occurs only when it is absolutely needed. By breaking the construction site into smaller units, the disturbed area is sharply reduced. This is particularly critical for larger residential and commercial projects that may take one, two or even three years to finish. The potential reduction in sediment load from construction phasing can be very impressive; Claytor computes a 42% reduction in off-site sediment loads in a typical subdivision development scenario (Technical Note 80).

Phased construction requires careful planning. For example, the phase must be planned so that earthwork is balanced within a phase, i.e., the "cut" soil from one area matches the "fill" requirement elsewhere. Other key elements of construction phasing are described in Technical Note 80, and include provisions for temporary stockpiling and construction access, and performance criteria for triggering a new phase. In addition, the phases should correspond to existing or future drainage boundaries wherever possible. In general, construction phasing is most appropriate for larger construction sites of 25 acres or more.

Lastly, it is important to note that construction phasing should not be confused with the construction sequence, which outlines the specific order of construction that the contractor must follow to complete a single phase. The construction sequence can also be a critical element of an ESC plan. For example, the construction sequence should clearly state that the first step of construction is a preconstruction meeting, that ESC controls must be installed prior to any clearing or grading, and disturbed areas must be stabilized within a prescribed time limit. In addition, the ESC designer should carefully evaluate the entire construction sequence to determine if additional ESC practices are needed. For example, the location of drainage ways

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are often altered as the construction sequence progresses, particularly after storm drains are installed. Consequently, additional ESC practices may be needed to accommodate the greater runoff and new discharge points that occur in later development stages.

Element No. 4 - Immediately Stabilize Exposed Soils

The objective at every construction site is to establish a grass or mulch cover within a minimum of two weeks after the soils are exposed. Given the germination time for grass, this means that hydroseeding must occur within two to five days after grading. In northern climates, a straw, bark or fiber mulch is needed to stabilize the soil during the winter months when grass does not grow, or grows poorly.

The value of soil stabilization cannot be overemphasized; research in Maryland has shown that it can reduce sediment concentrations by up to six times, compared to exposed soils without stabilization (Schueler and Lugbill, 1990). A review of over 20 field test plot studies of hydroseeding and various mulches on construction site soils indicates an average sediment reduction of about 80 to 90% (see Technical Note 81). ESC experts almost universally recommended mulching and seeding in the Brown and Caraco (1996) survey.

An effective ESC plan will clearly define time limits to establish grass and/or mulch cover, outline the rates and species of either cool-season or warm-season grasses to be hydroseeded (or type of mulch), and define the conditions under which the temporary cover must be reinforced (i.e, drought, severe erosion, poor germination etc). In particular, a pre-winter meeting should be held at northern construction sites to assess whether the existing soil cover will be adequate throughout these demanding months. A good construction contract should also include a contingency line item for replacing temporary cover in the event that the cover does not take (drought, poor germination, weather, etc). The last objective of the ESC plan is to permanently stabilize disturbed soils with vegetation at the conclusion of each phase of construction.

Element No. 5 - Identify and Protect Steep Slopes and Cuts

Steep slopes are the most highly erodible surface of a construction site, and require special attention on the part of the designer. Steep slopes are variously defined as being 6:1 to 3:1 or greater for existing topography, depending on region of the country. In addition, grading often creates engineered slopes on cut or fill of as much as 50% (2:1 h:v). Wherever possible, clearing and grading of existing steep slopes should be avoided altogether.

If clearing cannot be avoided, special techniques can be used to prevent upland runoff from flowing down a slope. Otherwise severe gullies quickly form, and the slope can fail. The best method involves diverting upland flow around the slope using an earthen dike or slope drain pipe. An upslope line of silt fence can also be used for this purpose, but only if it is adequately anchored, and contributing flow lengths are 50 feet or less, and a permanent drainage structure is installed to protect the slope.

Silt fencing at the toe of slope should be used with great care as high flow velocities and sediment movement downslope will quickly overload or knock the silt fence down. In addition, the performance of silt fence on the toe of slopes is rather low, ranging from 36% to 65% in two Oregon test plot studies (W&H Pacific, 1993). It may be advisable to use a scoop trap or super silt fence under these demanding field conditions (for a description of these techniques, see technical Note 82).

Temporary seeding or mulch, by themselves, may not be effective in preventing erosion on the exposed soils of the slope (Harding, 1990). Additional stabilization methods may be needed such as erosion control blankets and mulch binders. Alternatively, the mulch application rate can be increased. In some cases, steep slopes can be protected in the winter months using plastic sheeting that is suitably anchored (e.g., temporary soil stockpiles),

Element No. 6 - Install Perimeter Controls to Retain Sediment On-Site

Perimeter controls are established at the edge of a construction site to retain or filter concentrated runoff from relatively short distances before it leaves the site. The two most common perimeter control options are silt fences and earth dikes or diversions. Other options are available, including using sidewalk gravel as a perimeter filter on very small and flat areas (Portland BES, 1994).

When properly installed, located and maintained, silt fences are moderately effective in filtering sediment, with reported removal rates ranging from 75 to 86% (Goldman, 1986 and review in Technical Note 82). A majority of the ESC experts, however, report chronic problems in maintaining silt fences (Brown and

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Caraco, 1996 and Paterson, 1994) . A field assessment of over 100 silt fences in North Carolina indicated that 42% of all site fences were improperly installed and 66% were inadequately maintained (Paterson, 1994). The correct placement of silt fences is discussed in detail in Technical Note 82.

The use of straw bale dikes as a perimeter control is not recommended for most communities, except in special circumstances. Only 27 percent of ESC experts rated the straw bale as an effective ESC practice, although its use was still allowed in half of the communities surveyed (Brown and Caraco, 1996).

Earth dikes can also be employed as a perimeter control. For small sites, a compacted two foot tall dike is usually suitable, if it is hydroseeded. When larger dikes are employed it should be kept in mind that they will actually diverting runoff to another portion of the site (usually a downstream sediment traps or basins). Therefore, the designer should ensure they have a stabilized outlet, have capacity for the ten year storm event, and that channel created behind the dike is properly stabilized to prevent erosion. ESC experts typically report fewer maintenance problems with these earth dikes if they are properly engineered (Brown and Caraco, 1996),

Element No. 7 - Employ Advanced Sediment Settling Devices

Even when the best ESC practices are employed, construction sites will still discharge high concentrations of suspended sediments during larger storms. Therefore, the ESC plan should include some kind of trap or basin to capture sediments, and allow time for them to settle out. These settling devices face an imposing performance challenge, as they must operate at a 95 to 99% efficiency to produce a non-turbid discharge. Recent field research, however, indicates that most sediment traps and basins have sediment removal capabilities only on the order of 70 to 90%, and have a discharge TSS concentration of several hundred mg/l. (see technical Note 83).

The limited trapping efficiency of sediment basins in the field appears to be caused by two major factors -- the extreme difficulty in settling out fine-grained sediment particles in suspension (i.e, fine silts and clays) and the simplistic design of existing basins which does not produce ideal settling conditions over the range of storm events that can be expected at a construction site. Indeed, most sediment basins are nothing more than a hole in the ground.

To improve their trapping efficiency, sediment basins must be designed in a more sophisticated manner. These design features include greater wet or dry storage volume, perforated risers, better internal geometry, use of baffles, skimmers and other outlet devices, gentler side-slopes and multiple cell construction. A series of recent field and lab research studies has evaluated the effectiveness of these additional sediment basin design features (see Technical Note 84). In addition, the ESC plan should contain a detailed inspection and clean out schedule for the basin, along with procedures for converting the basin into a permanent stormwater management facility.

Elements No. 8 - Certify Contractors to Implement the ESC Plan.

Plans don't stop sediments from eroding, contractors do. Therefore, the single most important element in ESC plan implementation is a trained and experienced contractor, as they are ultimately responsible for the proper installation and upkeep of ESC practices. In recognition of this fact, many communities now require that key on-site construction staff be certified to implement the ESC plan. For example, both Maryland and Delaware require that at least one person on any construction project be formally certified.

Certification is obtained by completing a mandatory State-sponsored ESC training course. The certified ESC contractor is trained on why ESC is so important in stream protection, how to read ESC plans, and the proper installation and upkeep of ESC practices controls. Typically, the certified contractor is the liaison with the local inspector, and keeps a maintenance and inspection log.

Even if no formal certification program yet exists in a community, there are still several opportunities to train and educate construction personnel on how to implement the ESC plan. These include a mandatory preconstruction meeting, regular inspection visits, a pre-wintering meeting, and the final inspection upon completion of a phase or the entire project. For example, Paterson (1994) documented that a pre-construction meeting can increases ESC plan compliance by as much as 15 percent.

An inspector should view every meeting and site inspection as an educational opportunity, to provide insight into why ESC practices worked or failed, and what maintenance may be needed in the future. This last item is especially important, as many contractors may not realize that ESC practices require maintenance or repair from time to time. Given tight construction budgets and schedules, it is not surprising that many

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contractors wait until a local inspector tells them what needs to be fixed. Local governments that make a strong commitment to contractor education report that inspectors and contractors develop a more constructive and responsive partnership at the site.

Element No. 9 - Adjust ESC Plan at the Construction Site to Reflect Actual Conditions

Plans are usually the first casualty in any military engagement, and must be rapidly revised if the battle is to be won. ESC plans are not much different. An effective ESC plan is usually modified as it moves from the office to the construction site, because of discrepancies between planned and as-built grades, weather conditions, altered drainage, and unforseen construction requirements.. The first two opportunities to revise the ESC plan occur during the preconstruction meeting and the initial inspection of the installation of ESC practices. Table 1 highlights some of the more common revisions to the ESC plan that may be needed.

Regular inspections are needed to ensure that ESC plans are properly implemented,

Element No. 10 - Assess the ESC Plan After Storms.

After a storm passes, it is very clear whether or not an ESC plan actually "worked" at the construction site. If the storm was unusually large or intense, it is very likely that many ESC practices will need repair, clean out or reinforcement. For example, hydroseeding may wash away, silt fences over-top, earth dikes blow out, sediment basins fill up or new gullies are formed. Therefore, the last component of an effective ESC plan is a rapid response after a storm to assess the damage to ESC practices, and quickly correct it.

TABLE 1: Stages of construction at which plan revisions should be considered
(Source: U.S. EPA 1993)

Stage	Basis of Plan Changes
Preconstruction meeting	Plan impractical from the contractors' standpoint (e.g., not enough space for materials storage) Site visit confirms that the plan will not work based on other site characteristics
After clearing/grading and sediment control installation	"As built" grading or sediment controls are different from the original plan
During construction of the drainage system	Hydrology changes may require new different ESC measures
During house construction	Importing materials and site preparation for home construction will alter the landscape
As needed based on routine inspection visits	Failing measures may need to be modified
After major storms	Major storm events reveal under- or poorly designed practices
Close of season	Depending on weather or season, stabilization may be different than on the original plan

The dynamic conditions at a construction site make maintenance of ESC practices critical. Still, some contractors will wait until an inspector threatens them with an enforcement action. The underlying reason for their reluctance is financial -- most construction contracts include ESC as a single lump sum *installation* item in the bid estimate. More often than not, contractors "low ball" the ESC item to be competitive on the overall bid. Thus, they often balk at incurring the "extra" cost to maintain or repair ESC practices, since it decreases their profit margin on a job. To avoid these problems, a good construction contract will also include a *contingency line item for maintaining and repairing ESC practices*. Some estimates of the expected cost of maintaining selected ESC practices can be found in Table 2.

Other maintenance requirements in the ESC plan includes the designation of an on-site (certified) contractor responsible for maintenance, a minimum maintenance schedule, and a periodic self-inspection of the limits of disturbance.

How Can Local Communities Foster Better ESC Plan Implementation?

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Over ninety percent of ESC programs are administered by municipal, local, or natural resource or soil conservation district agencies (Brown and Caraco, 1996). According to the same survey, sixty percent of local ESC programs were mandated by State law, but provided no funding to support local implementation. Local ESC agencies are chronically strapped for funds, and over 75% rely on local property taxes or application fees as their sole source of revenue. ESC programs must routinely compete with many other un-met spending priorities within a community, and often lose. Absent a dedicated funding source, it is doubtful whether many communities can ever afford the full complement of inspectors and plan reviewers they probably need. Given shoestring budgets faced by so many local ESC programs, how can they realistically improve the performance of ESC plans?

When resources are limited, the only means of becoming more productive is to dramatically improve how existing ESC program resources are managed. With this in mind, the Center suggests ten modest management tips to get more results with less resources.

1. *Leadership*. According to Shaver (1996), the best ESC programs in the country share a common feature--committed local leadership. Key characteristics of effective leaders include a strong belief that ESC is a critical element of local environmental protection, a tireless commitment to educate designers, contractors, and the public about the need for better erosion and sediment control, and a willingness to try new approaches and techniques to continually improve the quality of the ESC program..

TABLE 2: Maintenance Costs as Percentage of Installation Costs
(Source: U.S. EPA 1993)

Practice	Annual Maintenance as % of Installation
Seeding	20%
Mulching	2%
Silt Fence	100%
Sediment Trap	20%
Sediment Basin	25%
Inlet Protection	60%

2. *Redeploy existing staff from the office to the field or the training room.* Plan reviewers can be assigned more time at construction site to get better feedback on the ESC plans they review, and to increase inspection frequency. In addition, training and education should become an integral element of the job description of both inspectors and plan reviewers, with as much as 10% of their time assigned to contractor training or public outreach.
3. *Cross-train local development review and inspection staff.* An effective management approach involves cross-training in stream protection for all local development review and inspection staff. The cross-training provides ESC reviewers and inspectors with an understanding of important stream protection concerns at the site, such as forest conservation, stream buffer, wetland and stormwater management. At the same time, non-ESC staff are able to spot and refer ESC problems when they visit the site, and integrate ESC concerns in their plan review efforts.
4. *Submit erosion prevention elements for early planning review.* Amend the development review process to require early review of the erosion prevention elements of the ESC plan (minimize clearing and grading, protect waterways, and construction phasing). Review of these elements should be closely coordinated with early site plan concepts. In some cases, review of erosion prevention elements can be shifted from the ESC permitting agency to the local planning agency.
5. *Prioritize inspections based on erosion risk.* Use a simple spreadsheet model to schedule inspections more frequently for the construction sites most vulnerable to erosion (e.g, based on factors such as site area, slope, erodible soils, proximity to waterways, etc). Even if staff resources are spread too thin to inspect all of the sites, this approach ensures that the most likely problem sites will get the attention they need.

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6. *Require designer to certify initial installation of ESC practices.* The inspection process should be amended so that the ESC plan designer must visit the site to certify that the ESC practices called for in the plan have been correctly installed at the construction site (adjusting for any changes that may have been made at the preconstruction meeting). This simple requirement accomplishes two things. First, it is a useful enforcement mechanism to ensure that all ESC practices are actually installed correctly. Secondly, it is also a great learning opportunity for ESC plan designers, as they can see how their plan works under the demanding conditions of a construction site.
7. *Invest in contractor certification and private inspector programs.* The ESC workforce can be quickly multiplied when a community invests in a contractor certification or private inspector program. The Delaware model is described in detail in Appendices A and B of Horner et al (1994), and in Technical Note 85.
8. *Use public-sector construction projects to demonstrate effective ESC controls.* Local governments are a source of a lot of construction projects -- new schools, roads, and other infrastructure. Needless to say, ESC on these public-sector projects should be always be first class, so they can be used as demonstration sites for contractor training and tangible evidence of local commitment to ESC . In addition, public sector construction documents should include contingency items and other contractual provisions that allow contractors to recover the full cost of maintaining ESC practices.
9. *Enlist the talents of developers and engineering consultants in the ESC program.* Both groups provide useful input on how ESC practices can be applied more cost-effectively or how the plan review process can be streamlined. Many communities have found that an advisory group is very helpful in developing a constructive partnership for improving ESC plans.
10. *Reinvent the local ESC manual.* A productive task to assign to the advisory group is to revisit the current ESC manual and local training materials to improve the quality of ESC plans and the overall performance of ESC measures installed at construction sites.

If these measures are taken, the murky mixture that usually leaves construction sites will be considerably less sediment laden. ESC plans will never produce 100% sediment free output, but the dollars communities spend on this task can be put to their best use if erosion prevention and sediment control practices are applied with greater care, vigor and ingenuity.

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Dear Sirs,

I am writing this letter on behalf of Orange County Coast Keeper and Mr. Garry Brown (collectively, "CoastKeeper") in regard to discharges of pollutants by California Pacific Homes, Inc, Western Golf Properties, Inc, Irvine Ranch Water District, Irvine Community Development Company and the Irvine Company.

Section 505(b) of the Federal Water Pollution Control Act ("CWA, or the "Act") requires that sixty (60) days prior to the initiation of a civil action against any alleged violator under Section 505(a) of the Act, 33 U.S.C. § 1365(a), a citizen must give notice of their intent to sue to the discharger, the Administrator of the U.S. Environmental Protection Agency, the Regional Administrator of the Environmental Protection Agency for the region in which such violation is alleged to have occurred, and the Chief Administrative Officer for the State in which the violation is alleged to have occurred. This letter addresses:

1) The Irvine Company, the Pelican Hill Golf Club, and their agents' (Collectively "TIC") violations of the Section 301 Act for unpermitted discharges of contaminated irrigation water from the Pelican Cove Golf Course into Crystal Cove;

2) The Irvine Ranch Water District's Publicly Owned Treatment Works' violations of its National Pollutant Discharge Elimination System ("NPDES") Permit No. CA 8000326 and Section 301 of the Act for discharges of its effluent used as irrigation water on the Pelican Cove Golf Course into Crystal Cove; and

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3) TIC's violations of the effluent limitations and reporting and monitoring requirements of NPDES Permit No. CAS000002 (hereinafter "Construction Permit"), State Water Resources Control Board, (hereinafter "State Board") Water Quality Order 92-06 DWQ issued pursuant to Section 402(p) of the Act, 33 U.S.C. § 1342(p).

A. BACKGROUND

1. The Crystal Cove Project

Crystal Cove has long been recognized as a precious part of California's aquatic resources. Among other things, dolphin birthing has been observed at Crystal Cove. In 1972, in recognition of the ecological value of Crystal Cove, the State Board designated Crystal Cove as an Area of Special Biological Significance ("ASBS"), prohibiting discharges of waste to Crystal Cove because "...certain biological communities because of their value or fragility deserve very special protection consisting of preservation and maintenance of natural water quality conditions..."

Beginning in 1988, the Irvine Company undertook development of property adjacent to and draining to Crystal Cove. TIC proposed developing a golf course, as well as thousands of very large residences, a commercial center, and an equestrian center in 12 phases. TIC first applied to the Army Corps of Engineers for dredge and fill Permits pursuant to Section 404 of the Act ("404 Permit") for the alteration or elimination of creeks and wetlands in the first phase of the project. TIC proposed that their fill activities could be conducted under Nationwide Permit 26 ("NWP 26"), which involved minimal public or agency oversight, based on the small amount of fill of waters of the United States involved. At that time, both the United States Environmental Protection Agency ("EPA") and the United States Department of Fish and Game ("DFG") both opposed permitting the proposed fill, noting that given the overall scope of the proposed project, TIC's initial application "piecemealed" the true amount of fill of the United States contemplated by dividing the permitting processes by the proposed phases in violation of NWP 26 and the Act. Despite these objections, and the flat prohibition on the discharges of waste to an ASBS set out in the Ocean Plan, the Regional Water Quality Control Board, Santa Ana Region ("Regional Board") issued a waiver of the required water quality certification, and the Army Corps provided for coverage under NWP 26. TIC has now applied for another fill permit under NWP 26 for five additional phases of the project. The fill conducted by TIC in each of the five phases of the project, totaling 5.22 acres, clearly exceed the three acre maximum which may be permitted by NWP 26. Therefore Orange County Coast Keeper intends to oppose TIC's current application, and will request that any additional fill be subject to an individual 404 Permit.

By 1994, TIC had completed development of the golf course, named Pelican Hill. Pelican Hill Golf Course is irrigated with tertiary treated, or "reclaimed" wastewater from the Irvine Ranch Water District's Publicly Owned Treatment Works ("POTW"). Ex 4 P 5

The POTW remains responsible under the terms of NPDES Permit No. CA 8000326, Regional Board Order NO. 94-22 ("POTW Permit") for the final discharge of the irrigation water provided to Pelican Hill Golf Course. Section A(12) of the POTW Permit specifically prohibits the discharge of reclaimed water to surface water bodies, other than emergency overflows from Sand Canyon Reservoir. Once applied to the golf course, the reclaimed water used for irrigation collects in water features on the golf course, having concentrated fertilizer, pesticides, and other pollutants associated with golf courses, as well as the pollutants in treated wastewater, such as heavy metals and organics. Without ever having obtained any permit, TIC regularly pumps these ponds of contaminated wasted water and discharges the wastewater over nearby bluffs into Crystal Cove. This contaminated water cascading over the bluffs into Crystal Cove is such a commonly observed phenomena that TIC itself designated the area "Pelican Hill Waterfall" on maps provided to the Coastal Commission. Information currently available to Coast Keeper indicates that TIC illegally discharges this wastewater to Crystal Cove on average four to six times per year, both during wet and dry weather, most recently after dark on Christmas Eve, 1999.

In 1994 and 1997, TIC received extensions of NWP 26 coverage from the Army Corps. Beginning in 1999, TIC began developing Phases one and two of the project. Storm water discharges from the grading and other construction activities conducted for this phase of the project are regulated by the Construction Permit. The Construction Permit includes requirements that the discharger maintain pollution control measures meeting Best Available Technology standards, as well as flat prohibitions on discharges which cause or threaten to cause pollution, or which cause or contribute to violations of water quality standards, including the prohibition on discharges of waste to ASBS's contained in the Ocean Plan. Information currently available to CoastKeeper, including photographs taken during site inspections, indicates that TIC has failed to comply with the requirements of the Construction Permit, and is discharging storm water containing heavy concentrations of silt and other pollutants, as well as non-storm water discharges containing high concentrations of chlorine and other pollutants, into Crystal Cove. Although EPA noted some of TIC's violations of the Construction Permit and the Act and has ordered improved pollution management practices, TIC's violations continue.

Thus TIC's development project in the Crystal Cove area has been conducted in chronic violation of the Clean Water Act and State water quality protection laws. Clearly TIC views environmental regulation and protection as a barrier to its development plans, rather than as a means to preserve the resources of California. Orange County Coast Keeper intends to bring its Citizen Enforcement Action to compel TIC's compliance, and to stop the degradation of Crystal Cove.

2. Orange County CoastKeeper

Orange County CoastKeeper is a non-profit public benefit corporation organized under the laws of the State of California with its main office in Newport Beach,

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California. Orange County CoastKeeper has approximately 160 members who live and/or recreate in and around the Orange County area. Orange County CoastKeeper is dedicated to the preservation, protection, and defense of the environment, the wildlife, and the natural resources of Orange County area receiving waters. To further these goals, CoastKeeper actively seeks federal and state agency implementation of the Act and, where necessary, directly initiates enforcement actions on behalf of itself and its members.

Members of Orange County CoastKeeper reside near Orange County Bays, area Rivers, and coastal receiving waters, including specifically Crystal Cove, and use and enjoy those waters for recreation and other activities. Members of Orange County CoastKeeper use and enjoy the waters into which pollutants from TIC's illegal irrigation water discharges and construction activities are discharged. Members of Orange County CoastKeeper use those areas to fish, sail, boat, kayak, swim, bird-watch, view wildlife and engage in scientific study including monitoring activities. The discharge of pollutants by TIC impairs each of those uses. Thus, the interests of Orange County CoastKeeper's members have been, are being, and will continue to be adversely affected by TIC's failure to comply with the Clean Water Act.

B. VIOLATIONS OF THE ACT FOR DISCHARGES OF WASTEWATER FROM PELICAN COVE GOLF COURSE TO CRYSTAL COVE

CoastKeeper hereby puts you on notice that upon the expiration of sixty (60) days after the date of this NOTICE OF VIOLATIONS AND INTENT TO FILE SUIT, we intend to file suit in Federal Court against the Irvine Company, and its agents and/or affiliates, including but not limited to California Pacific Homes and Irvine Community Development Company, Western Golf Properties and the Irvine Ranch Water District. Those violations are set out in further detail below.

1. Unpermitted Discharges of Wastewater from Pelican Cove

Section 301(a) of the Clean Water Act, 33 U.S.C. § 1311(a), and its implementing regulations require any person who discharges or proposes to discharge pollutants, including storm water discharges associated with industrial activity, into the waters of the United States to submit an NPDES permit application.

Information currently available to CoastKeeper indicates that TIC has discharged wastewater in the form of collected treated effluent used for irrigation at the Pelican Cove Golf Course into Crystal Cove at least four to six times per year, discharging for at least 24 hours on each occasion, for a total of at least 20 discharges. CoastKeeper's review of files at the Regional Board indicates that TIC has never obtained or even applied for a permit for these discharges of pollutants. Further, TIC's most recent illegal discharge of wastewater, conducted during the night of Christmas Eve, indicates that TIC is aware the discharge is illegal, and is attempting to avoid

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detection. TIC's unpermitted discharges total at least 20 violations of the Act, and those violations are continuing. CoastKeeper believes that evidence of additional discharges will be obtained during the sixty day notice period. CoastKeeper therefore specifically puts you on notice that any additional discharge events that CoastKeeper discovers after the date of this letter will be included in CoastKeeper's enforcement action.

2. Discharges of Wastewater from Pelican Cove in Violation of NPDES Permit No. 8000326

TIC obtains the tertiary treated wastewater it uses for irrigation at the Pelican Cove golf course from the Irvine Ranch POTW. The POTW's effluent, whether sent to the Sand Canyon Reservoir, or to re-users such as TIC, is regulated by NPDES Permit No. 8000326. Section A(12) of the Permit prohibits the discharge of effluent to surface water anywhere except for reclamation uses or during occasional overflows to San Diego Creek. Therefore the direct discharges of the POTW's effluent from the Pelican Hills golf course to Crystal Cove is in violation of NPDES Permit No 8000326. Information currently available to CoastKeeper indicates that effluent from the POTW has been discharged from the Pelican Cove Golf Course into Crystal Cove at least four to six times per year, totaling hundreds of thousands of gallons, for a total of at least 20 violations of the POTW Permit and the Act, and that those violations are ongoing. CoastKeeper believes that evidence of additional discharges will be obtained during the sixty-day notice period. CoastKeeper therefore specifically puts you on notice that any additional discharge events that CoastKeeper discovers after the date of this letter will be included in CoastKeeper's enforcement action.

C. VIOLATIONS OF THE ACT AND GENERAL CONSTRUCTION PERMIT NO. CAS000002.

Section 301(a) of the Clean Water Act, 33 U.S.C. § 1311(a), and its implementing regulations require any person who discharges or proposes to discharge pollutants, including storm water discharges associated with construction activity, into the waters of the United States to submit a NPDES permit application. Dischargers of storm water associated with construction activity are required to apply for an individual permit, apply through a group application, or seek coverage under a promulgated storm water general permit such as the State Board's Construction General Permit. The State of California issued General Permit No. CAS000002 which requires existing facilities subject to its terms to file a Notice of Intent ("NOI") for coverage under the Permit prior to commencement of construction activity

A review of files at the Regional Water Quality Control Board indicates that TIC filed an NOI for coverage under the General Permit, although the NOI is not dated. While TIC filed an NOI, site inspections, and a review of TIC's compliance documents,

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by CoastKeeper indicates that TIC fails to comply with the terms of the Construction Permit and the Clean Water Act.

1. **Discharges in Violation of the Act and the General Permit.**

Provision A(2) of the General Permit prohibits storm water discharges and authorized non storm water discharges which cause or threaten to cause pollution, contamination, or nuisance. Provision B(1) of the General Permit prohibits storm water discharges to surface or groundwater which adversely impact human health or the environment. Provision B(2) of the General Permit prohibits storm water discharges which cause or contribute to an exceedance of any water quality standards contained in applicable State plans, including specifically the Ocean Plan.

CoastKeeper has observed and photographed large amounts of turbid storm water discharging into Crystal Cove during and immediately after storm events. Information currently availabl to CoastKeeper indicates that from at least 1 January 1999 to the present, TIC has discharged storm water associated with construction activity and storm water containing pollutants to two concrete storm water pipes conveying storm water from the site to Crystal Cove, via Muddy Creek and Los Trancos Creek, during at least every rain event over 0.1 inches as determined by the National Climatic Data Center, or on at least 3 separate occasions. In addition, TIC discharges directly from the open hillsides of the construction area through at least four storm water conveyance ditches, none of which have any type of filtration or other pollution control measure. When additional rain data becomes available, BayKeeper intends to use the new data to add those violations to its enforcement action. TIC will continue to be in violation of the General Permit each day they discharge contaminated storm water which causes or threatens to cause pollution, contamination, or nuisance, which adversely impacts human health or the environment, or causes or contributes to a violation of any water quality standard contained in applicable State plans and the Basin Plan.

Section A(1) and C(3) of the Construction Permit also prohibit discharges of non-storm except in certain limited circumstances, and in all events prohibits non-storm water discharges which cause or contribute to violations of Water Quality Standards set out in Ocean or Basin Plans. Information currently available to CoastKeeper indicates that TIC has repeatedly discharged polluted non-storm water to Crystal Cove. For example, on 15 November 1999, over a period of approximately five hours TIC discharged a large volume of wastewater containing high concentrations of chlorine to Los Trancos Creek and Crystal Cove. CoastKeeper has also observed and photographed highly turbid discharges from Los Trancos Creek during dry weather, creating large silt plumes in Crystal Cove, on 20 September 1999, 14 August 1999, and 8 August 1999. CoastKeeper investigated the source of the 20 September 1999 non-storm water discharge, and discovered that a fresh water pipe had burst on TIC property, completely washing out an adjacent road, and generating the huge plum of silt in the Creek and Crystal Cove. TIC has therefore violated the Construction Permit and

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the Act on at least four occasions, and those violations are continuing. CoastKeeper believes that evidence of additional discharges will be obtained during the sixty day notice period. CoastKeeper therefore specifically puts you on notice that any additional discharge events that CoastKeeper discovers after the date of this letter will be included in CoastKeeper's enforcement action.

2. **Failure to Comply with Terms of the General Permit.**

The General Permit requires storm water dischargers to comply with its terms, including the development and implementation of a Storm Water Pollution Prevention Plan ("SWPPP") and the development and implementation of a Monitoring and Reporting Program. TIC is not complying with these terms of the General Permit.

a. **Storm Water Pollution Prevention Program**

Section A and the incorporated Fact Sheet of the General Permit requires dischargers to develop and implement a SWPPP which satisfies certain minimum requirements. The SWPPP must set include pollution control measures which meet Best Available Technology Economically Available ("BAT") and Best Conventional Pollutant Control Technology ("BCT"). The SWPPP must also include, among other elements: 1) a description of potential sources of pollutants to the storm water system; 2) a site map showing the location of pollution control practices used during construction; areas used to store soils and wastes; areas of cut and fill; areas of soil disturbance; areas of potential soil erosion where control practices will be used during construction; locations of post construction control practices; and vehicle storage and service areas; and 3) a description of storm water management practices, Best Management Practices ("BMPs") and preventive maintenance.

Information currently available to CoastKeeper indicates that TIC has not developed and implemented an adequate SWPPP for its Facility. TIC has failed to implement, and the SWPPP fails to incorporate, pollution control measures that achieve the BAT standard. While the SWPPP has forms describing generalized BMPs for construction activities, the SWPPP fails to provide any site specific application for these measures. As a result, few if any of the measures generally described in the SWPPP have been implemented. For example, TIC's SWPPP includes a description of some track-off control measures, yet the SWPPP map fails to designate ingress or egress points at the site, or to describe where track-off measures should be implemented. CoastKeeper investigators observed no track-off pollution prevention measures at the ingress and egress points at the site. The SWPPP fails to mention numerous storm water conveyance ditches and discharge points observed during site visits. The SWPPP does describes two primary discharge points from the site, yet provides for no filtering or other treatment for these discharges flowing directly to Crystal Cove. The SWPPP fails to provide any specificity, either in the narrative section or in the site map, as to areas of cut and fill, soil disturbance, soil or waste

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storage, or the location or control measures to be implemented. The SWPPP fails to provide for BMP's for vehicle fueling, and CoastKeeper observed and photographed a large tank used for diesel refueling without secondary containment or any storm water controls at the fueling area. CoastKeeper investigators observed steep slopes of exposed, graded soil with inadequate or non-existent erosion controls adjacent to both Muddy Creek and Trancos Creek. Further, the SWPPP fails completely to mention any post construction control practices.

Each day that TIC conducts construction activities with inadequate BMP's and an inadequate SWPPP is a violation of the Construction Permit and the Act. TIC has been grading and disturbing soil at the Crystal Cove Project since at least 1 January 1999, for at least 366 violations of the Act, and these violations are ongoing.

b. Monitoring and Reporting Program

Provision E(3) and Section B(1) of the General Permit requires dischargers to develop and implement a monitoring program .

Section B(3) & (4) and Section A(9) of the General Permit requires dischargers to conduct site inspections to identify areas contributing to storm water discharges, to evaluate the effectiveness of the BMPs measures in reducing pollutant loading, and to evaluate whether pollution control measures set out in the SWPPP are adequate and properly implemented. Section C(9) & (10) require dischargers to certify, based on the annual site inspection, that the facility is in compliance with the General Permit and to report any noncompliance.

Information currently available to CoastKeeper indicates that TIC has not developed an adequate monitoring and reporting program. TIC has failed to identify and report the illegal discharges, including contaminated storm water and non-storm water, or to evaluate in a meaningful way and therefore correct the serious inadequacies in its SWPPP and SWPPP implementation. Therefore, the TIC Facility has been in continuous violation of the monitoring and reporting requirements every day since 1 January 1998, for a total of at least 366 separate violations. TIC will continue to be in violation of the monitoring and reporting requirements every day they discharge non storm water and storm water containing pollutants without developing and implementing a Monitoring and Reporting Program for its facility.

In addition to these violations set forth above, this notice covers all violations of the Clean Water Act by TIC evidenced by information which becomes available to CoastKeeper after the date of this NOTICE OF VIOLATION AND INTENT TO FILE SUIT.

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Pursuant to Section 309(d) of the Act, 33 U.S.C. § 1319(d), and the Adjustment of Civil Monetary Penalties for Inflation, 40 C.F.R. Part 19, each facility's _____ separate violations of the Act subjects the violator to a penalty of up to $27,500 per day per violation . In addition to civil penalties, CoastKeeper will seek injunctive relief preventing further violations of the Act pursuant to Sections 505(a) & (d), 33 U.S.C. § 1365(a) & (d), and such other relief as is permitted by law. Lastly, Section 505(d) of the Act, 33 U.S.C. § 1365(d), permits prevailing parties to recover costs and fees. CoastKeeper has retained legal counsel to represent them in this matter. All communications should be addressed to:

Daniel Cooper
Layne Friedrich
Lawyers for Clean Water
c/o San Francisco BayKeeper
Presidio, Building 1004
PO Box 29921
San Francisco, CA 94129-0921
Telephone: (415) 561-2222

CoastKeeper believes this NOTICE OF INTENT TO SUE sufficiently states grounds for filing suit. We intend, at the close of the 60-day notice period or shortly thereafter to file a citizen suit under Section 505(a) of the Act against the Irvine Company and the Irvine Ranch Water District for violations of the Act.

During the 60-day notice period, we would be willing to discuss effective remedies for the violations noted in this letter. However, if you wish to pursue such discussions in the absence of litigation, we suggest that you initiate those discussions within the next 20 days so that they may be completed before the end of the 60-day notice period. We do not intend to delay the filing of a complaint in federal court if discussions are continuing when that period ends.

Very truly yours,

Garry Brown
Orange County CoastKeeper

Cc list on next page

Carol M. Browner, Administrator

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Irvine Ranch Water District
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Board of Directors

Melvin L. Nutter, Chairperson
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The Honorable
Anthony Beilenson

Melvin B. Lane

LEAGUE FOR COASTAL PROTECTION

July 20, 2000

California Coastal Commission
200 Oceangate, 10th floor
Long Beach, CA 90802
Attn: Teresa Henry

RECEIVED
JUL 21 2000
CALIFORNIA
COASTAL COMMISSION

Re: Appeal No. A5-IRC-99-301

Dear Commissioners and Ms. Henry

This letter details the history of the project under appeal and LCP's continuing concerns. LCP would like to make clear that it does not dispute the Irvine Company's right to develop within the appeal area but feels that there are continuing concerns regarding water quality and the preservation of Crystal Cove State Park, the beach and the waters of the ASBS that have, as of yet, not been adequately addressed.

Project Appeal Background

It has been roughly one year since the League for Coastal Protection brought the Irvine Crystal Cove project located in the appeal areas of 4A, 4B, 5.6.12C, 12E and 12G to the attention of the California Coastal Commission. The impetus for LCP's concern was two letters from the Department of Fish and Game and the Environmental Protection Agency that were strongly critical of the Irvine Company's application to the Army Corps of Engineers for a nationwide permit to fill roughly 6 miles of intermittent and ephemeral streams.

Misuse of Nationwide Permit 26

Always controversial, NWP 26 was designed to provide a streamlined process for small projects where fill was limited to no more than 500 feet of linear stream bed. Irvine argued then, as they continue to, that the almost 6 miles of intermittent and ephemeral drainages that they were going to fill did not qualify as streams (Irvine prefers to refer to them as erosion gullies) and that they served little purpose within the watershed. EPA strongly disagreed and argued that the filling of these drainages was like cutting the fingers off the hand of the watershed and would result in increased erosion and damage to both streams, which represented the last relatively unaltered drainages in all of Orange County.

Inadequate Monitoring Fails to Document Impacts to Los Trancos

In its attempt to gain Coastal Commission approval of its project as originally designed, Irvine supplied extensive documentation purporting to show that their project would have no negative impacts to the streams, the beach or to the waters of the Crystal Cove, which are officially designated as an Area of Special Biological Significance and a Marine Life Refuge. The centerpiece of their argument was a monitoring study conducted by Dr. Ford that was required by the LCP 2nd amendment to monitor the water quality impacts of the Pelican Hills Golf Course. Dr. Ford found that there were no negative water quality impacts from the golf course.

Unfortunately, that assertion flew in the face of reality. Anecdotal evidence gathered since the golf course was constructed by the residents of Crystal Cove, some who have observed the creek for as long as 40 years, indicated that Los Trancos Creek (which runs through the middle of the historic cottages that are slated for development by State Parks into a $500 a night resort), had been altered

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from an intermittent stream that was dry 8 months out of the year to a stream that ran almost constantly and was subjected to mysterious heavy flows that cascaded through the 'public access tunnel' under PCH and over the cliffs.

Pelican Hills Golf Course Management Fined for Illegal Discharges to Los Trancos

It seemed impossible that Dr. Ford's study would not detect such obvious impacts, but there was a very good reason why it didn't. That's because Dr. Ford did not include Los Trancos Creek as a sample site in his monitoring study despite the fact that it formed the natural drainage for runoff from the golf course. Instead Dr. Ford focused his attention on the impacts to the already developed residential area of Cameo Shores farther north on PCH. So, for years, Los Trancos, like Muddy Creek, which is characterized in large part as a Category A ESHA USGS blue line stream was subjected to accelerated erosion and damage while pollutants flowed into the waters of the ASBS. Not until the Orange County CoastKeeper threatened litigation to halt the illegal discharges did the Regional Water Quality Control Board finally step up to the plate and fine the Irvine Company's golf course management company $148,000 for eight illegal discharges of nearly 16 million gallons of recycled water during a period of 6 months from August 1999 to January 2000. (LA Times article, dated May 6,2000, attached)

Assertion that Impacts to Water Quality are the Responsibility of the Regional Water Control Board and Not the Coastal Commission

After the December hearing at which CCC staff recommended denial of the original project based on inconsistencies with the certified LCP, Irvine opted to go back to the drawing board and to their credit, some important changes have been made. For example, they have come to an agreement with the OCSD for collection of dry weather flows between April 15 through October 31 and they have added several new detention basins. But it is the Irvine Company's position that most of these improvements are being made voluntarily and are not under the jurisdiction of the CCC to require.

The Irvine Company takes the position that the LCP policies place responsibility for impacts to water quality solely in the hands of the Regional Water Quality Control Board as described in the revised project description provided by Andriette Culbertson to Teresa Henry.

> "The certified LCP contains certain policies related to the Category C ESHA, which exists offshore. It is in this section that the LCP requires protection of the water quality in marine resource areas by reference to the policies in the LCP concerning runoff (Subchapter K). There are no additional policies referring to water quality in the LCP, and this subchapter defers protection of water quality in marine resource areas to the Regional Water Quality Control Board."

-Letter from Andriette Culbertson to Teresa Henry, dated March 7th,2000, re: Newport Coast Appeal; Revised Project Description for *de novo* Coastal Development Permit. pg. 7.

Failure of Regional Water Quality Control Board to Review Revised Project Despite Direct Charges to the ASBS

Unfortunately, the Regional Water Quality Control Board has opted not to review this newly revised project. How can this be? Well, in fact, when the RWQCB first reviewed the original project, they recommended denial based on direct discharges to the ASBS which are impermissible under the Ocean Plan. The State Board overruled the RWQCB saying that as long as the discharges were going

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into the creeks first – they did not qualify as direct discharges to the ASBS. This conclusion was reached despite the fact that the Irvine Company's own consultant addresses the existence of at least 2 culverts, one of which will receive portions of the stormwater runoff from the appeal area,that discharge directly to the ocean:

> "A total of 10 culverts (installed during the construction of PCH) exist under PCH. In the post-development scenario, ***the only PCH culverts which will discharge project storm flows*** will be the Los Trancos Canyon 9' x 10' arch, the 30-inch RCP below Drainage Area A, ***the 3' x 4' RCB below Drainage Area Br,*** the 24" RCP below Drainage Area C and the Muddy Canyon 6' x 8' arch. Refer to Figure 2. Of these five culverts, only two, the 3' x 4' RCB below Drainage Area Br and the 24"RCP below Drainage area C, are outside of the CC appeal area and are not proposed for alteration. ***These two culverts discharge to the ocean without passing through a tributary creek.*** However, as previously stated, these two culverts are associated with construction areas outside of the scope of the CC appeal."
>
> -Newport Coast Planned Community, Proposed Runoff Management Plan Hydrologic Analysis, April 2000, p.1 Prepared by Tettemer and Associates Inc.

Though it is difficult to follow the exact course of the runoff from the appeal areas, it *appears* from Tettemer's description that at least a portion of the runoff from 4b in the appeal area will discharge into drainage area Br which *appears* to drain into the 3' x 4' RCB below Drainage Area Br or, in English, the box culvert that empties directly onto the beach just south of Los Trancos Creek (see map). (Further, please note that the Los Trancos Canyon 9' x 10' Arch cited above is actually the public accessway from the State Park Beach parking lot across PCH.)

> "The proposed plan includes the following changes to the originally recommended RMP.....
>
> - The runoff from the lotted area portion of drainage area M2 (Planning Area 4B) has been rerouted to drainage area B, now labeled as ***Area Br.***" (see attached map)
>
> -Ibid. p.4, bullet point 5

Flawed Monitoring Study of Water Quality Impacts from Appeal Area

The end result was that the RWQCB issued a waiver for the original project and declined to review the revised project. At the same time, the RWQCB left in place a previously approved monitoring study to determine the water quality impacts from the appeal area.

Dr. Ford, was once again brought in to do the monitoring study on behalf of the Irvine Company. Incredibly, Dr. Ford's initial study scope again did not include Los Trancos Creek, a flagrant omission that the RWQCB later corrected. Despite the RWQCB's addition of Los Trancos Creek, Dr. Ford's monitoring study is already so flawed that we have no confidence that it will produce any reliable information by which to gauge the impacts on the creeks, and the waters of the ASBS.

How flawed is Dr. Ford's study? To start, the 'baseline measurements' that Dr. Ford has established from which to measure the post development water quality impacts from the appeal area were done during the ongoing grading and construction of areas 3A and 3B. As evidenced by the video compiled by the Orange County CoastKeeper and submitted to the CCC, the impacts from the construction phase alone have created extensive sediment plumes in the waters of the ASBS.

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Second, the control that Dr. Ford selected as a comparison, Emerald Canyon, is an already developed watershed that bears little relation to the relatively undisturbed watershed that Muddy Creek and Los Trancos represent.

And finally, in an inexplicable failure to grasp the meaning of a baseline monitoring study, the Regional Board openly discussed the possibility of significantly scaling back the scope of the study since Dr. Ford, once again, assured them that there were no significant water quality impacts. In a classic case of the fox guarding the hen house, Dr. Ford has himself predicted Irvine's runoff measures will be very effective and that they will result in no significant negative adverse effects on water quality:

> "Predictive evaluations by Ford (1999) and PBS&J (1999b-c) indicate that these runoff management measures will be very effective, (sic) and that they will result in no significant adverse effects on water quality and ecological characteristics of the freshwater watersheds or the adjacent marine environment. The primary goal of the monitoring studies described here will be to characterize and evaluate these potential effects."
>
> -Dr. Richard Ford's Water Quality Monitoring Study Plan for Runoff from Crystal Cove/Newport Coast Phases IV-3 & IV-4 Project

CCC Water Quality Actions Not in Conflict with SWQCB or RWQCB

While the actions of the SWQCB and the RWQCB are regrettable and still under appeal, the fact that the RWQCB has opted not to review this revised project based on the unstudied and, therefore unsubstantiated assumption that the Irvine Company has made 'improvements' that will lessen any impacts actually works in the Commission's favor and strengthens its ability to condition this project to protect water quality. Section 30412 of the Coastal Act which lays out the CCC's role when it comes to water quality makes it clear that the CCC cannot take any action that is in conflict with a SWQCB or RWQCB determination. The RWQCB's refusal to analyze and review this ***newly revised project*** renders the question of conflict between the two agencies moot.

Los Trancos and Muddy Creek are USGS Blue Line Streams Primarily Defined As Category A ESHA

The standard of review for this project is the certified LCP. And while the LCP is unquestionably a somewhat dated document that does not reflect what the CCC would now require in terms of water quality protection policies, its policies can still be interpreted to ensure that the natural function of the creeks is protected and that water quality impacts to the ASBS are avoided. It is these LCP policies that speak to the requirement that construction and post development rates for runoff, sedimentation, and erosion approximate as closely as possible the natural rates that existed pre-development (see attached letter prepared by the Lawyers for Clean Water for the Orange County CoastKeeper, dated 7/20, for a detailed analysis of the relevant LCP policies).

Central to this tenet is the fact that the majority of Los Trancos and Muddy Creeks are USGS blueline streams and are primarily defined in the LCP as Category A ESHA (see map, The Newport Coast Local Coastal Plan 2nd Amendment, EXHIBIT I, attached). Under the certified LCP, Category A ESHA is afforded the maximum protection, which states that:

D. CATEGORY "A" and "B" Environmentally Sensitive Habitat Area Policies
1. Except for the ESHA B located in Planning Area 4A, ***the natural drainage courses and natural springs will be preserved in their existing state.***

Ex 42
P 72

The exceptions that follow in D.1.A-G for the most part place limits on the type and extent of development that can be placed in or adjacent to Category "A" and "B" ESHA. No exception is made that allows the natural drainage courses to be irretrievably altered from an intermittent stream to a perennial stream or that allow the degree of erosion, runoff, or sedimentation to exceed the pre-development condition which would represent a significant alteration of the stream itself.

As Category A ESHA, the CCC needs to focus on what the 'existing' natural state of the creeks is and ensure that any runoff plan that is accepted as part of the overall project approval represents the alternative that is most likely to preserve each drainage course in its 'existing' state.

It is our contention that the revised plan before you could be further modified to achieve greater protection of Crystal Cove and its tributaries.

Lack of Cumulative Impacts Analysis

If left unchallenged, at build out Los Trancos and Muddy Creek will receive the runoff from 2 golf courses, 2600 homes, and 1100 resort units in addition to several other commercial/recreational entities and will funnel that runoff onto Crystal Cove State Park Beach and into the waters of the ASBS. Yet, despite the massive scope of the development at Crystal Cove that includes the appeal area, there has been NO CUMULATIVE IMPACTS ANALYSIS done to determine whether or not the LCP policies that seek to protect water quality will be met as a whole.

The Irvine Company argues that contrary to the assertions in the LCP, that the beach does not get its sand from the watershed. What if they and their consultants are wrong? The Irvine Company further asserts that that there will be no negative water quality impacts from their project. What if they and their consultants are wrong? They have been wrong before when they failed to account for the negative impacts of the run off from the Pelican Hills Golf Course on Los Trancos Creek. If they are wrong here, the public stands to lose the opportunity to experience what has become an all too fleeting experience in Orange County – coastal access to a relatively untarnished and pristine beach environment. To say that there is NO MARGIN FOR ERROR in these last stages of the approval process is to vastly understate the scenario that Crystal Cove faces.

A State of the Art Water Quality Program

Irvine has asserted that its water quality effort for the Crystal Cove Project is "***unparalleled in the State***' and '***unprecedented and exhibits compliance with water quality objectives of the Coastal Act far in excess of anything previously considered by any agency in it s previous consideration of this or any other coastal project.***"

-Letter from Andriette Culbertson to Teresa Henry, dated March 7th,2000, re: Newport Coast Appeal: Revised Project Description for *de novo* Coastal Development Permit, pgs. 4 & 7 respectively.

With all due respect, LCP would like to point to a recent Coastal Commission decision on the Treasure Island Project in Laguna Beach. The coastal development permit issued by the CCC for the Treasure Island Project includes year round nuisance flow diversion for the project site and the 60 acre drainage area above the site, clearly defined responsibility for sewer storm drain and diversion and sediment removal systems, a 5 year stormwater monitoring plan for submission and approval by the CCC, and a revised water quality management plan for submission and approval by the CCC.

Ex 42
P 73

To that end, LCP proposes that the CCC seriously consider a more protective alternative that it believes will further reduce, if not eliminate, the impacts from this development. And we further recommend that the CCC require independent, third party, peer-reviewed monitoring to ensure that the LCP policies that are designed to protect water quality, beach replenishment and the ASBS marine environment are actually met over the long term.

Sincerely,

Susan Jordan
Board Member

Ex 42
P 74

Golf Course Is Fined for Discharges

■ Newport's Pelican Hill assessed $148,000 penalty for illegally sending recycled water into the ocean off Crystal Cove.

By SEEMA MEHTA
TIMES STAFF WRITER

Pelican Hill Golf Course in Newport Beach was fined $148,000 Friday for illegally discharging recycled water into the ocean off Crystal Cove, state water officials said.

"Environmentally, it probably didn't have that much effect, but it's very serious due to the magnitude of the discharges, the fact they weren't reported and they were repeated," said Kurt Berchtold, assistant executive officer of the Santa Ana Regional Water Quality Control Board.

Prompted by a letter from Orange County CoastKeeper, investigators learned that course operator Western Golf Properties had eight unauthorized discharges of nearly 16 million gallons of recycled water between August 1998 and January. Similar discharges occurred in 1996.

Irrigation water overflowed from two ponds into the ocean off Crystal Cove State Park, which is designated an "area of special biological significance" and protected under the 1997 California Ocean Plan.

"Certainly, we'd like to put it behind us, and we regret that it happened," said Joe Black, president of Western Golf Properties, based in Scottsdale, Ariz. "By the same token, that's a lot of money."

Black said he is not sure whether his company will appeal the fine. He said safety measures have been added since the latest incident: New valves and an alarm system have been installed, the lake level has been lowered and policies outlining proper response have been implemented.

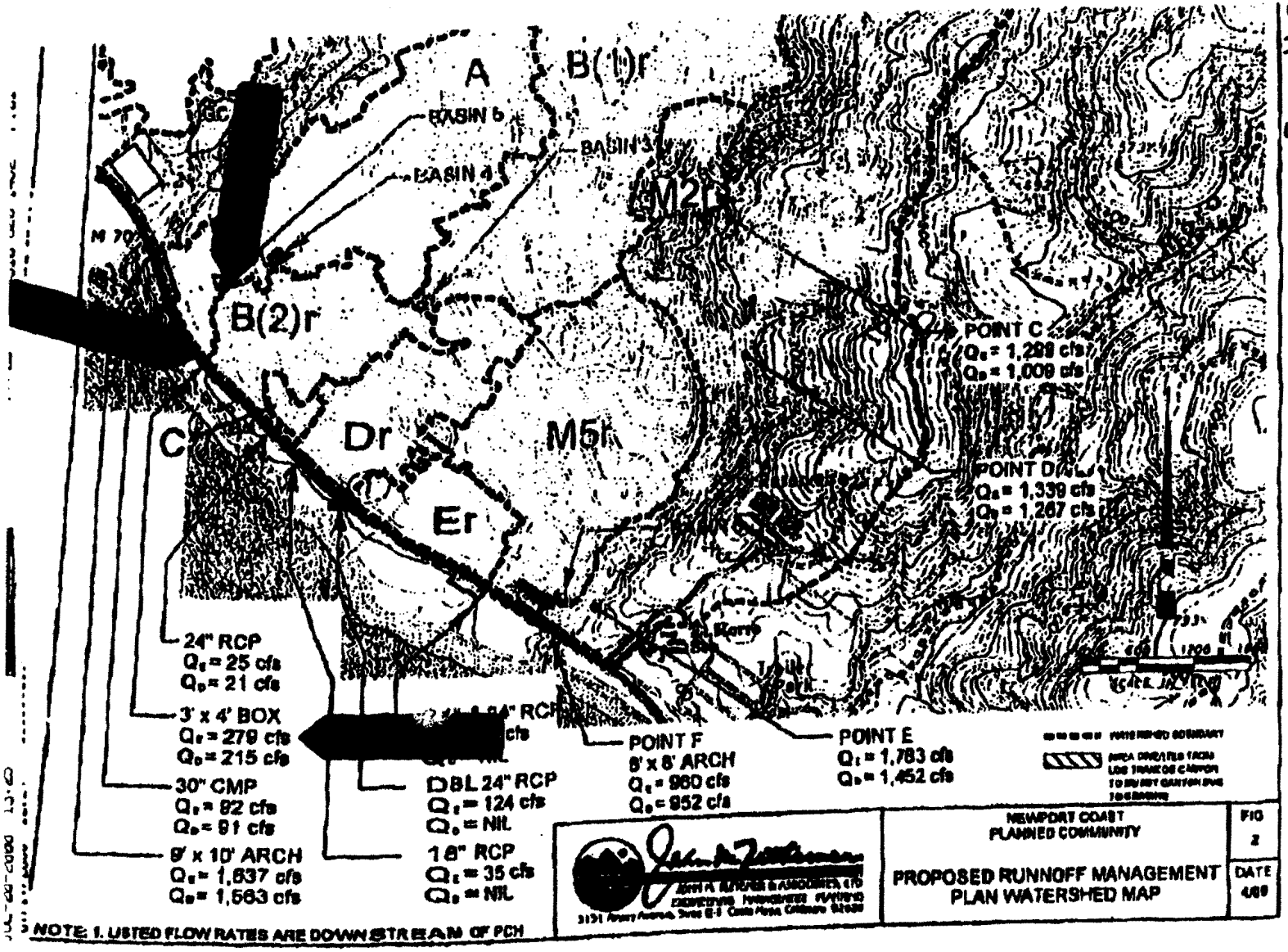
CoastKeeper, an environmental group based in Newport Beach, filed a notice in January of intent to sue the course operator, as well as the Irvine Co., the course's owner, and the Irvine Ranch Water District, the provider of recycled water that is used to irrigate the course under the federal Clean Water Act.

Berchtold said no fines were levied against the developer or the water district because investigators believe it was the operator who was negligent.

Garry Brown of CoastKeeper said the group has not sued and is in talks with Irvine Co. officials.

As for the fine, he said: "Well, it's about time. As far as the money, it's almost a moot point. It doesn't bring back the damage it caused. . . . [But] there's been an acknowledgment."

EX 42
P 7

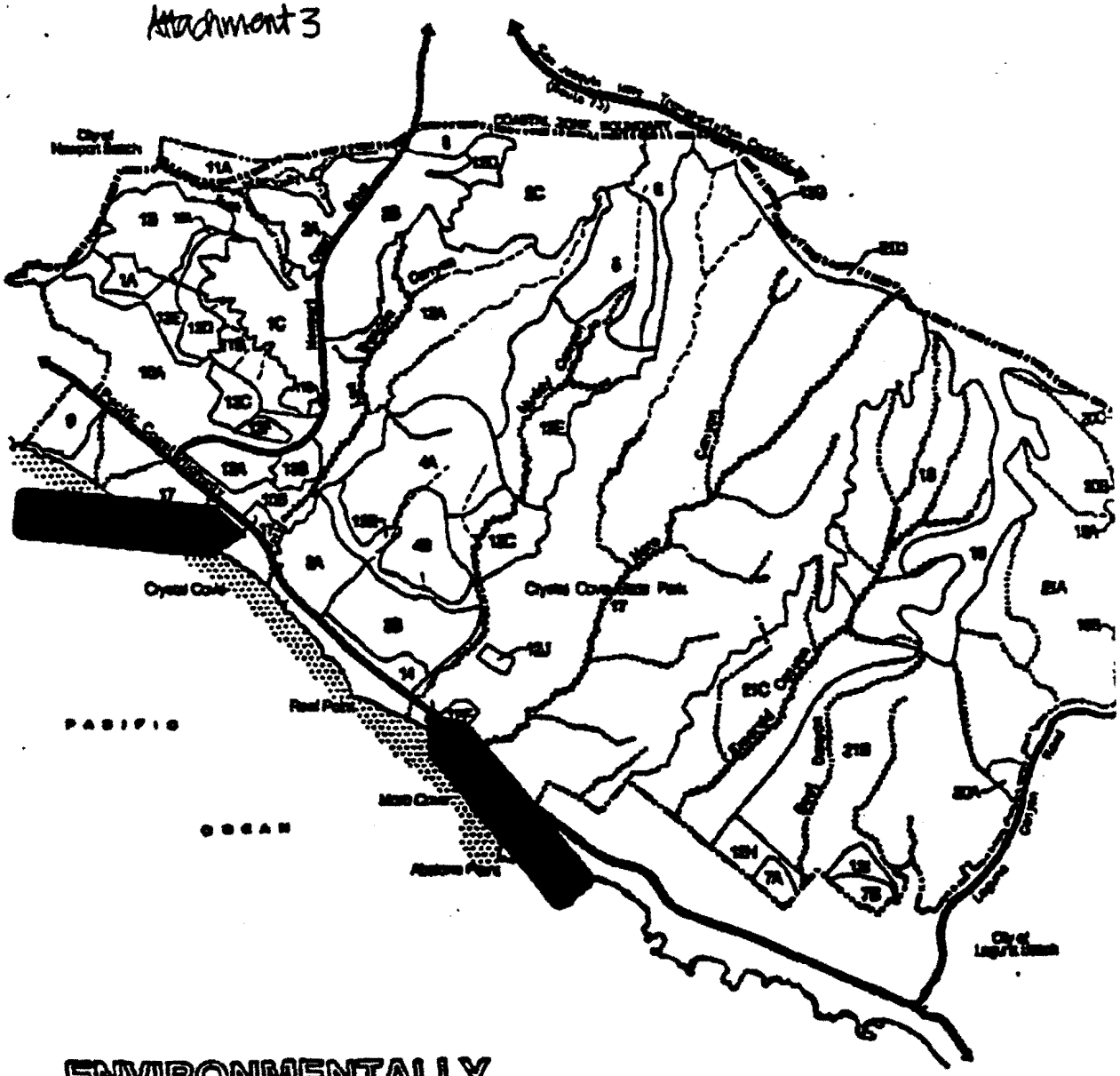


NOTE: 1. LISTED FLOW RATES ARE DOWNSTREAM OF PCH

Ex 2

TOTAL P.01

Attachment 3



ENVIRONMENTALLY SENSITIVE HABITAT AREAS - Second Amendment

Exhibit

The Newport Coast Local Coastal Program

LEGEND

- CATEGORY A - DRAINAGE COURSE/RIPARIAN VEGETATION
- CATEGORY B - DRAINAGE COURSE
- CATEGORY C - COASTAL WATERS
- CATEGORY D - DRAINAGE COURSE
- COASTAL ZONE BOUNDARY
- PLANNED COMMUNITY BOUNDARY
- PLANNING AREA BOUNDARY
- PLANNING AREA

Note: Category D ESHAs have been dated in areas with previously approved Coastal Development Permits or permitted by land use policies and mitigated by the Riparian Habitat Creation Program.

Ex 4a
P 77

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DANA LATHAM (1898 - 1974)

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RECEIVED
JUL 25 2000
CALIFORNIA
COASTAL COMMISSION

July 24, 2000

FILE NO. 016709-0287

VIA FEDERAL EXPRESS

Mr. Jack Gregg
California Coastal Commission
45 Fremont Street, Suite 2000
San Francisco, CA 94105

Ms. Teresa Henry
District Manager
California Coastal Commission
200 Oceangate, 10th Floor
Long Beach, CA 90802-4302

Ms. Carrie Bluth
Coastal Program Analyst, Water Quality Unit
California Coastal Commission
200 Oceangate, 10th Floor
Long Beach, CA 90802-4302

Re: The Irvine Company - CoastKeeper Video Briefing Package

Dear Mr. Gregg, Ms. Henry and Ms. Bluth:

Enclosed please find a revised version of the above-referenced briefing package, provided to replace the e-mail version that was forwarded to you on Friday. The briefing memo was revised to: 1) finalize timestamps from the video; 2) correct certain acreages associated with the catchments to the creeks and watershed areas; and 3) indicate that a temporary weir structure was present within the Muddy Canyon Creek stream channel upstream of the project site at the time of the March 5 and 8 storms. In addition, the enclosed version includes the referenced attachments.

We also have enclosed a copy of materials dated February 24, 2000, submitted by The Irvine Company to the Regional Water Quality Control Board for the Santa Ana Region. We are providing these materials as they offer additional information regarding storm flows from

the project site. Although the storms that are the subject of this RWQCB, submittal took place before those depicted in the CoastKeeper video, the photographs related to them indicate turbid water in Los Trancos Canyon Creek upstream of the project site. (Upstream conditions in Muddy Canyon Creek were not captured in the photographs submitted to the RWQCB.)

Feel free to contact either Roberta or myself if you should have any questions, or if we can be of any further assistance.

Very truly yours,

Paul N. Singarella
of LATHAM & WATKINS

Enclosures
cc: Roberta Marshall
Monica Florian
Andi Culbertson

Ex 43
P 2

BRIEFING PACKAGE REGARDING
COASTKEEPER VIDEO OF LOS TRANCOS AND MUDDY CANYON CREEKS
AND THE NEWPORT COAST NEARSHORE ENVIRONMENT

A video taken by CoastKeeper on February 23, March 5, and March 8, 2000, shows conditions in the lower reaches of Los Trancos Canyon and Muddy Canyon Creeks and the nearshore ocean along the Newport Coast soon after rainfall. Runoff from Beach Town I,[1] currently under development by The Irvine Company ("TIC"), also is shown in the video.

The question has been raised as to whether the video shows elevated sediment loading to the creeks and ocean from construction activities at Beach Town I. The unequivocal answer is "no." In fact, the video shows that Best Management Practices ("BMPs") at Beach Town I are working to control erosion and sediment runoff at the project site and that such sediment is not a major source of sediment to the turbid band of water that is known to occur off the Newport Coast during storm conditions.

The conclusions expressed herein are the product of expert review of the CoastKeeper video and the issues it raises by Drs. Douglas Inman and Scott Jenkins. Dr. Inman is the founding director of the Center for Coastal Studies of the Scripps Institution of Oceanography, and has over fifty years of experience in coastal oceanography and geomorphology, including waves, currents, coastal processes, and geotechnical sciences. Dr. Jenkins is a Senior Engineer at the Center, and has extensive experience in coastal processes, hydrodynamics, and the hydraulics of harbors and coastal embayments.

I. BACKGROUND.

Streams and rivers discharging into the ocean off the coast of Southern California including Orange County are known to transport large quantities of sediment into the ocean at numerous locations during certain storm conditions. Such sediment transport, and resulting turbid water, is a natural phenomenon and occurs in the absence of development. Depending on stream characteristics and storm conditions, these discharges can result in sediment discharge out beyond the surf zone, where large turbid plumes may develop. Conversely, such discharges may not escape the surf zone, because of insufficient runoff volume and velocity.

Beach Town I comprises a small percentage of the watersheds of Los Trancos and Muddy Canyon Creeks, two small creeks that discharge, when flowing, into the Newport Coast area. There are numerous other sources of sediment to the ocean in this area. Turbidity off of Crystal Cove can come from as far north as the Santa Ana River and as far south as San Juan Creek. (*See* attached satellite image from a 1998 pre-development storm, provided to illustrate regional sediment sources.)[2] In fact, the Santa Ana River, San Juan Creek and the Newport

---

1 Beach Town I and the development thereof is not part of the project before the California Coastal Commission in the appeal. Rather, Beach Town I is the development between the Pacific Coast Highway and the project that is before the Coastal Commission.

2 The satellite image is from March 1, 1998, several days after a storm that was significantly larger than the storms in the CoastKeeper video. It is not being provided to suggest that conditions during the

Ex 43
P 3

Bay/San Diego Creek complex are the predominant sources of fine sediment causing turbulent plumes in the region. A major source of local sediment is the Buck Gully watershed.

II. THE COASTKEEPER VIDEO.

There are certain key sequences in the video that must be reviewed carefully in order to tell anything of consequence with respect to the influence of the project on sediment yield. The following observations, explained further below, are based on expert review of the video:

- The only time when the video focuses on actual project runoff into Los Trancos Creek (approx. timestamp 2:21, see attached still image) shows project runoff to be clearer than the flow already in the creek.

- The only time when the video focuses on actual project runoff into Muddy Canyon Creek (approx. timestamp 8:26) shows project runoff to be of turbidity similar to the flow already in the creek.

- The video contains no evidence that sediment discharged into the ocean from Los Trancos or Muddy Canyon Creek was greater because of project development. Rather, the video indicates that runoff from Los Trancos and Muddy Canyon Creeks did not cause the large turbid plume seen in the video to the north. *See* timestamp 6:44, attached still image thereof. In fact, at certain times the video shows clear blue ocean water immediately off of these creeks. *See, e.g.*, timestamps 5:56 (Los Trancos) and 7:18 (Muddy Creek), and attached still images.

- The video clearly shows the influence of other drainages, which are known to form a turbid band of water in the open ocean off of the Newport Coast. *See, e.g.*, timestamp 6:44.

- The video contains no evidence that project BMPs are not working. The only two BMPs shown on the video — the energy dissipater and a row of sandbags — were working as designed and intended. In order to diminish the erosion potential of runoff, the sandbags were set up to impede — not prevent — runoff and overtopping of them was expected and normal.

- The video does not show evidence of upstream conditions in Los Trancos or conditions in other local drainages, so that comparison with background and typical conditions could be made.

CoastKeeper video were the same as those in the satellite image. Rather, it is an image that simply shows the wide range of potential sediment sources in the region. This image was readily available; we are searching for images for the actual events filmed by CoastKeeper.

Ex 4:
P 4

A. **Los Trancos Canyon Creek.**

Runoff from Beach Town I discharges into Los Trancos Creek at two locations, only one of which is shown on the video. In addition, the video does not show conditions in Los Trancos Creek upstream of the project. The incompleteness of the video makes it susceptible to misinterpretation. However, important information is contained on the video.

The project discharge to the creek captured on the video is a pipe inlet just upstream and south of a pedestrian bridge in the bungalow neighborhood between Pacific Coast Highway and the beach. *See* video timestamp 2:21, a still image of which is attached. The project water discharging from this pipe is clearer than the water flowing in the creek, indicating that runoff from the project contained less sediment than that already in the creek.

The other location where the project discharges into Los Trancos Creek is immediately upstream of the tunnel through which the creek passes under Pacific Coast Highway. This discharge point is not shown on the video, despite the fact that it is readily accessible. It is likely that the clarity of runoff water at this second discharge point was similar to that shown by the video at the pedestrian bridge. This is because project BMPs for these two discharge points are similar and would be expected to be similarly effective. The runoff volume from the two discharge points also is similar, with about eight percent less project flow coming in at the tunnel than at the bridge.

Finally, the video does not show Los Trancos Creek upstream of the project. Footage of the upstream area likely would have shown turbid water in the creek prior to contact with project runoff. The Beach Town I area discharging into Los Trancos Creek is approximately 66 acres; about 21 acres of undeveloped property also drains into Los Trancos through the Beach Town I inlet pipes. At the point where Beach Town I discharges into it, Los Trancos Creek already has drained 1091 other acres, an area about 13 times the size of the total area (87 acres) entering Los Trancos through the two pipes from Beach Town I. This underscores the importance of showing upstream conditions and how the absence of showing them may have led CoastKeeper to make erroneous conclusions about project impacts.

B. **Muddy Canyon Creek.**

Beach Town I discharges to Muddy Canyon Creek just below an energy dissipater device located in the southwest corner of the Beach Town I property. Undeveloped property also drains to Muddy Creek through the energy dissipater. The video shows where this combined runoff water intersects the creek and what the upstream conditions are at that intersection. Video timestamp 8:26. What is apparent is that runoff passing through the energy dissipater is similar in turbidity to water already in the creek. It is not reasonable to conclude from the video that runoff from the site contained more sediment than what was already present in Muddy Canyon Creek.

Approximately 76 acres of developed area from the Beach Town I site drain into Muddy Creek through the energy dissipater. Runoff from approximately 69 acres of undeveloped land mixes with this Beach Town I runoff, and also drains to Muddy Creek through

Ex 43
P 5

the energy dissipater. Muddy Canyon Creek contains runoff from an area draining 893 acres at the point where the creek picks up the runoff from the energy dissipater.

Finally, during the March 5 and 8 storm events, there was a temporary weir in place in Muddy Creek just upstream of the energy dissipater. The purpose of the weir was to facilitate the sampling and testing of the water in Muddy Creek. While it is not known at this time whether this structure affected runoff velocity below the weir on the dates in question, it is identified for purposes of completeness.

C. Energy Dissipater and Sandbag BMP.

Because runoff from the project into Muddy Canyon Creek does not appear to contain sediment above background levels, the BMPs appear to be working. However, CoastKeeper has misinterpreted the row of sandbags shown on the video below the energy dissipater (video timestamp 8:07) as having failed. In fact, these sandbags were a temporary BMP that were working as intended.

The sandbags were installed during winter 2000 to abate potential erosion. The sandbags caused water to pond behind them, permitting some sediment to settle out, with excess water overtopping the bags, reducing the velocity of runoff and decreasing the potential for erosion in the area. Sandbag checkdams like the one shown in the video have the effect of reducing the velocity and energy of runoff and decreasing the potential for erosion in the area. Such checkdams are a common and widely accepted BMP.

Because the sandbags performed so well, this temporary BMP has been replaced with a permanent BMP that will achieve the same result. The permanent BMP consists of rip rap installed downstream of the energy dissipater to control erosion and protect native plant species in the area. In any event, future flows through the energy dissipater will be greatly reduced by a large detention basin that is planned for Phases IV-3 and IV-4 (the area that is the subject of the current appeal before the Coastal Commission).

D. Nearshore Environment.

The video does not show any unusual amounts of sediment reaching the coastal zone through the Los Trancos and Muddy Canyon Creeks. Turbidity from these creeks is largely contained in and limited to the nearshore circulation cell which includes the surf zone. In fact, at times the water directly offshore of the creeks is clear blue, showing no apparent effects of turbid runoff. *See* video at timestamps 5:56 (Los Trancos) and 7:18 (Muddy Canyon) and still images corresponding to these timestamps. These observations indicate that, at least during the storms filmed by CoastKeeper, the Los Trancos and Muddy Canyon Creek discharges contained insufficient momentum and sediment to break out beyond the nearshore circulation cell and form large turbid plumes, such as the one apparent to the north in the video.

The video shows a large sediment plume north of Los Trancos Creek extending along the coast past Pelican Point to the north. This sediment is probably largely derived from Buck Gully, located north of Crystal Cove, which drains a watershed about twice the size of the Los Trancos watershed. Plumes from Buck Gully can be carried by tidal currents to the Crystal Cove area. Tidal data for the dates of the video indicate that the tidal flow in the area was from

Ex 43
P 6

north to south for relevant times. The shape of the ocean turbid plume and the information on nearshore currents are consistent with a plume progressing southward from the Buck Gully area. In addition, on a subsequent date, Dr. Scott Jenkins videotaped a similar condition during which nearshore turbidity north of Los Trancos clearly was coming from Buck Gully. *See* below.

Other sources of sediment also may be contributing to the ocean turbidity observed in the video. Major sediment sources for the area are the Santa Ana River, Newport Bay and San Juan Creek, each of which can contribute to ocean turbidity off Crystal Cove. Smaller but more local sources of sediment include Moro Canyon and other small drainages to the south.

The video does not appear to show any significant sediment loading from Newport Bay. However, while sediment may not have been emanating from the bay at the time of the video, it certainly may have done so earlier and during the storms. Sediment from this bay is known to be significant and can travel south towards Crystal Cove.

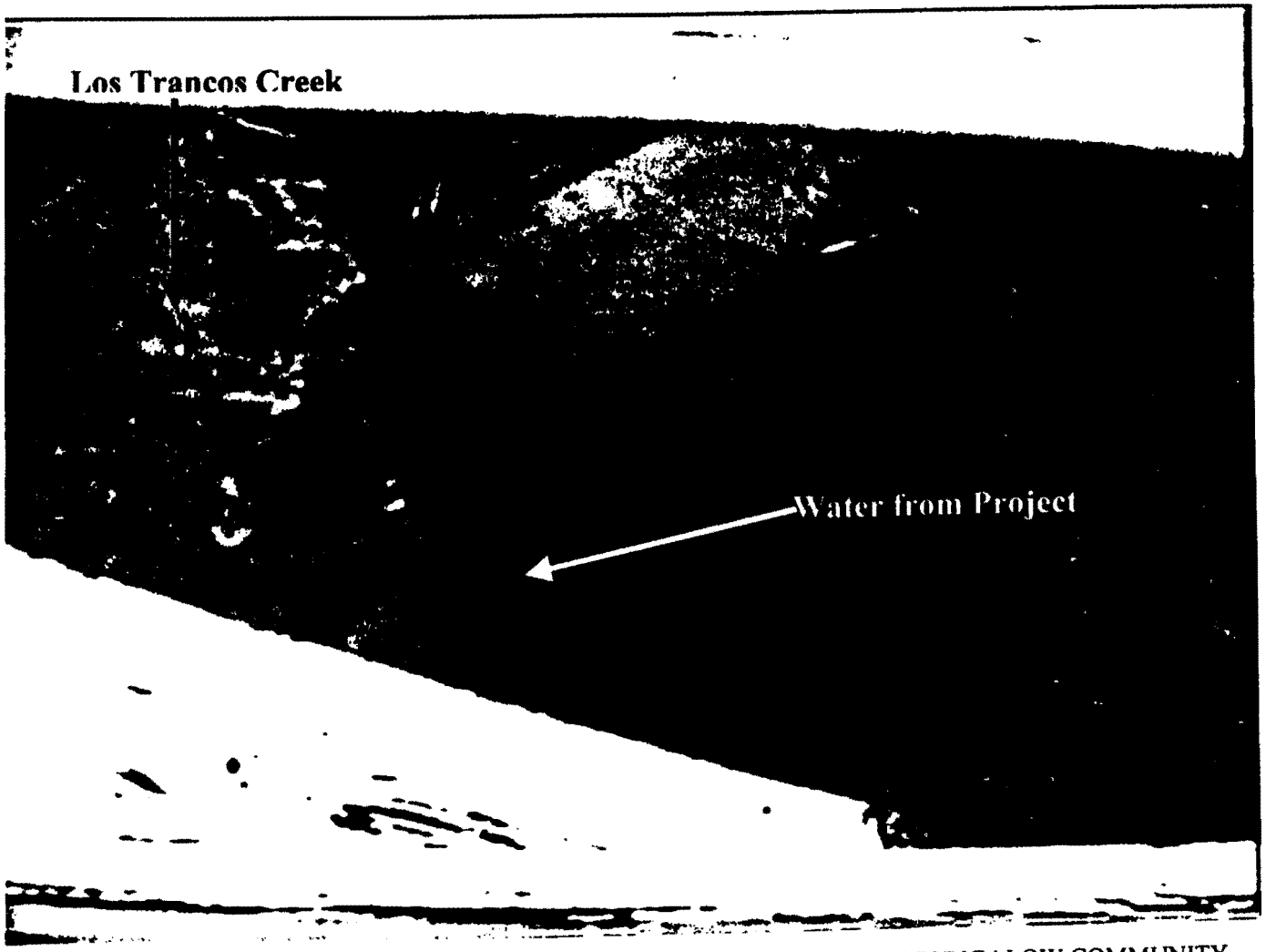
III. APRIL 18 VIDEO BY DR. SCOTT JENKINS.

Dr. Scott Jenkins made a video of the Crystal Cove area on April 18, 2000, also after a storm event. Dr. Jenkins observed conditions on April 18 that he believes are similar to those in the CoastKeeper video. The sediment which he observed on April 18 largely derived from Buck Gully. Dr. Jenkins' observations on April 18 were that runoff from Los Trancos and Muddy Canyon Creeks remained in the surf zone circulation cells and did not extend into coastal waters.

Ex 43
P 7

Satellite image from March 1, 1998 showing turbid band of ocean water (yellow & green) along Orange County Coast including offshore of project.

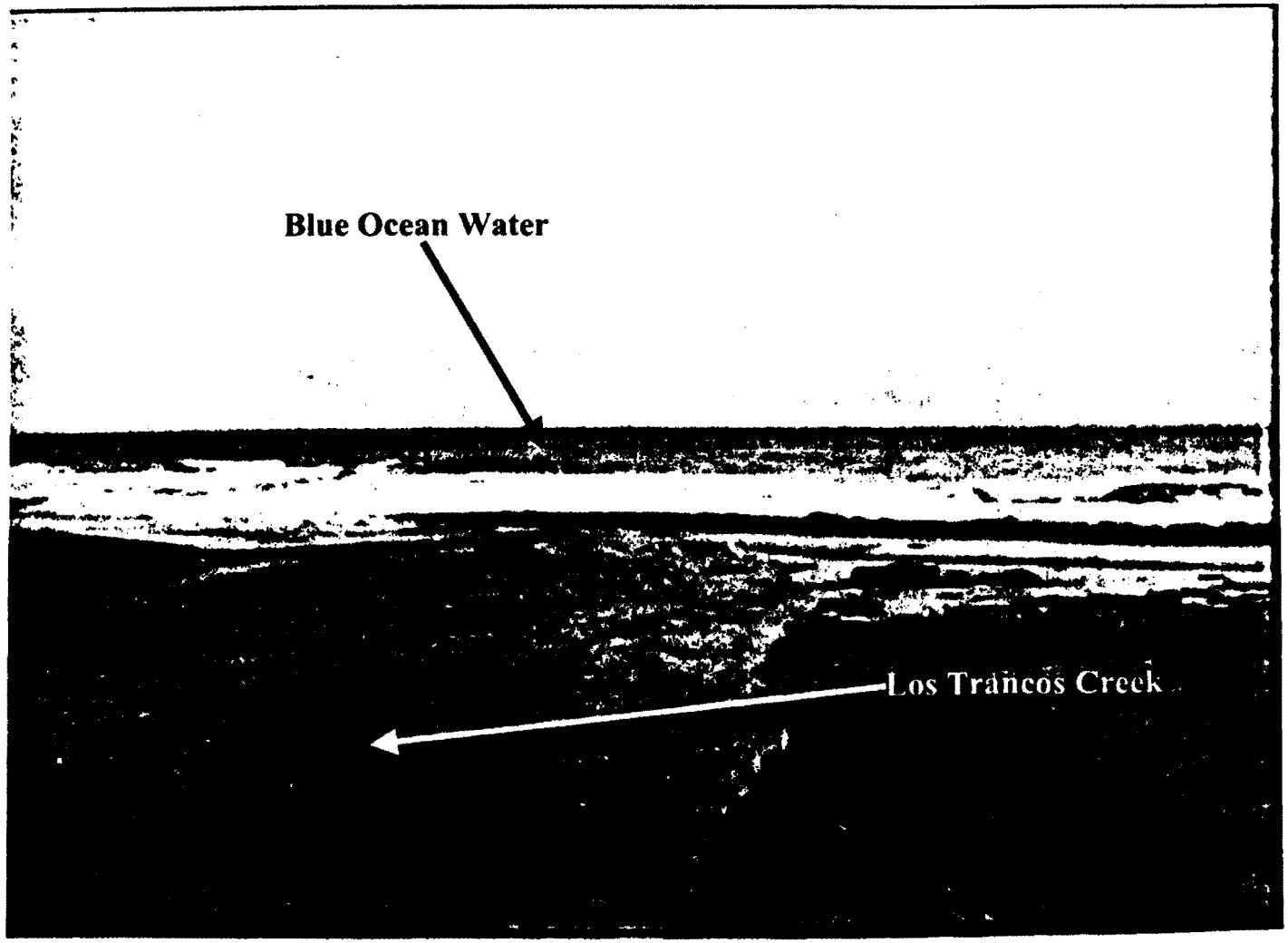
Ex 43
P 8



LOS TRANCOS CREEK IMMEDIATELY NORTH OF PEDESTRIAN BRIDGE IN BUNGALOW COMMUNITY, SHOWING PIPE INLET FROM BEACH TOWN I.
(CoastKeeper Video Timestamp: 2:21)

Images taken from the video provide less clarity than the video itself.
We are endeavoring to have higher quality images produced.

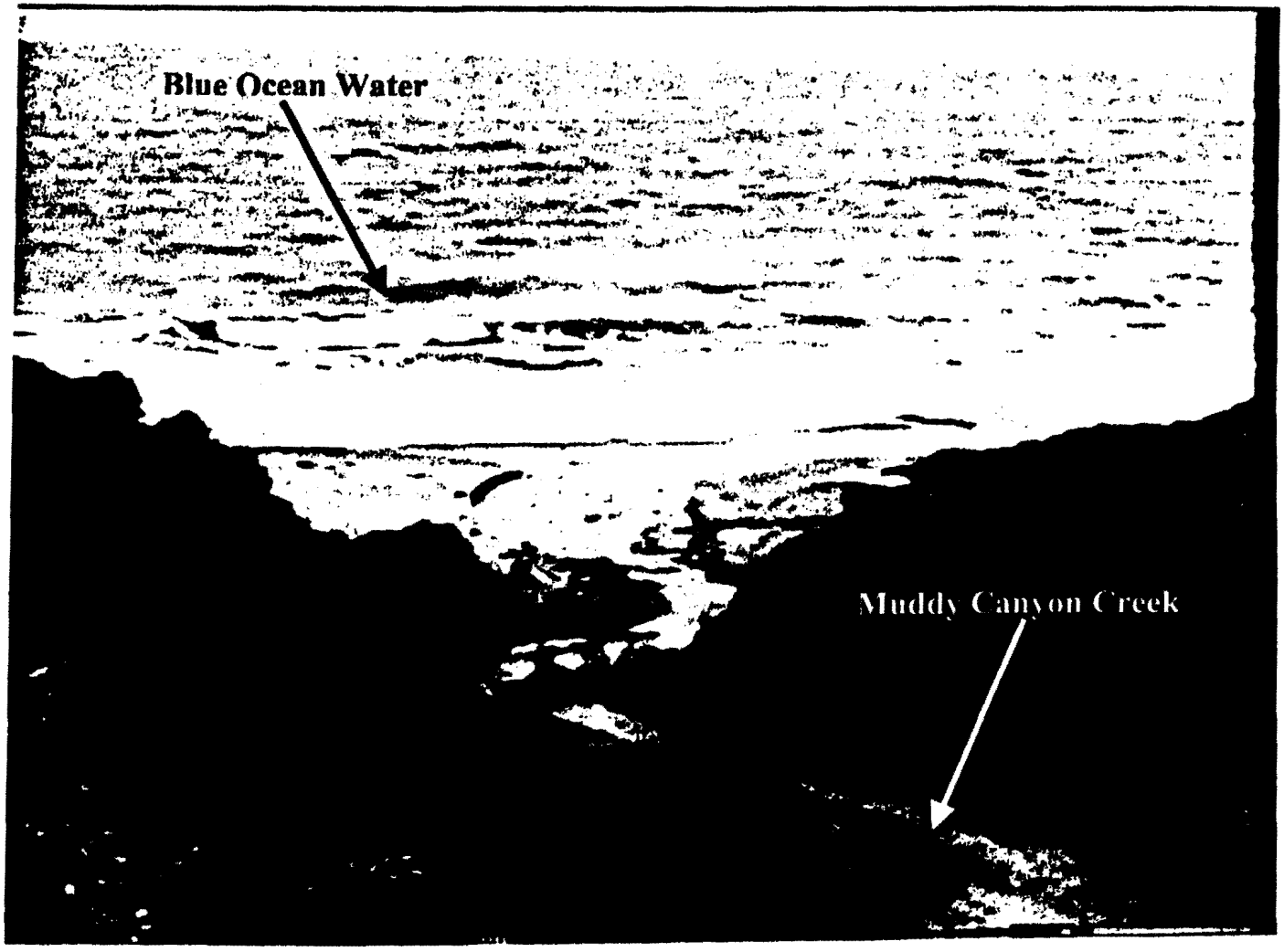
D 8
5 53



LOS TRANCOS CREEK WHERE IT ENTERS THE OCEAN.
(CoastKeeper Video Timestamp: 5:56)

Images taken from the video provide less clarity than the video itself.
We are endeavoring to have higher quality images produced.

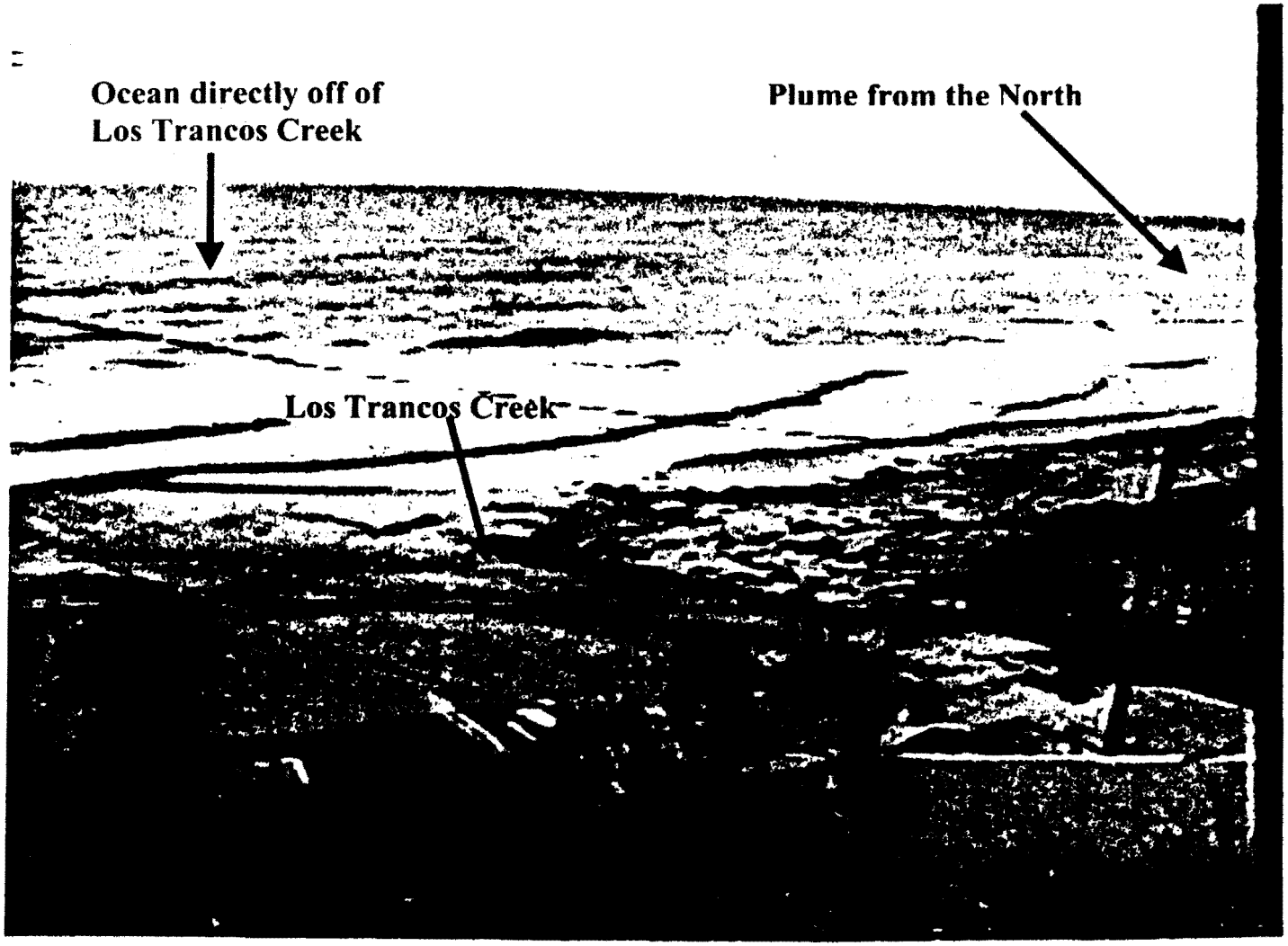
Ex 10



MUDDY CANYON CREEK WHERE IT ENTERS THE OCEAN.
(CoastKeeper Video Timestamp: 7:18)

Images taken from the video provide less clarity than the video itself.
We are endeavoring to have higher quality images produced.

Ex 3



COASTLINE LOOKING NORTH OF LOS TRANCOS CREEK.
(CoastKeeper Video Timestamp: 6:44)

Images taken from the video provide less clarity than the video itself.
We are endeavoring to have higher quality images produ

IRVINE COMMUNITY DEVELOPMENT COMPANY

February 24, 2000

Ms. Joanne Schneider
California Regional Water Quality Board
3737 Main Street, Suite 500
Riverside, CA 92501-3339

Re: Newport Coast – Phase IV-1 and IV-2 Erosion Control Effectiveness

Dear Joanne:

Attached please find a memo from Jim Lorman (Senior Vice President of Construction) to me regarding the effectiveness of the erosion and sediment control BMP's on the Newport Coast – Phase IV-1 and IV-2 (Crystal Cove).

Please call me if you have any questions.

Sincerely,

Roberta Rand Marshall
Vice President

Attachments

cc: File – 401 Permit ✓

550 Newport Center Drive, P.O. Box 6370, Newport Beach, California 92658-6370 (949) 720-2000
A subsidiary of The Irvine Company

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IRVINE COMMUNITY
DEVELOPMENT COMPANY
A Subsidiary of The Irvine Company

Roberta Rand Marshall
Vice President
Land Development

550 Newport Center Drive
Newport Beach
California 92658-6370
Telephone (714) 720-2293
FAX (714) 720-2111
email:marshall@irvineco.com

Ex 4:
P 14

IRVINE COMMUNITY DEVELOPMENT COMPANY
INTEROFFICE MEMORANDUM

filecode:

To: Roberta Marshall

CC:

From: Jim Lorman

Date: February 24, 2000

Subject: Sediment/Erosion Control Observations; February 19 to 21, 2000

As background, during the weekly work period (Monday through Friday) the assigned Crystal Cove field construction managers (Manager Chris Ramsey - Director Bob Buckner - Construction Vice President Norm Burch) make sediment/erosion control observations prior to, during and after storm events. During weekend periods (Saturday, Sunday and holidays) the overall Newport Coast development area, which includes the Crystal Cove project, has an assigned manager who makes inspections and confirms any necessary repair of devices prior to - during - after any storm event (for the subject period this manager was Chris Ramsey).

The below represents observations made during the February 19 to 21, 2000, weekend period relative to performance of devices that were installed and rain impacts to the Crystal Cove project. The reported rainfall from the Pelican Hill Golf course station for 2/19/00 was 0.07 inches, 2/20/00 was 1.11 inches and 2/21/00 was 1.04 inches. In general, the sediment/erosion control devices performed under heavy rain events. Sediment flows were captured and the devices were maintained in preparation for the ensuing storms. The attached pictures highlight areas during a variety of storm events (2/11/00, 2/12/00, 2/17/00, 2/20/00, 2/21/00).

Saturday - February 19, 2000 by C. Ramsey

- Muddy Canyon: No runoff was noted from the site or up-canyon, but runoff occurred from the PCH down drain and storm drain. No deposits of sediment were noted.
- Crystal Heights Drive and the storm drain outlet below PCH: Street sandbags captured a minor amount of sediment, these deposits were removed by our contractor. The tract paved areas also had minor sediment deposits removed from sandbag chevrons. No sediment runoff was noted in non-paved areas.
- Los Trancos: Clean flow was noted from up-canyon at the inland side culvert. Clean flow was noted from the storm drain outlet from the northwest side of the project & PCH.
- Overall Saturday was a mild event.

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During the AM period;

* Muddy Canyon: No tract runoff was noted with the exception of PCH. No sediment deposits were noted.

* Crystal Heights Drive and the storm drain outlet below PCH: Minor amounts of sediment was captured in sandbag chevrons, the deposits were cleaned by our contractor. The tract paved areas also had sediment removed from sandbag chevrons. No sediment runoff was noted in non-paved areas.

* Los Trancos: Clean flow was noted from up-canyon at the inland side culvert. Minimum turbid flow was noted from the storm drain outlet from the northwest side of the project & PCH.

*Overall Sunday morning was a mild event with the exception of heavy winds that required our contractor to repair the screen fence contiguous with PCH.

During the PM period;

* Muddy Canyon: Same as AM.

* Crystal Heights Drive and storm drain outlet below PCH: Same as AM.

* Los Trancos: Same as AM except a higher flow of slightly turbid water noted from up-canyon.

* Overall Sunday PM was a mild to moderate event and the high winds required our contractor to repair the screen fence along PCH late into the evening.

<u>Monday</u> - February 21, 2000 by C. Ramsey

During the AM period;

* Muddy Canyon: Overnight rains caused turbid up-canyon runoff and for the first time the runoff reached the ocean. Runoff from PCH was also noted and there was clean water standing in the rip-rap pad below the dissipater. A minor rill had started to form where the manufactured earth meets the native soils prior to entering the PCH inlet. Sandbags were placed into the rill over the erosion mat to temporarily mitigate further formation of other channels.

* Crystal Heights Drive and the storm drain outlet below PCH: Sediment was captured in the paved area sandbags and was cleared by our contractor. In tract paved areas also required cleaning of sediment from sandbag chevrons. Non paved street sections required cleaning as a slight build up was noted.

* Los Trancos: Turbid water was noted from up-canyon in a moderate flow at the inland side culvert. Minimum clean flow was noted from the storm drain outlet from the northwest side of the project and PCH. A slight plume of turbid water was noted in the ocean due to increasing rain activity.

During the PM period (events of heavy rain occurred, some lasting nearly one hour);

* Muddy Canyon: Turbid water flow was noted from up-canyon. Very turbid water noted coming from the tract storm drain outlet at the dissipater. Flows from PCH, up-canyon and the tract storm drain system were heavy at times. Sediment was deposited in the rip rap retention area. A slight plume of turbid water was noted in the ocean.

* Crystal Heights Drive and the storm drain outlet below PCH: Sediment was captured throughout the day in C. H. Drive and tract paved areas. On an ongoing basis, our contractor removed as necessary sediment deposits behind sandbags and no breaches were noted at the catch basins. Sediment runoff was noted in non-paved areas. However, no breaches were noted at catch basins.

* Los Trancos - During heavy rains very turbid water was noted from up-canyon and moderate to heavy flow from the inland side culvert. Moderate flow of turbid water was noted in the storm drain outlet from the northwest side of the tract and PCH. A moderate plume was noted in the ocean.

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Archipelago Street - Sediment Protection 2/11/00

Muddy Cyn - Inland of Pctt 2/10/00

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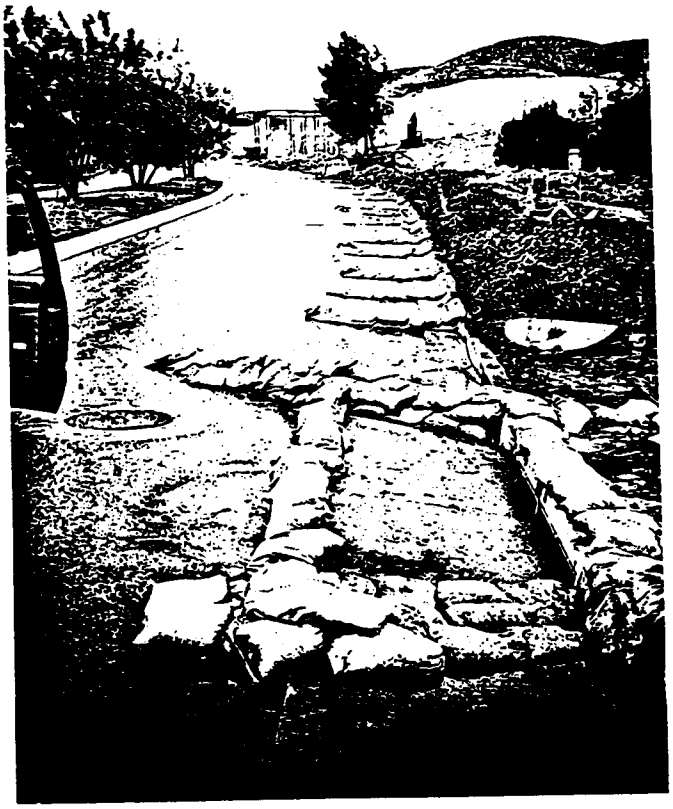
Outlet below Crystal Heights Drive - post storm 2/20/00

Muddy Canyon Creek post storm 2/20/00

Ex 4
P 18



Crystal Heights Drive
post storm
2/20/00

Muddy Cyn
in-land of
PCH
2/20/00

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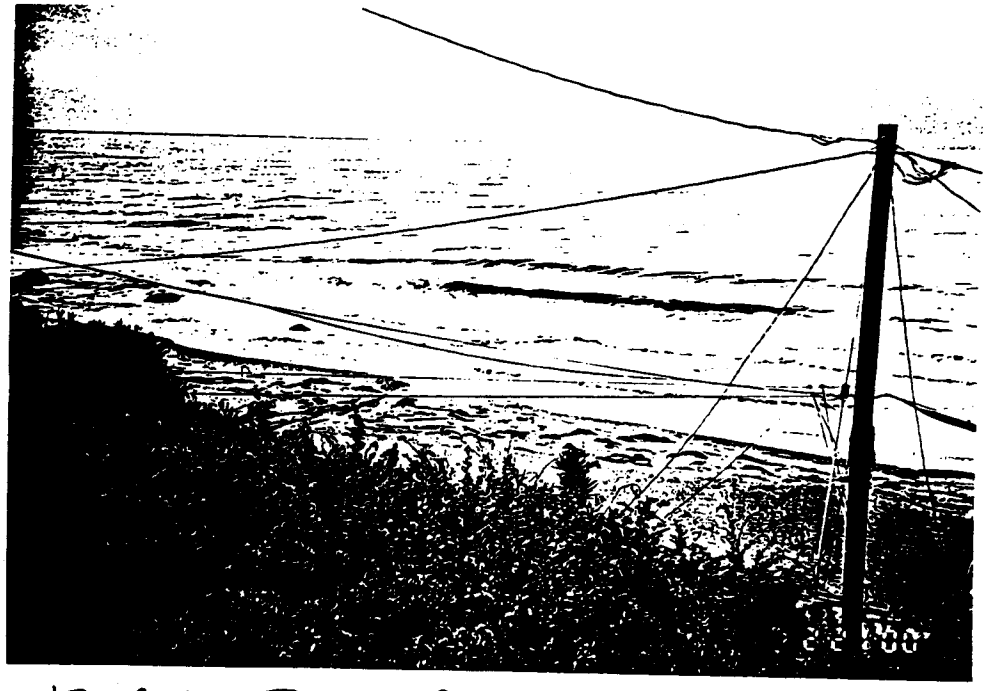
P 19

Los Trancos Creek post storm 2/21/00 (AM)



S/E of Los Trancos Creek post storm 2/21/00 (AM)

EX 4
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Crystal Heights Drive outlet post storm 2/21/00 (AM)

Muddy Canyon Creek post storm 2/21/00 (AM)

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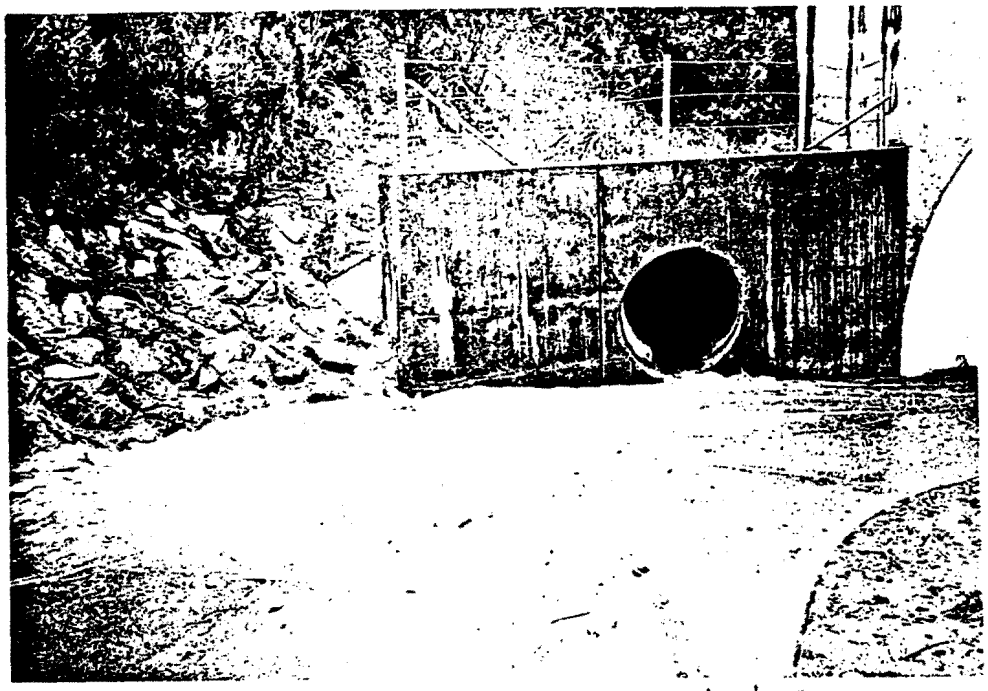

Los Trancos Creek - turbid water 2/21/00
inland of PCH (AM)

Los Trancos Creek - turbid water
inland of PCH (AM) 2/21/00

Ex 4:
P 2:

Muddy Canyon Creek inland of PCH (AM) 2/21/00

Los Trancos Creek 2/21/00 (PM)

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S|E of Los Trancos Creek 2/21/00 (PM)

Below Crystal Heights Drive 2/21/00 (PM)

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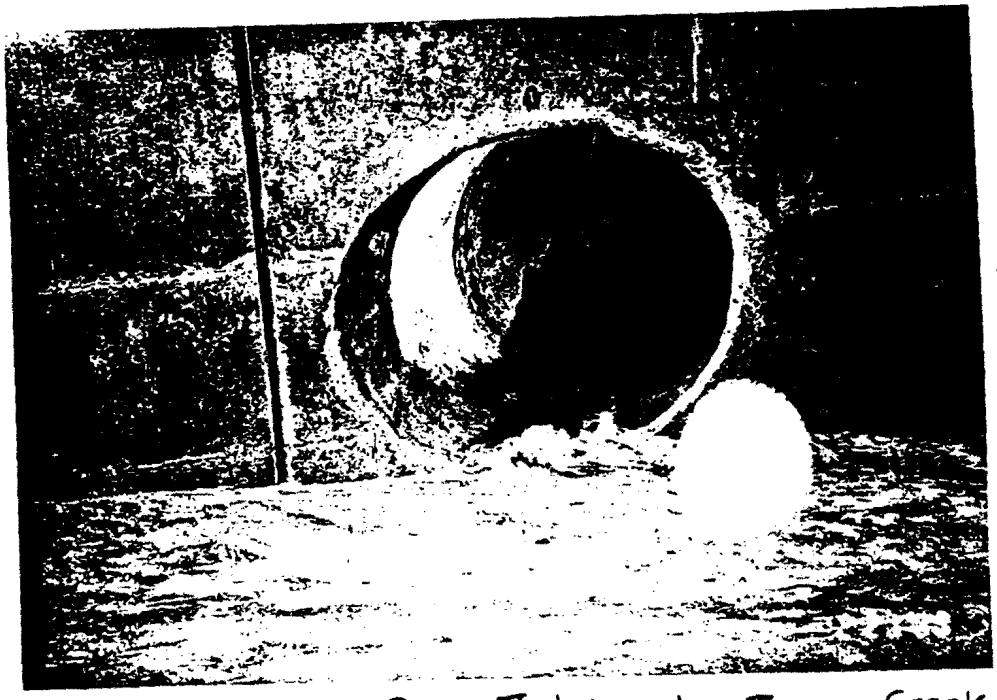
P 21

Los Trancos Creek Upstream of PCH culvert 2/21/00 (PM)
Turbid Water



Outlet pipe from Phase II-1 into Los Trancos Creek
upstream of 9x10 PCH culvert 2/21/00 (PM)

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Muddy Canyon inland of PCH 2/21/00 (PM)

Ex 4-
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Muddy Cyn Creek - Inland of PCH after storm 2/17/00

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P 2n

Los Trancos Creek post storm 2/20/00

S/E of Los Trancos Creek post storm 2/20/00

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P 28

Outlet below Crystal Heights Drive 2/17/00
after storm

Muddy Cyn Creek after storm 2/17/00

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Los Trancos Creek post storm 2/17/00

S/E of Los Trancos Creek 2/17/00

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Below Crystal Heights Drive post storm 2/12/00

Muddy Canyon Creek post storm 2/12/00

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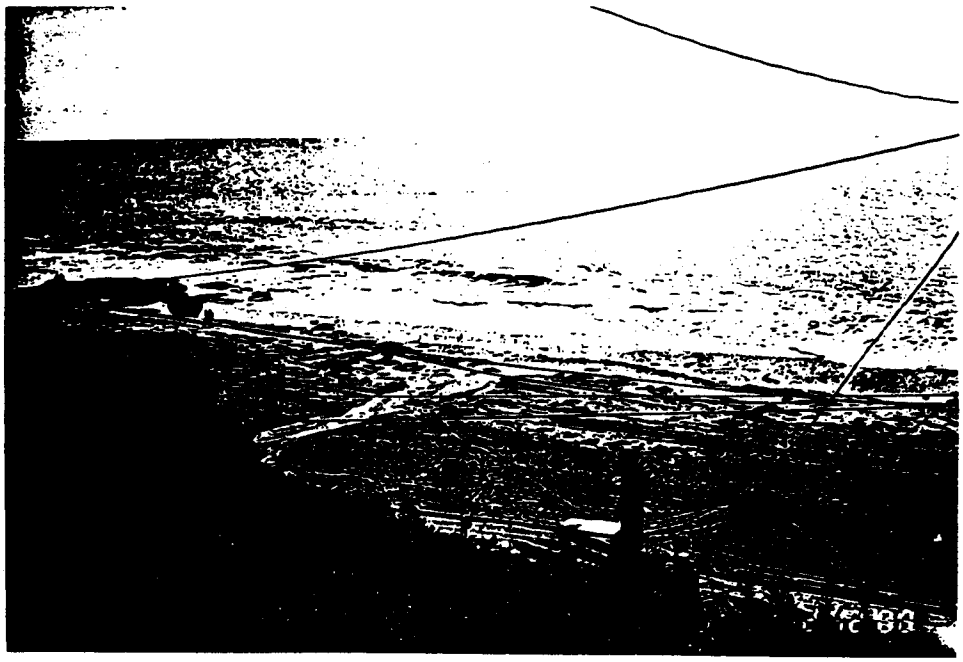
Los Trancos Creek post storm 2/12/00



S/E of Los Trancos Creek post storm 2/12/00

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Crystal Heights Drive - Sediment collection after storm.
2/12/00

PCH - Sand bag placement/replacement
2/12/00

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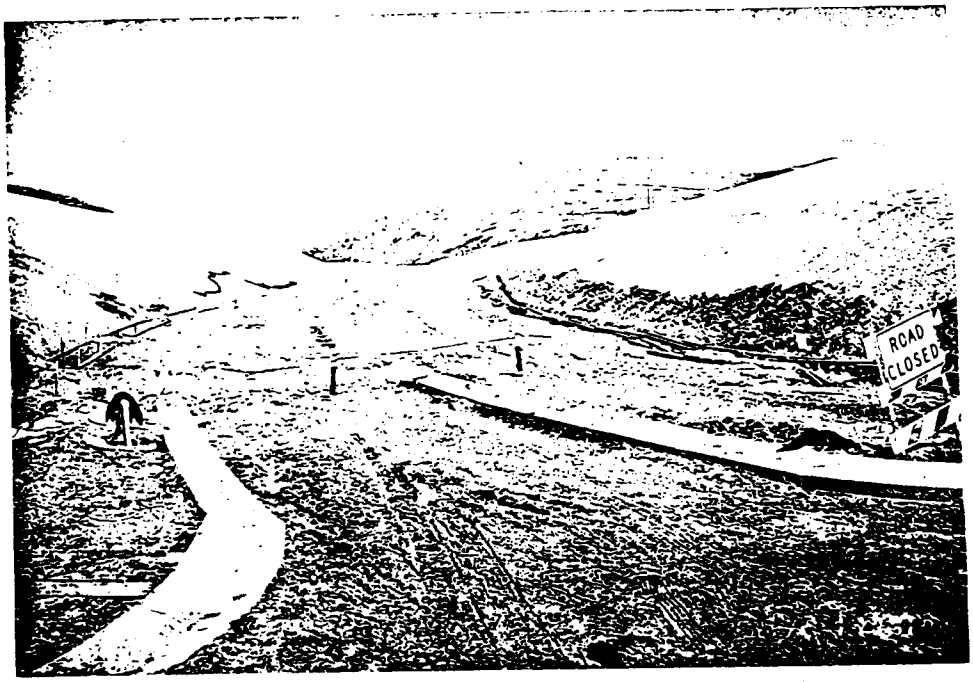
P 33



Crystal Heights Drive - Sediment protection 2/11/00

Scotia Sea - Sediment protection 2/11/00

EX 43
P 34

HUNSAKER & ASSOCIATES
IRVINE, INC.

PLANNING
ENGINEERING
SURVEYING
GOVERNMENT RELATIONS

IRVINE
RIVERSIDE
SAN DIEGO

RECEIVED
AUG 8 2000
CALIFORNIA
COASTAL COMMISSION

August 7, 2000

Ms. Teresa Henry
CALIFORNIA COASTAL COMMISSION
200 Ocean Gate, Suite 1000
Long Beach, CA 90802

Subject: **Ag Basin Berm – Crystal Cove**
Irvine Community Development Company
Appeal No. A5-1RC-99-301

Dear Ms. Henry:

As requested, the following is my opinion on what the proposed development within Planning Areas 2C, 5 and 6 will have on the existing agricultural berm located in Planning Area 12E.

The pre-development flow to the agricultural basin is 263 cfs and the post-development flow to the agricultural basin based is 149 cfs. Both flows are based on a 100-frequency storm. The duration of the storm will increase from 19 hours pre-development to 40 hours post-development. The development proposes to control the peak discharge by constructing two retention basins and a system of storm drain pipes to control erosion and to provide flood protection for the proposed development. An energy dissipater will be constructed at the terminus of the 54-inch reinforced concrete pipe prior to discharging the storm flows to Muddy Canyon. The energy dissipater will be designed to reduce the velocities within the pipe to velocities that would normally occur within Muddy Canyon. The flows will then be conveyed through a riparian enhancement located within muddy canyon prior to entering the existing agricultural basin.

The agricultural berm was constructed many years ago and was not certified by a civil engineer. The agricultural berm has withstood many storms and a considerable amount of erosion has occurred around the berm. If the drainage shed was left in its natural condition, some additional erosion from storm runoff would occur. It is my opinion, although the duration of the storm has increased, the peak discharge has been substantially decreased and therefore the proposed development will not have an adverse affect on the agricultural berm once the retention basins, storm drain system, and energy dissipater have been constructed.

Should you have any questions or need any additional information, please do not hesitate to call.

Very truly yours,

HUNSAKER & ASSOCIATES IRVINE, INC.

Richard Hunsaker

Richard Hunsaker
President

RH:tl
xc: Roberta Rand Marshall, Irvine Community Development Company
Andi Culbertson, Culbertson, Adams & Associates
W.O. 949-140KT (f\c\wo\949\140KT L4-rh.doc)

FOUNDING PARTNERS:
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TOM R. McGANNON
JOHN A. MICHLER
DOUGLAS G. SNYDER

PRINCIPALS:
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Ex. 44
p. 1 of 2

S

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OTHER OFFICES:
R .KELEY
FI. RICHMOND
RIVERSIDE
ROCKLIN

August 4, 2000

Teresa Henry
California Coastal Commission
South Coast Area
200 Oceangate, Suite 1000
Long Beach, California 90802-4302

Subject: Appeal No. A5-RC-99-301 - Diversion of Nuisance Runoff in Planning Area 5

Dear Ms. Henry:

This letter addresses your recommendation for deletion of the low flow, nuisance runoff discharge point that was originally planned for in the southwestern portion of Planning Area 5. The nuisance runoff from this six inch pipe would have provided water to the proposed 0.06 acre riparian enhancement area in the ephemeral tributary o Muddy C ny .

It is our understanding that this flow will now be diverted to the 54 inch storm drain that outlets to the riparian enhancement area at the head of Muddy Canyon, and ultimately into the existing agricultural basin. Based on the nuisance runoff estimates provided by the project engineers, the water budget analysis prepared by Douglas Hamilton, and our assessment of the terrain and vegetation in this area, I am confident that all of the dry season, nuisance flow from Planning Areas 2C, 5, and 6, including the flow that will be diverted from the previously planned six inch drain, will be retained in the agricultural basin. Much of this water will be taken up by the evapotranspiration process, and the balance will percolate into the groundwater through the porous substrate of the agricultural basin. Of course, the 0.06 acre riparian enhancement will no longer be feasible.

I hope this letter provides the information you require. Please call me if I can be of any further assistance.

Sincerely,

LSA ASSOCIATES, INC.

Art Homrighausen

Art Homrighausen
Princi al

8/4/00<<P:\JC1\736\Coastal Commission\henry.ltr.wpd>>

Ex. 44
p. 2 of

TRIBUTARY AREA AND LOW FLOW DIVERSION MAP

Ex 45

DEPARTMENT OF PARKS AND RECREATION

Rusty Areias, *Director*

Orange Coast District
3030 Avenida del Presidente
San Clemente, California 92672

August 2, 2000

RECEIVED
AUG 4 2000
CALIFORNIA
COASTAL COMMISSION

Sara Wan, Chair
California Coastal Commission
200 Oceangate, 10th Floor
Long Beach, California 90802-4416

Re: Crystal Cove Appeal – A-5-IRC-99-301

Dear Ms. Wan:

Thank you for the opportunity to comment on the proposed Crystal Cove Development under appeal by the California Coastal Commission. Since the January 12, 2000 de novo hearing, the California Department of Parks and Recreation, The Irvine Company and the Coastal Commission staff have worked cooperatively towards refining the key components of the proposed project. Our efforts focused on providing additional protections for the natural, cultural and recreational resources found at Crystal Cove State Park and our primary goal is to ensure the environment within the Crystal Cove State Park remains unchanged by the development of the final phase of the Newport Coast project. As stewards of the public lands at Crystal Cove State Park, our review and comments are based on our legal mandate to protect the state park system for the public in perpetuity.

Crystal Cove State Park is one of the most diverse and popular units of the State Park system. The park includes 3.5 miles of sandy and rocky coastline and Coastal Sage Scrub covered coastal terrace areas which provide for incomparable coastal access, recreation and wildlife viewing opportunities. The park also includes the El Morro and portions of the Muddy Canyon and Los Trancos Canyon watersheds. These coastal ridgelines and canyons support oak woodlands, riparian and Coastal Sage Scrub habitat. The 2400 acre upland area provides the public the opportunity to hike, mountain bike and horseback ride through a network of trails.

Completely within the Coastal Zone, Crystal Cove State Park is enrolled in the NCCP for its high quality Coastal Sage Scrub habitat. Portions of the park are within the Irvine Coast Marine Life Refuge due to the outstanding inter and sub-tidal areas found offshore. These offshore areas are also sub-classified as an underwater park and receive special management considerations from our Department. Millions of local, regional and international visitors to the area travel to or pass through Crystal Cove State Park annually.

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1

As the Irvine Company provided us with revised plans, reports and studies, we provided comments and input to their representatives and consultants. I would like to thank Gary Hunt, Monica Florian, Roberta Marshall and Andi Culbertson for their receptivity to our ideas that we have proposed to better protect Crystal Cove State Park. The improvements and changes to the project is evidence of their cooperation.

The proposed project includes the significant cut and fill of the upper third of Muddy Canyon, portions of Wishbone Hill and lower Muddy Canyon. Our basic concerns include excessive erosion and habitat impacts from increased water volumes, pollutant loads and the potential marine habitat and public health impacts from water reaching the beach.

We understand the Irvine Company is prepared to do the following to address our concerns. We do have some recommendations to the Commission which go beyond the Irvine Company's commitments. These can be found starting on page 4.

Progress Made By The Irvine Company

Water Quality Consultant

The Irvine Company has hired new water quality consultants who are experienced and nationally know experts in their field. They have systematically built a pollutant loading model, and made substantial changes to the proposed stormwater treatment system. This improved system, as designed and analyzed by TIC consultants and our reviewer, Michael Stenstrom, is designed to meet the standard now imposed in Los Angeles and Ventura Counties, allowing the treatment and in sometimes long term retention of the first ¾ " of stormwater flow. This is a major step forward for best management practices in California Coastal Nonpoint Source Pollution Treatment.

Low Flow Diversions

They have secured the agreement of the Irvine Ranch Water District and the Orange County Sanitation District to divert all dry season nuisance flows from the developed areas to the County Treatment Facility. We have discussed this with TIC and and both TIC and State Parks will request that all nuisance flows, regardless of season, be diverted. We have been told that such a request has been made of the Sanitation District, with no response to date. In addition, TIC has placed over 1300 acres of developed properties, including much of the recently graded areas from the prior phase into the dry season diversion program. This will not only protect the beach from nuisance ponding, but retrofit existing developed areas where releases of water to the beach and underwater park have been a water quality concern.

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Lower Muddy Canyon Detention Basin

They have added areas 3a and 3b to the wet weather/stormwater treatment system, an additional 300 acres of development over and above that in the appeal area. There is a new off-creek detention system on Irvine Company property which flows into an energy dissipater on easements in the State Park. This new arrangement provides for much less impact in Muddy Canyon in terms of extent of grading and blockage than the former structure proposed for the creek.

Bridge

They have converted a detention basin on our property with a road on top of it to a bridge to connect their developed areas to their recreational areas. The easement for the road was a condition of the purchase of Crystal Cove State Park. Although, we would rather not see any more construction in the Park, this bridge is also a large improvement over the prior proposal and will allow the removal of an easement for a much longer road.

Easements

They have worked with our Staff Attorney and with Madelyn Glickfeld of the Institute of the Environment and our Orange Coast District Staff to address our concerns about the use of remaining Irvine Company easements in the State Park. The Irvine Company retained several easements across Crystal Cove State Park when the California Department of Parks and Recreation purchased the property. These easements allow for Irvine Company activities within Crystal Cove State Park including grading, road access, fuel modification and drainage rights. The Irvine Company has committed to the California Department of Parks and Recreation a willingness to reevaluate each easement and refine them so that these development rights are either eliminated or modified so that future Irvine Company proposals or activities are less impacting to the State Park. We have attached a letter from the Irvine Company to State Parks which outlines the Irvine Company's easements and commitment to reevaluate these rights.

Storm Water System Management

They have worked with our Staff Attorney and with Madelyn Glickfeld and our Orange Coast District staff to address our concerns about the long term management, repair and replacement of components of the constructed stormwater treatment system and dry weather diversion system. This is the first major stormwater system that we know of that is scheduled to be managed by a private homeowners association. Treasure Island facilities will be taken over by the City of Laguna Beach. Playa Vista, in the City of Los Angeles, will be managed by the Bureau of Sanitation Stormwater Division. While we would prefer that the system be turned over to an expert stormwater treatment agency, Orange County is not now staffed to provide that function.

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Even once the area is annexed into the City, we understand that government management may not be possible under the current local government financial constraints engendered by statewide tax limit propositions. We think that the attached letter from TIC's in-house counsel to our staff counsel, indicates a willingness to enter into long term arrangements which is likely to resolve future operational problems in the stormwater treatment system with enough funds, and enough expertise to address those problems.

The Irvine Company has agreed to changes in the CCRs that will insure the operation of the system under a single Master Association, and has agreed to make State Parks and other agencies a third party beneficiary to give the Department some oversight over the management of the stormwater system. TIC has also agreed to require the Association to turn over the system to a public agency if a qualified agency wants to take it. Thus, once the provisions described in this letter are actually drafted and finalized in the single Master Association CC&Rs, State Parks thinks that Crystal Cove State Park will be protected by a system that will be kept functional over the long term.

Department Recommendations

State Parks has retained Dr. Michael Stenstrom, an environmental engineering professor in the Institute of the Environment at UCLA to do an independent review of the projects impacts, and assist State Parks in evaluating the work of the Irvine Company consultants. Dr. Stenstrom has made some recommendations that have not yet been accepted by TIC, although the Company has indicated a willingness to further examine the recommendations and resolve these problems. We have attached Dr. Stenstrom's report (see Attachment 4). He has assisted us in formulating the recommendations below.

1. **Storm Water System Management**

   We recommend that revised findings be made by the Commission to recognize that The Irvine Company intends to transfer all of the easements and the facilities, including the stormwater system to a single Master Association and recognize the agreement that State Parks and TIC have established to insure the long term operation, maintenance, repair and replacement of components of the stormwater system.

2. **Mass Grading/Construction Impacts**

   The Best Management Practices for mass grading of over 48,000,000 cubic yards of dirt on over 800 acres, without a LCP requirement for phasing and

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rainy season grading prohibitions are, in our opinion, not adequate. We, and our independent reviewer, Dr. Michael Stenstrom are more concerned about very large impacts on our park and the underwater marine park during mass grading and development of backbone infrastructure than we are about impacts from the development itself. We are very concerned about excess silts, clays and cobbles impacting our beach and underwater park during construction because sand bags, v-ditchs and other non-structural best management practices simply will not work to prevent unnatural mudflows in a heavy rain.

TIC has indicated a commitment to onsite monitoring by their erosion control experts as well as those of the Regional Board and Environmental Protection Agency. This could assist TIC and its merchant builders in solving problems on the spot. However, it does not address the need to plan for **temporary structural protections** that should be installed at the beginning of each rainy season, and vegetation of all completed rough and final graded slopes at the beginning of each rainy season. These BMPs would not only be designed to prevent slope failures, but would prevent mudflows and high volume, accelerated water flows heavy with suspended sediments, rocks and other debris from eroding our canyons and impacting our beaches and underwater park.

We have asked TIC to agree to allow State Parks to review each Wet Season Erosion Control Plan that they submit to the County, prior to submittal to Orange County, and to work with State Parks and Orange County on the preplanned locations for temporary detention and debris basins and vegetation coverage for the rainy season. TIC has said that they would consider including State Parks in the preparation of wet season erosion control plans, and know that we would like to see temporary structural improvements. They have indicated that they will respond to this request, but have not done so to date. The Coastal Commission staff report proposed special conditions, while providing some protections, does not address the need for temporary structural detention and debris basins and does not mention the fact that TIC is willing to have on site experts present during the rainy season.

3. **Dry Weather and Stormwater Quality Management Plan**

Dr. Stenstrom is generally complimentary about the plan and confirms that it should be capable of reaching the ¾ inches of rain detention capacity standard. He does have some recommendations that will (1) reduce the volume of nuisance water generated; (2) insure that the system is sized and designed to meet the complex demands of the site and the scope of the development. Particularly since the system will be managed through a

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private Master Association. Dr. Stenstrom believes that long-term experience and reliability of the system is important, if it can be achieved at a reasonable cost. His recommendations are adopted by the California Department of Parks and Recreation.

"A. Low Flow Diversion.

The diversion of low flow will create a continuing cost to prospective homeowners. In order to create an incentive to reduce this cost (and therefore maintain a willingness on the part of homeowners to pay it) the cost should be billed on the basis of volume of diverted flow. This can be done by installing flow meters and totalizers at each pump station. The totalizers can be checked periodically (i.e., weekly or biweekly) in the summer. The sanitary districts can be consulted to create a fee structure composed of a base fee and a progressive fee based upon total flow rate. The districts can make the fee commensurate with actual costs. If the districts do not want to install meters and totalizers, they can install simpler but more reliable elapsed time meters (the meter accumulates time only when the pump is running). The elapsed time is multiplied by the known, average flow rate of the pump to calculate the total flow. The totalizer will also be useful in monitoring performance of the pump station. Very low values may reveal failure in the pump station, or a rapid increase suggests a problem in the drainage area, such as a leaking water main. The totalizer data will give the homeowners' association, or other manager, a management tool. At present the diversions are only planned during the summer. The beach waters are used for bathing beyond these time limits. It would be useful if the flows could be diverted during other dry periods of the year. The Sanitation District may not accept these flows, but it would be useful to see if an arrangement could be worked out.

B. Regional DrainPacs [if used]

Drain Pacs must be monitored to determine when they are clogged. The best way to do this is observe them in the rain. Ideally, a maintenance contractor should be hired to perform this function. An outside stormwater contractor such as United Stormwater could do this function. The landscaping contractor could be charged with observing and photographing the units during rainfall. Litter could be removed from the collected material and the remainder may be suitable for mixed composting.

The DrainPacs are have been sized using a rating of 50% of hydraulic conductivity. This rate was based in part upon my experiments at UCLA. None of the area DrainPacs have been designed. It might be wiser to rate

Ex 4'o
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them at 25% of the hydraulic conductivity, which would double the required area. This would reduce cleaning frequency and increase reliability. Some of the structures are quite small (i.e., < 20 sq. ft.), and doubling their size would not double their construction costs.

C. Street Sweeping.

An aggressive street sweeping program is proposed. From my tour of previously developed areas, it appears that the proposed street sweeping may be more frequent than needed. Street sweeping is most effective in more populated land uses, with greater vehicle and pedestrian traffic. Weekly street sweeping is probably adequate, except during construction periods. The Development Company should consider directing some of the street sweeping effort to other BMPs, such as larger DrainPacs or construction-time BMPs.

D. Detention Basins

Several detention basins are proposed. The success of these basins will depend in large part on their detailed design, which requires that the high flow does not flush out the material retained during the low flow or the first flush. I do not know of the plans for the detailed design. The Development Company should insure that the basins are optimally designed. Again, the Mangarella team has the expertise to do design the basins or review the designs to insure success."

TIC is still reviewing Dr. Stenstrom's recommendations. State Parks thinks that all are reasonable modifications to the system to insure its long term effectiveness and assure that the harm to coastal sage habitat, bluffs, beaches and the underwater marine park be minimized, consistent with the Coastal Act. We request that the Coastal Commission amend the staff recommendation to provide that:

- The Coastal Commission recognizes that the Irvine Ranch Water District will be the permit applicant for the dry weather diversion system and that IRWD should include totalizers in that system to encourage water conservation and decrease nuisance flows;

- TIC <u>either</u> incorporates the design recommendations for the Regional Drain Paks in B.

- TIC incorporates temporary detention and diversion basins in the Construction BMPS for the wet season as discussed above; and

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- TIC provides for the optimal design of any permanent detention basins to insure that high flow operation does not flush out materials collected during low flow operations as provided in D.

Other Issues Raised by the Commission Staff Report

Sand Replenishment

Expert reports provided by the Irvine Company indicated an annual net loss of % of the beach quality sand at Crystal Cove State Park due to their developments upstream. We also understand from these reports that this amount shows a high probability variance (+/- 50%) which we believe is problematic for the "in lieu" fee program as proposed in the Coastal Commission staff report. We believe a commitment to long term sand monitoring and mitigation program is the best approach to ensuring the beaches of Crystal Cove remain unchanged. The monitoring of the beach sand quantities and qualities at Crystal Cove will provide for less wide ranging projections of the project's impacts to Crystal Cove State Park. This data can then be used for the proper planning and implementation of a sand replenishment program if necessary. The California Department of Parks and Recreation finds the "in lieu" fee condition within the staff report lacks the necessary monitoring and program management components to provide for long-term protection of these coastal areas. Additionally, we feel impacts will be enduring and thus funds should remain available for the life of the project.

Thank you for considering our comments. Rich Rozzelle will attend the Commission meeting to answer any questions you may have. We will continue to work productively with the Irvine Company and the Commission staff to resolve the issues both before and after the permit appeal is decided.

Sincerely,

Mike Tope
District Superintendent

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Enc. Attachment 1 Letter from DPR to Commission dated July 19, 2000
Attachment 2 Dan Hedigan Letter to Tim La Franchi, DPR
Attachment 3 Jerry King, Psomas to Roberta Marshall, TIC
Attachment 4 Dr. Stenstrom Report

cc: Coastal Commissioners, Alternates
Peter Douglas, Executive Director, CCC
Teresa Henry, South Coast District Director, CCC
Gary Hunt, Executive Vice President, TIC
Monica Florian, Senior Vice President,TIC
Roberta Marshall, Vice President, TIC
M. Andriette Culbertson, Culbertson and Adams

Rusty Areias, Director, CDPR
Dick Troy, Deputy Director, CDPR
Steve Treanor, Southern Division Chief, CDPR
Richard Rozzelle, Parks and Recreation Specialist, CDPR
David Pryor, Resource Ecologist, CDPR
Susan Jordan, League for Coastal Protection
Garry Brown, Coastkeepers
Kim Le Wand, Lawyers for Clean Water
Dr. Michael Stenstrom, UCLA Institute of the Environment
Madelyn Glickfeld, UCLA Institute of the Environment

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Independent Review of the Newport Planned Community Development (Crystal Cove) – Stormwater Impacts

By

Michael K. Stenstrom, Ph.D., P.E.
Professor, Civil and Environmental Engineering Department
and the Institute of the Environment

University of California, Los Angeles
Los Angeles, CA
August 1, 2000

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Introduction

The purpose of this report is to offer comments and constructive criticism of the planning for the Newport Coast Planned Community Development known as Crystal Cove. The review is restricted to water quality impacts (including sediment from the standpoint of environmental effects, but not including issues related to beach sand accumulation or reduction) from the development and particularly the impact of stormwater. Development usually tends to increase the imperviousness of the developed land, which generally tends to increase the deleterious impacts of stormwater.

The review is based upon two meetings with representatives of the Irvine Development Company and their consultants, a tour of the site, several conference calls and a number of reports. The most important report for this review is titled "Newport Coast Planned Community, Crystal Cove Stormwater Quality Evaluation Report (Draft 3), authored by P. Mangarella, E. Strecker and S. Gentzler. Additional reports include the "Third Party Independent Review of Hydrologic, Sediment Yield and Coastal Processes Results & Conclusions for Newport Coast phases IV-3 and IV-4 Appeal," several reports and files from Richard Ford and coworkers, including "Water Quality and Marine Ecological Monitoring Studies for the Crystal Cove Development Project (May 12, 2000)," and briefer reviews of large reports on sediments by Howard Chang, Tettemer and Associates, and Inman and Masters Consultants.

These reports were provided to the author by the Roberta Marshall of the Irvine Development Company and Andi Culbertson (also a consultant and representative of the Irvine Development Company). I wish to state that everyone has been cooperative and has provided information to me in a timely fashion.

This review is being done for The California Department of Parks (State Parks) in a cooperative agreement through the Institute of the Environment at UCLA. Ms Madelyn Glickfeld has been instrumental in the review and helped me understand the concerns of State Parks.

The thrust of this review is stormwater, its impact, and the mitigation of its impact. Sediment transport has not been reviewed in detail, other than how it relates to stormwater quality. Various drawings and documents have described the various water quality parameters and best management practices (BMPs). The scope of the review and the amount of material to be reviewed in the time available has been enormous. The summary and analysis provided Mangarella et al. have been very helpful in understanding the stormwater management plan and also serves to document the plan. I have accepted this report as an accurate description of the stormwater management plan; I have not checked it for consistency with other documents. The Irvine Development Company needs to verify this assumption and confirm that no important changes have been made from the draft to final versions of this report.

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Stormwater Management Plan

The Irvine Development Company proposed to develop a little more than 800 acres. The developed areas will be drained by two ephemeral creeks – Muddy Creek (625 acres) and Los Trancos Creek (208 acres). The creeks in their natural form have large slopes, which will generally favor scouring of particulates. It is therefore important to minimize the runoff volume and peak magnitude to the creeks to avoid excessive scouring.

A series of Best Management Practices (BMPs) have been are included in the plan. Generally, at least two BMPs are applied to treat stormwater. The BMPs include flow over pervious areas (grassy swales and bio-infiltration facilities), advanced street sweeping, detention basins, a riparian corridor, a wetland and catch basin inserts (e.g., DrainPac filters). The range and magnitude of BMPs is impressive and is quite a bit greater than BMPs being applied or required of existing developments, including some those adjacent to the proposed development.

The Mangarella report summarizes the various BMPs in schematic form in Appendix D. These are very useful diagrams to help understand the project. This Appendix also summarizes their modeling results to predict the usefulness of the BMPs.

Los Trancos Creek (the smaller of the two watersheds) uses catch basin inserts, a riparian zone and two detention ponds as BMPs. Muddy Creek includes these same types of BMPs as well as swales and DrainPacs for treatment of several areas.

DrainPacs are a proprietary filter media composed of polypropylene fabric. The fabric can be purchased in different thickness and mesh. The fabric is hydrophobic and acts as an oil and grease sorbent. The fabric will filter particles in the size of medium sand and larger. They also effectively trap litter and debris. They are a relatively new technology and have been applied in Southern California only in limited studies in the past two years. Studies by the author have shown their effectiveness in laboratory conditions to remove oil and grease, some soluble contaminants, and sand particles. Limited field studies showed their ability to capture large amounts of litter and debris in runoff from city streets (estimated to be about 1 part per thousand, weight basis). DrainPacs can be fabricated in different sizes to facilitate their use in various structures for various flow rates.

There are two important BMPs that do not appear in the schematic diagrams. The first is advanced street sweeping. The net result of sweeping is to reduce the particulates and litter discharges from roads and parking lots. The material is removed by the sweeper as opposed to being scoured away by rainfall. Traditional street sweepers are good for removing large materials but poor at removing small particles. Generally, the worst pollutants in stormwater are associated with the smaller particles. Advanced street sweeper attempt to remove a greater fraction of the smaller particles. The frequency of street sweeping is important because material tends to accumulate over time. The frequency of street sweeping is usually determined on a practical or economic basis, as opposed to a scientific assessment of the time required for particles to accumulate. The

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developers have proposed frequent street sweeping. Street sweeping does not appear in Appendix D since there is no structure to show. The impact of street sweeping can be quantified in the model by using lower pollutant concentrations, and will be discussed later.

Another BMP, and perhaps the most important BMP in the entire plan, is diversion of the summer flows to sanitary sewers. Stormdrains frequently flow even in dry weather. These small flows often result from "nuisance" or from natural springs. Nuisance waters are generated from excessive watering, human activities such as car washing, draining or dewatering during construction, cooling tower or air conditioning discharges, and illegal dumping. In some cases natural springs can create small but continuous flows, even in dry weather. For example, there are some natural springs the La Brea Tar Pits in Los Angeles that flow continuously, keeping a small "natural" low flow in Ballona Creek.

The summer flows can cause problems to beaches. The low flow may transport contaminants to the beaches, and the largest concern is for indicator organisms. In populated areas such as the City of Santa Monica, diversion of low flows to sanitary sewers has proved effective in reducing discharges and contaminants to the Bay. Diversion of the summer flow is possible because the flow rate is very low compared to storm flow. Also, treatment plants in Southern California usually have reduced flows in the summer due to a decrease in infiltration.

The Orange County Sanitation District and Irvine Ranch Water Districts have agreed to accept the low flows from the project areas. This will entail the construction of diversion stations. Diversion stations are constructed near the mount of the stormdrain with a screen and a low flow diversion to a pump station. The screen protects the pump from liter and debris. The pump is sized to pump the low flow to a sanitary sewer. In many cases it is possible to divert the flow by gravity, but sanitary districts usually prefer pump stations. Pump stations provide positive control; they can be turned off in the winter or by remote control. This project includes diversion of flows from an earlier development, which is an added benefit.

Model Description

To describe the performance of the various BMPs, a simple model has been used. This model provides the quantitative evaluation of the effectiveness of the BMPs, and is the primary support for the conclusions in the Mangarella report. The type of model is frequently used in stormwater studies. I first used and published such a model in 1984 (1). Subsequent studies have used the same approach for more complex and larger areas (2,3). This modeling approach has sometimes been called the simple method or the EPA method. It is basically an accounting approach, and lends itself to spreadsheets and geographic information systems (GIS). The basic premise uses the a simplification of the rational method, as follows:

$$M = R * I * EMC * Area$$

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where:

M	= mass of pollutant
R	= rainfall
I	= imperviousness
EMC	= event mean concentration
Area	= runoff area.

The parameters used in the equation are obtained from local information, in so far as possible. The rainfall is usually available from local records. The imperviousness is a function of the land use (i.e., for paved surfaces *I* approaches 1.0; for undeveloped, level areas, *I* approaches 0). The event mean concentration is the most variable part of the approach. Data must be available for each type of land use to describe the average pollutant concentration. Area is obtained from land use (e.g. the area of the street, parking lot, etc.). The model is applied to each land use over the entire development, and the results are summed. The equations are quite simple but can be very tedious. The model is steady state, and cannot predict peaks; it provides the average value for a rainfall event described by *R*. *R* can be for a single storm or an entire season. Calibration is important, and in my experience, an accuracy of +100 or –50% is good for these types of models.

The Mangarella report has used this approach for the entire project area. To assess the impact of BMPs, the event mean concentration can be reduced by the expected removal of by the BMP. The BMPs are implemented separately for each pollutant (a BMP may removed TSS but not remove oil and grease, etc.). The impact of street sweeping would be quantified by reducing the EMC for particulates and other pollutants removed by the sweeper. In the case of infiltration, the value of I can be reduced to simulate infiltration, or the summing algorithm can be modified to include the effect of infiltration.

Discussion

The modeling has been performed in a fashion that is "fair" to the developer and the environment. The parameters picked for *EMCs, I,* etc. are consistent with the values I have used in similar conditions. Assumptions for BMP removal efficiency are conservative. I believe their model is a fair and reasonable predictor of the impact of the development. If I were to evaluate the impact of the development, I would have used a similar approach. The model in some cases, such as for TSS, will predict a decrease in pollutant concentration with development. I have also observed similar results; this occurs because undeveloped areas in the dry southern California environment often are poorly vegetated, allowing erosion to occur. Development with grass and irrigation, such as yards and golf courses, stabilizes the soil and reduces erosion. In this same scenario, discharge of other pollutants, such as nutrients and pesticides used to promote growth, may be increased.

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The modeling effort does not account for summer flow diversion of sanitary sewers. It is only applicable to the rainy season. Successful diversion of the summer flow means that there will be no discharge in the summer.

The size of the retaining basins should capture the average 0.75-inch storm.

It appears that the stormwater management design is state of the art and represents a balance between environmental protection and cost. The concern I have had since my first review of the plan is maintenance. DrainPacs will need to be cleaned and diversion of summer flows will require continuing payment from the homeowners. How do we insure that the stormwater plan will be maintained? In discussions with the Irvine Development Company, they have indicated a willingness to support an institutional arrangement that will insure proper maintenance, but have also noted the legal difficulties in creating such an arrangement. Representatives from State Parks and the Development Company are exploring ways to create such an arrangement.

The Mangarella report does not discuss construction-time BMPs. A significant amount of grading will occur during the mass grading of the site. No phasing or rainy season limits are imposed regulatory agencies. Depending on the time of year, and luck with rains, it is possible to have major erosion problems. The erosion products, especially the very fine clays, can have harmful impacts on the environment. A "handbook" for construction-time BMPs was supplied by the Irvine Development Company. It describes a variety of BMPs such as temporary sedimentation ponds, but a detailed plan for construction-time BMPs has not yet been presented. The Irvine Development Company should be encouraged to apply these BMPs as aggressively as possible to avoid impacts to the environment. Again, the Mangarella team as well as the Development Company's other consultants have skills in this area.

Recommendations

The value I can provide to his effort is improvement in workability and robustness of the plan. I offer the following suggestions. Several have been expressed previously and the Irvine Development Company may already be considering ways to implement them.

1. Low flow diversion. The diversion of low flow will create a continuing cost to prospective homeowners. In order to create an incentive to reduce this cost (and therefore maintain a willingness on the part of homeowners to pay it) the cost should be billed on the basis of volume of diverted flow. This can be done by installing flow meters and totalizers at each pump station. The totalizers can be checked periodically (i.e., weekly or biweekly) in the summer. The sanitary districts can be consulted to create a fee structure composed of a base fee and a progressive fee based upon total flow rate. The districts can make the fee commensurate with actual costs. If the districts do not want to install meters and totalizers, they can install simpler but more reliable elapsed time meters (the meter accumulates time only when the pump is running). The elapsed time is multiplied by the known, average flow rate of the pump to calculate the total flow.

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The totalizer will also be useful in monitoring performance of the pump station. Very low values may reveal failure in the pump station, or a rapid increase suggests a problem in the drainage area, such as a leaking water main. The totalizer data will give the homeowners' association, or other operator, a management tool. At present the diversions are only planned during the summer. The beach waters are used for bathing beyond these time limits. It would be useful if the flows could be diverted during other dry periods of the year. The Sanitation District may not accept these flows, but it would useful to see if an arrangement could be worked out.

2. DrainPacs must be monitored to determine when they are clogged. The best way to do this is observe them in the rain. Ideally, a maintenance contractor should be hired to perform this function. An outside stormwater contractor such as United Stormwater could do this function. The landscaping contractor could be charged with observing and photographing the units during rainfall. Litter could be removed from the collected material and the remainder may be suitable for mixed composting.
3. The DrainPacs are have been sized using a rating of 50% of hydraulic conductivity. This rate was based in part upon my experiments at UCLA. None of the area DrainPacs have been designed. It might be wiser to rate them at 25% of the hydraulic conductivity, which would double the required area. This would reduce cleaning frequency and increase reliability. Some of the structures are quite small (i.e., < 20 sq. ft.), and doubling their size would not double their construction costs.
4. An aggressive street sweeping program is proposed. From my tour of previously developed areas, it appears that the proposed street sweeping may be more frequent than needed. Street sweeping is most effective in more populated land uses, with greater vehicle and pedestrian traffic. Weekly or bi-weekly street sweeping is probably adequate, except during construction periods. The Development Company may want to consider directing some of the street sweeping effort to other BMPs, such as larger DrainPacs or construction-time BMPs. At present, no credit is taken for reducing pollutant concentrations by street sweeping.
5. Several detention basins are proposed. The success of these basins will depend in large part on their detailed design, which requires that the high flow does not flush out the material retained during the low flow or the first flush. I do not know of the plans for the detailed design. The Development Company should insure that the basins are optimally designed. Again, the Mangarella team has the expertise to do design the basins or review the designs to insure success.

References

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2. Stenstrom, M.K. and E. Strecker, "Assessment of Storm Drain Sources of Contaminants to Santa Monica Bay, Vol. I, Annual Pollutants Loadings to Santa

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Monica Bay from Stormwater Runoff," UCLA-ENG-93-62, May 1993, Vol. I, pp. 1-248.

3. Wong, K., E.W. Strecker and M.K. Stenstrom, "A Geographic Information System To Estimate Stormwater Pollutant Mass Loadings," *Journal of the Environmental Engineering Division*, ASCE, Vol. 123, pp. 737-745, 1997.

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THE IRVINE COMPANY

Daniel C. Hedigan
Senior Vice President
General Counsel

July 27, 2000

Tim LaFranchi, Esq.
State of California Department of Parks & Recreation
Legal Office
1416 9th Street
Room 1404-6
Sacramento, CA 95814

Re: *Crystal Cove*

Dear Mr. LaFranchi:

Following up on our conversation today, this letter will outline the understandings between the State of California Department of Parks & Recreation and The Irvine Company with respect to our Crystal Cove development and the Crystal Cove State Park.

I. Easements: Under the Corporation Grant Deed between The Irvine Company and the State of California recorded in December 1979, The Irvine Company reserved nine specific easements for the benefit of our future development of the adjacent property. As development of our project is completed, various of these easements can be narrowed, and in some cases eliminated, to reflect the actual development of the project. While development of our project will occur over a number of years, modification of the easements can occur on a phase-by-phase basis as development is completed. For purposes of modifying the easements, completion of a phase would be the point at which we have finished construction, obtained all final governmental inspections, have had all bonds exonerated and, to the extent applicable, the property has been turned over to the Crystal Cove Association. This is the point in time when we would not contemplate any changes in the development plan so that the easements in the grant deed can be narrowed to be project specific.

n ...ons CrsCove TimLaFranchi-2.rtf

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550 Newport Center Drive, P.O. Box 6370, Newport Beach, California 92658-6370 (949) 720-2788 Fax (949) 760-0896

As to the nine specific easements in the deed, you and I discussed proceeding in the following manner:

1. Utility Easement: This first easement relates to a Southern California Edison Utility Easement and does not need to be changed.

2. Coastal Drainage Easements: These easements are narrowly defined on Exhibit C1 through C6. When all construction, if any, related to these easements is completed we would amend the easement to delete the rights for "construction, installation," retaining maintenance, operation, repair and replacement and drainage rights.

3. Canyon Drainage and Utility Easements: These easements are narrowly defined in Exhibit D1 through D8. We would handle these in a similar manner as number 2 above, eliminating construction and installation at the appropriate time and retaining maintenance, operation, repair and replacement and drainage rights.

4. Morro Canyon Drainage Easement: This is a broad drainage right over parcel 3 of the park property, including rights to construct various drainage facilities. This easement needs to be reviewed with our respective engineers to determine if any construction is contemplated in this easement area. Depending upon construction requirements, we can revise this easement to eliminate construction rights and only retain maintenance rights, if necessary, and drainage rights.

5. Sand Canyon Road Construction and Slope Easement: Once we have constructed the road to the project recreation facilities, this easement can be narrowed to reflect the actual alignment of the road and any necessary maintenance rights required on State Park Property. All future and other development rights in this easement area would be eliminated.

6. Grading Easement: At completion (as defined above) of each phase of the project, this easement could be eliminated except to the extent of required maintenance, if any. We also discussed that this easement may need to be

revised consistent with the Property Acquisition Agreement, to reflect any fuel modification areas that might need to be located in the Park.

7. **Present Utility Lines:** This easement needs to be reviewed to determine if any of these facilities are still servicing our property or are used by our development. If not, the easement can be eliminated. If we are using these facilities, we should be able to eliminate the easement once all new utilities are installed.

8. **View Easement:** No change.

9. **Beach Access Easement:** No change.

There are two other Grant Deeds related to the Park. One recorded in August 1980 and the other in November 1981. Both retain easements similar to those in the 1979 deed. Although we did not specifically discuss these easements, they can be handled in the same manner as discussed above.

II. **Property Acquisition Agreement**

1. December 12. 1979 Agreement. In addition to the easements in the Grant Deeds, the State of California and Irvine Company agreed in the Property Acquisition Agreements to various boundary and easement adjustments between our respective properties as necessary for our development. Three of these paragraphs in the 1979 agreement, paragraph 9, Boundary Adjustments, Paragraph 10 Sand Canyon Road Easement Adjustment, and paragraph 11 Future Easements should be eliminated from the Property Acquisition Agreement at such time as our project (or with respect to a phase) is complete.

2. August 27, 1981 Agreement. This agreement includes paragraph 11 Boundary Adjustments and paragraph 12 Future Easements, both of which are similar to the same paragraphs in the 1979 Agreement. These would be handled in the same manner as discussed above.

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III. Contact Person

Madelyn Glickfeld requested a single point of contact for State Parks when issues arise with respect to drainage onto State Park property. We would suggest that until such time as The Irvine Company, and any merchant builders to which we sell property, complete their construction at Crystal Cove, that the contact person be a representative from The Irvine Company. After such time as our and the merchant builders' construction is completed, the contact person would transition to the property manager for the Association or to an appropriate individual at a governmental agency with regulatory oversight of the project.

IV. Homeowners Association

To address other issues raised by State Parks, we are prepared to modify the Covenants, Conditions and Restrictions for the project in the following manner:

1. The Crystal Cove Master Association will have sole responsibility for maintenance of the water quality facilities being installed as part of the project. Although not of concern to the State Parks, we will do this by inter-association agreements obligating the Crystal Cove Association to maintain the water quality facilities in the upper development area, with the Association for this area obligated to contribute to the cost of such maintenance.

2. We will add an exhibit to the CC&Rs establishing inspection, maintenance, repair and replacement guidelines for the water quality facilities. We will provide that the association must inspect, maintain, repair and replace the water quality facilities as provided in the guidelines, or to a higher standard if established by any public entity with jurisdiction over the water quality facilities. We will also require the Association to contract with any public entity willing to maintain the water quality facilities, provided such contract is at market rates. At the option of State Parks, we can also specifically provide in the CC&Rs that the maintenance guidelines can not be changed without approval of State Parks.

3. The Regional Water Quality Control Board, Santa Ana Region, is currently requiring Irvine Community Development Company to conduct a Water

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Quality and Marine Ecological Monitoring Study for the Crystal Cove Development Project. This monitoring program is being conducted by Dr. Richard Ford. Tthere is no set time period for the conclusion of this monitoring program; however, we will revise the CC&Rs to provide that, once ICDC's monitoring program has concluded, if the Regional Water Quality Control Board or other public entity with jurisdiction over the project should require a new monitoring program as part of the development's Best Management Practices, the Association will conduct the monitoring program.

4. We will separately identify in the budget for the HOA a line item for operating costs for inspection, maintenance and repair of the water quality facilities and a line item in the reserve section for replacement of the water quality facilities.

5. We will provide in the CC&Rs that the Association will be obligated in the future to transfer to a public entity all the water quality facilities owned by the Association, and any replacement reserves the Association then has for such facilities, and will grant to the public entity all easements across association property as necessary for the public entity to maintain the facilities.

Very truly yours,

Daniel C. Hedigan

DCH:dy

cc: Richard Rozzelle
Department of Parks & Recreation
Madelyn Glickfeld (facsimile 310-457-5692)
Monica Florian
Roberta Marshall

n lits CrysCove-Tim-LaFranchi-2 r1

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State of California • The Resources Agency
DEPARTMENT OF PARKS AND RECREATION • P.O. Box 942896 • Sacramento, CA 94296-0001

Gray Davis, *Governor*
Rusty Areias, *Director*

July 19, 2000

Teresa Henry
California Coastal Commission
200 Oceangate, Suite 1000
Long Beach, California 90802

Dear Ms. Henry:

Irvine Company Development Easements within Crystal Cove State Park

The California Department of Parks and Recreation has reviewed plans dated June 27, 2000 provided by the Irvine Company for the changes to their proposed development in and near Muddy Canyon. As you are aware, the Irvine Company retained certain rights on and across portions of Crystal Cove State Park when the State of California purchased this land for the public. It is our understanding the Irvine Company will be exercising some of these rights in two specific areas, which are located in the area under appeal (A5-IRC-99-301).

The revised Irvine Company plans now indicate the area previously considered for a detention basin and creek crossing within Muddy Canyon has been redesigned. We understand that the basin has been eliminated from the project and a bridge will now span the same general location. Plan revisions also include the construction of a Loffeinstein wall near Muddy Creek immediately down stream from the bridge to support the road approach from the south to the bridge. It is our opinion the Irvine Company's current proposal for this area is within their rights retained when the property was transferred. State Parks considers a bridge a more environmentally sound means of access than the previously proposed road with culverts. Pursuant to the Coastal Act, the Irvine Company has invited us to be co-applicants with them before the Coastal Commission. However, we have declined the invitation. We have asked the Irvine Company to vacate their remaining road access easement within Muddy Canyon at the completion of their development. Preliminary discussions between State Parks and Irvine Company legal divisions have begun to accomplish this in a timely manner.

Downstream, towards the Muddy Creek/Pacific Coast Highway intersection, the revised Irvine Company plans require a change in the grading as previously proposed. According to the Irvine Company plans, this grading will extend into Crystal Cove State Park and is required to provide adequate geological stability for the revised detention (draw down) basin between Reef Point Drive and Muddy Creek. State

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Parks believes this detention basin is a necessary component of the storm water treatment system. Additionally, placement of this detention basin outside of the natural drainage area is preferred over construction within the canyon bottom. This has resulted in less grading than previously planned. Here again, we believe the Irvine Company retains the right to grade into this area of Crystal Cove State Park and we declined the Irvine Company's request to be co-applicant before the Coastal Commission for any permits required for these improvements on State Park property.

We hope to have the opportunity to review final revised plans, including, the restoration of graded slopes, fuel modification plans and plant selection for natural revegetation of the graded slopes and provide additional comment to your office. We will continue to work with the Coastal Commission and the Irvine Company to assure that the end result of this development provides for the protection and the long term compatibility with the natural resources found at Crystal Cove State Park.

Please feel free to contact Richard Rozzelle of the Orange Coast District at (949) 366-4896 if you have any questions.

Sincerely,

Rusty Areias
Director

cc: Tim La Franchi, Chief Counsel, DPR Legal Office
Roberta Rand Marshall, Vice President Land Development, Irvine Community Development Company
Mike Tope, Superintendent, Orange Coast District
Madelyn Glickfeld, Consultant to the Director

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July 27, 2000

Ms. Roberta Rand Marshall
IRVINE COMMUNITY DEVELOPMENT COMPANY
550 Newport Center Drive
Newport Beach, CA 92658

Subject: Supplemental Activities Associated with Implementation and enforcement of Storm Drain Water Pollution Prevention Plans (SWPPP) in Crystal Cove (Newport Coast Phases IV-1 – IV-2)

Dear Ms. Marshall:

In response to the guideline and implementation plans for the attached 1999-2000 Storm Water Pollution Prevention Plan, Best Management Practices (BMP's) were designed and installed for the Irvine Company's Crystal Cove project. The construction BMP's were developed to comply with all requirements of the general permit to discharge storm water associated with construction activity and conditions of the plan. The implementation program addressed pollutant reduction from paving operations, disposing of waste and a training program for employees, subcontractors and merchant builders.

While these steps are thoroughly documented and available for review, the field experience and feedback of the consulting oversight manager indicated that additional steps would serve to address actual construction practices not addressed in the SWPPP or required by the published guidelines or regulations.

The following requirements were identified and implemented as site specific safeguards to further enhance the SWPPP:

1. **On-Site Monitoring During Storm Events**

   Actual storm events: In addition to the BMP installations and maintenance crews, a senior inspector would complete a site review of the BMP's and maintenance practices once or twice a day, depending on the intensity of the storm. These on-site visits provided insurance of required maintenance practices, but perhaps more importantly, they provided the opportunity for the designed and implemented BMP's to be revised for site specific

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conditions. Changes and reinforcements to designed BMP's were installed immediately where conditions demanded improvements to the runoff conditions.

The Key to successfully addressing design issues for containment of storm water was an on site presence of knowledgeable personnel.

2. Monitoring Construction Activity and Addressing Industry Habits in a Timely Manner.

Following routine inspection of construction activity, a list was prepared of what came to be termed "housekeeping", correction that were enforced with each merchant builder. The following practices were documented and changes were implemented to achieve compliance:

A. All paper, plastic a fugitive trash was to be picked up at each construction site daily. The food truck for breaks and the worker's own food wrappers were discovered to be a source of blockage in "vee" ditches and drains that hampered the proper functioning of the designed storm water control systems.

B. Workers were prohibited from parking their trucks on individual residents lots. Workers preferred driving their trucks over sandbags or in some cases grading out an area to park their trucks directly in front of the structure they were working on. This left tire-made channels that carried mud and water directly into the street and rendered the BMP's useless. Vehicles were prohibited from these areas and all BMP's installed to prevent flow from the lots were repaired and tire tracks graded to a flat lot surface.

C. All restroom facilities were required to be set back from the curb and sandbags were placed around them to prevent wind from blowing them over and the contents from being allowed to flow to the storm drain.

D. While the SWPPP required segregated areas for construction supplies, site inspections revealed wood and cut, plywood pieces and other debris were not collected or controlled and were washed into vee ditches during storm events. The on-site monitor required daily site maintenance and a containment mechanism to eliminate the problem.

   A secondary benefit was that slopes were no longer walked upon and the potential erosion problem was eliminated.

E. All palletized material associated with masonry work was required to be wrapped and set back from the curb and drainage areas.

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F. Cement curative agents were not permitted at curb side as in the normal practice and the drain was required to be sandbagged as well as the area where the contents were to be transferred to a sprayer container.

3. **Progress Mapping**

Construction sites are always evolving. The Irvine Company Construction Manager has kept a series of maps that document when each portion of the site was graded and which BMP's were installed to protect that area. These maps have allowed the on-site inspector to monitor how effective each BMP has been performing and what modifications need to be made.

Generally, regular "on-site" involvement in support of the project site SWPPP has proven to reduce the occurrence of storm runoff that is unchecked. Flexibility and the ability to adjust BMP's in the field to respond to storm conditions will reduce negative impacts to the surrounding habitat.

As progress on construction sites continues and the new storm season BMP's are installed, this more stringent inspection protocol will be followed.

Should you have any further questions or need for assistance, please feel free to call upon me.

Sincerely,

PSOMAS

Jerry A. King,
Vice President
Planning and Project Development

Attachment:

JAK:br

F:\Water Group\Jerry King\Irvine Co BMP's.doc

Ex 46
27

County of Orange
Planning & Development Services Department

THOMAS B. MATHEWS
DIRECTOR

10 N. NOLNER ST.
SANTA ANA, CALIFORNIA

MAILING ADDRESS
P.O. BOX 4048
SANTA ANA, CA 92702-4048

August 7, 2000

VIA FACSIMILE
562.590.5084

Ms. Teresa Henry
District Manager
California Coastal Commission
200 Oceangate, Suite 1000
Long Beach, CA 90802-4302

Subject: Clarification of County Position with Respect to Grading Pursuant to Appeal #A5-IRC-99-301

Dear Ms. Henry:

It is my understanding that the Coastal Commission staff are considering request by The Company to modify special conditions of approval in order to facilitate a sequencing of grading.

Please be advised that my office will work closely with your office to ensure that the terms of the issued CDP and its special conditions are met. Specifically, I will not issue a grading permit within the appeal area of this project until such time as I have in my possession the Executive Director's check off on the plan.

Please contact me if I may answer any questions regarding this matter.

Sincerely,

Thomas B. Mathews, Director
Planning and Development Services Department

Ex.47

AUG 0 2 2000
CALIFORNIA
COASTAL COMMISSION

Dear Mr. Hamm,

Crystal Cove is more than just a name to me, not just a small beach community that I may have heard or read about or even occasionally visited. No, Crystal Cove is an inseparable and memorable part of my heritage. You see in the 1930's my Grandfather Dr. James S. Craig Sr. purchased of one of the two cottages that stand on the northern bluff in the historic district of Crystal Cove. He owned that little cottage far into his retirement in the 1970's. The purple & white everlasting flowers growing over the hillsides all the way to the sands came from his seedlings.

Over the years many people came to our beach. Governor Knight was a frequent guest of my Grandfather and he loved to sit on our gazebo at sunset and gaze out over the ocean and marvel at Catalina Island.

Crystal Cove was also home to the Van de Kamps (of restaurant & frozen food fame) who for many years owned the cottage at the south end of the beach by the rocks & tide pools.

The cove is so wonderfully rustic and beautiful that many movies have been filmed on location there including "Beaches" starring Bette Midler.

Ever since I was a child there has always been the threat of BIG BUSINESS coming to our little Cove and now I'm afraid this may become a reality. It is not just the memories that bring me to writing you today but the over all damage this will cause the cove itself.

Crystal Cove Historic District is not a separate unit of the California system, but a 13 acre portion of the 2,800 acre Crystal Cove Park. As a Park it qualifies for protection against improper or overuse by Park statutes, rules, and environmental standards, under ranger supervision. But contract terms allow occupation and control of the entire Historic District from Los Trancos Parking Lot to the mean high tide line (like gate guarded private areas) with control of beach recreation, the underwater Park, educational programs, the interpretive center in addition to resort facilities. The resort operator has discretion to restrict day visitors, give priority to "guests", and establish rates. Special events planned by Parks will require permission of the concessionaire who alone will reap the income from film makers on location. Park Rangers may be limited to acting as security guards for the concessionaire.

The plan by state park officials to use state land in Orange County for a boutique private resort is the wrong way to raise revenue for a strapped parks system. Public coastal land should be available to the public.

The state has been far too secretive in the formulation of these plans. It should go back to the drawing board and come up with something for the state's Park and Recreation Commission and the California Coastal Commission to review that is more suitable for public land.

We need your help and assurance that adherence to the general plan for the park which was adopted in 1982 and to oppose amendment of the plan until and unless it is subject to the same extensive, good-faith public review process as the original plan.

Please ensure that all provisions of State law are observed in use of the park, including but not limited to requirements of Section 51019.53 of the Public Resources Code and requirements of the California Environmental Quality Act for full environmental review and public participation.

Please advocate a renewed General Planning process to reach public consensus on the fate of the Crystal Cove Historic District and El Morro area, starting with the publicly-developed and approved 1982 General Plan and "Public Use and Development Plan".

We need your help to maintain and enhance those resources and qualities of Crystal Cove which caused the taxpayers of the State of California to purchase the park in the first place.

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p. 1 of 2

I urge you to maximize access to Crystal Cove for the people of the state of California, with only those limits necessary for protection of sensitive environmental resources, such as breeding dolphins and environmentally sensitive species. Economic limitations which would preclude use of Crystal Cove by economically disadvantaged segments of the population must not be established.

Please remember that Crystal Cove was acquired with 1979 bonds classified "Park" by the State Parks Commission and was in 1982 approved publicly -the parks should not be subject to departmental shifting inconsistent with approved plans or as an exception to the California Public Resource code. Prevent special exception laws governing state parks which benefit private rather than public interests. Please explore & consider funding alternatives for future generations.

Please support the position of resorts as a flawed concept for a state park. It is contrary to everything codes that govern state parks stand for.

Sincerely

Kristeen T. Hernandez
719-391-7863
3136 Moonbeam Circle So.
Colorado Springs, Colorado
80916-3207
kristeen24@juno.com

Ex. 48
p. 2 of 2

VAN BLARCOM
LEIBOLD
MCCLENDON
& MANN
A PROFESSIONAL CORPORATION

STEPHEN M. MILES
steve@CEQA.com

THE ROYER MANSION • 307 E. CHAPMAN AVENUE • ORANGE, CALIFORNIA 92866
TEL 714.639.6700 • FAX 714.639.7212

August 4, 2000

VIA FACSIMILE AND U.S. MAIL

RECEIVED
AUG 7 2000
CALIFORNIA
COASTAL COMMISSION

California Coastal Commission
South Coast Area
P.O. Box 1450
Long Beach, CA 90802-4416
Attn: Teresa Henry, District Manager

Re: Appeal No. A5-IRC-99-301; Agenda Item No. Th 9b

Dear Commissioners and Ms. Henry:

In addition to ongoing concerns regarding water quality and the preservation of Crystal Cove State Park, the Alliance to Crystal Cove ("ARCC") presently believes that a Coastal Commission approval of the proposed project subject to special conditions would violate the California Environmental Quality Act ("CEQA"). (Public Resources Code section 21000 *et seq.*) Accordingly, ARCC respectfully requests that the Coastal Commission postpone any further action on the project until CEQA compliance has been addressed and achieved in a manner that provides the public with the appropriate notice and information required by CEQA and its associated regulations. (14 Cal. Code Regs. Sec. 15000 *et seq.*, hereinafter "CEQA Guidelines")

At the present time, the general public cannot ascertain any environmental compliance associated with the changes, modifications, revisions and additions to the project. This appeal process and the associated staff report do not reference any existing environmental impact report ("EIR"). Not until Section G at page 86 of the Staff Report is CEQA even mentioned with respect to the project and this appeal. Sections G explains that Coastal Commission approval of a coastal development permit must be consistent with any applicable requirements of CEQA. Section G then goes on to incorporate findings on conformity with LCP policies and concludes that based on these findings, "the proposed project, as conditioned, will not cause significant adverse impacts to the environment." As explained below, these findings are insufficient and fail to comply with CEQA Guidelines Sections 15162, 15163, 15164 and 15168.

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I. The Public Notice for this Appeal Contains No Statement of Reliance on a Program EIR

EIR No. 569 for phases IV-3 and IV-4 of the NCPC (MCDP Seventh Amendment) was certified completed on July 21, 1998. Orange County Planning Commission Resolution No. 98-09 resolved that "[b]ased on the Initial Study, its is found that [EIR No. 569] serves as a Program EIR for the proposed project." Relevant to program EIR's, CEQA Guidelines Section 15168(e) provides that:

> "When a law other than CEQA requires public notice when the agency later proposes to carry out or approve an activity within the program and rely on the program EIR for CEQA compliance, the notice for the activity shall include a statement that: (1) This activity is within the scope of the program approved earlier, and (2) The program EIR adequately describes the activity for the purposes of CEQA."

With a complete absence of any reference to EIR No. 569, clearly the stated findings required by CEQA Guidelines 15168(e) are not present in the public notice of this appeal hearing required by the Coastal Act. With substantial changes being proposed to a project, it is imperative that the public is informed whether a program EIR is being relied upon, whether the activity being approved is within the scope of the program, and whether the program EIR is adequate for purposes of the current approval. In the absence of this notification, the Coastal Commission cannot presently approve the proposed project without violating CEQA.

II. A Subsequent EIR is Required for the Project Changes

In some instances, like those present, changes to a proposed project or its surrounding circumstances subsequent to the certification of an EIR necessitate the preparation of a subsequent or supplemental EIR. (Public Resources Code section 21166; CEQA Guidelines sections 15162, 15163.)[1] In addition to new mitigation measures sometimes triggering the

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[1]CEQA Guidelines Section 15162(a) provides in full that: "When an EIR has been certified or a negative declaration adopted for a project, no subsequent EIR shall be prepared for that project unless the lead agency determines, on the basis of substantial evidence in the light of the whole record, one or more of the following:
(1) Substantial changes are proposed in the project which will require major revisions of the previous EIR or negative declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;
(2) Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previous EIR or negative declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or

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requirement for a subsequent EIR under CEQA, generally "a substantial increase in the severity of previously identified significant effects" and "new information of substantial importance" also triggers the need for a subsequent EIR under CEQA. (CEQA Guidelines section 15162(a)(1), (2) & (3).) ARCC's position is that Newport Coast Phase IV-3 and IV-4 has resulted in, and will continue to result in significant stormwater impacts that, while previously examined, will be substantially more severe than the analysis provided in EIR No. 569. (CEQA Guidelines section 15162(a)(3)(B).) Specifically, new mitigation measures currently being proposed by the project result in new significant environmental effects or a substantial increase in the severity of previously identified significant effects identified in EIR No. 569. (CEQA Guidelines section 15162(a)(1).)

The Irvine Company ("TIC") cannot avoid the mandate of Public Resources Code Section 21166 and CEQA Guideline 15162(a) merely by stating that the changes to the project are voluntary or that the changes improve upon negative environmental impacts that would otherwise occur. New information of substantial importance exists regarding the magnitude of the hydrological environmental effects and the new mitigation measures proposed result in new significant environmental effects. In light of new beach sand replenishment mitigation measures, and a dry season stormwater flow diversion agreement, clearly TIC has substantially changed the current project in a manner that requires a subsequent EIR.

A. Beach Sand Replenishment Process

The current proposed beach sand replenishment program is clearly information of substantial importance that exemplifies the need for a subsequent EIR affording the public an

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(3) New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified as complete or the negative declaration was adopted, shows any of the following:
(A) The project will have one or more significant effects not discussed in the previous EIR or negative declaration;
(B) Significant effects previously examined will be substantially more severe than shown in the previous EIR;
(C) Mitigation measures or alternatives previously found not to be feasible would in fact be feasible and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; or
(D) Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative."

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opportunity to comment on environmental impacts associated with a new mitigation measure.[2] As noted in the Staff Report, "[t]he project-related changes will result in an estimated reduction in total coarse sediment of 208 tons per year, or 160 cubic yards per year..." (Staff Report, at page 53.) "The project related impacts to sediment supply are all tied to the hydrologic modifications, runoff detention and efforts to maintain the range of peak flood discharge of storm water flows at or below the peak rates of storm water runoff from the area in its natural or undeveloped state." (Id.) Measures to reduce and/or eliminate water flowing to the ocean may result in further reductions in sediment available to replenish the beach. These measures have not been analyzed by the public.[3] Because LCP Policies J4 and K1 require development to "maintain the present level of beach sand replenishment," an "in-lieu fee" has been proposed as an alternative mitigation measure. As the rationale for an in-lieu fee as opposed to an in-kind replacement mitigation measure, the Staff Report explains that a comprehensive beach replenishment program does not currently exist in Orange County:

> "There is not now a full replenishment program that evaluates and guides the use of the most appropriate sites and methods for introducing the material so that it will mitigate this project's impacts and maximize benefits to sandy beaches in the Crystal Cove sub-cell. Absent such a program, the Commission cannot specify a direct in-kind placement of sandy material as mitigation for this particular project." (Staff Report, at page 54.)

The Staff Report further concludes that: "In-lieu fees are particularly appropriate in cases such as this, where although there may be as yet unidentified opportunities for beach replenishment in the future within the Crystal Cove Sub-Cell, in-kind replacement today, by a single applicant, is not an undertaking likely to result in successful resource impact mitigation."

While ARCC questions the accuracy of these last statements, the Staff Report generally explains that in-kind beach sand replenishment (actual mitigation) for this project is not feasible and therefore an in-lieu fee has been adopted as an "oh well" alternative. However, because the in-lieu fee program does not require actual beach sand replenishment to occur, the mitigation

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[2]The beach sand replenishment mitigation measure proposing an in-lieu fee is a substantial change to the project involving new significant environmental effects. (CEQA Guidelines Section 15162(a)(1).) A significant environmental effect of the in-lieu fee includes short term beach erosion for the first five years of the fee implementation. Also, permanent beach erosion is likely thereafter due to the artificial rationale of Special Condition 6 that if a comprehensive, regional beach replenishment program is not in place, the in-lieu fee does not need to pay for beach sand replenishment.

[3]Prior to the proposed diversion and sand replenishment mitigation measures, the development project area was "designed to allow fine grained sediments to pass through the storm drains, eventually reaching the beach." (EIR No. 569, at page 4.4-9.)

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p. 4

measure as proposed remains ineffective and infeasible. Accordingly, the conclusion that LCP Policy J4 has been met is unfounded and not supported by substantial evidence.[4] Adding insult to injury, because a subsequent EIR has not been prepared that addresses the new significant environmental effects of the beach replenishment mitigation measure, the public is unable to comment on whether or not: 1) an in-kind beach sand replenishment requirement is a feasible, successful mitigation measure for Crystal Cove; 2) the Coastal Commission can specify a project specific in-kind mitigation measure, and; 3) an in-lieu fee is a feasible mitigation measure.

In addition to violating CEQA Guidelines Section 15162(a), the mitigation measure currently proposed is substantively invalid under CEQA. As specified in Special Condition 6 "...if a beach replenishment program for the Crystal Cove Sub-Cell cannot be developed within a 5-year period, the funds can be used for general access and recreational purposes within the Crystal Cove Sub-Cell." (Staff Report, at page 56.) Therefore, as previously noted, a likely outcome under Special Condition 6 is that no beach sand replenishment will ever occur at Crystal Cove. Such a mitigation measure violates the CEQA mandate that a public agency shall provide that the measures to mitigate or avoid significant effects on the environment are ***fully enforceable*** through permit conditions, agreements, or other measures. (Public Resources Code section 21081.6(b).) An in-lieu fee mitigation measure that does not have to be spent on activities that actually mitigate the significant impact, is not fully enforceable.[5]

B. Stormflow Diversion Agreement with the Orange County Sanitation District

A condition to approval of the project is the acceptance of the project's summer nuisance flow by the local sewer agency for the life of the project. (Staff Report, at page 2.) Partially in response to TIC's effort to fulfill this condition, the Orange County Sanitation District ("OCSD") passed Resolution No. OCSD 00-04 establishing a dry season urban runoff policy. TIC has proposed a low flow diversion system "designed to intercept and divert ***all dry-weather*** nuisance flows from the area." Adding some clarification to the actual diversion system intended, under the draft terms of an agreement between TIC and OCSD, "Runoff" is defined to mean "surface urban runoff which flows from the Property during the period of April 15th through October 31st of each year." (Draft Agreement between TIC and OCSD, Section III.1.2.)

While the exact details and status of the proposed agreement with OCSD are unknown because no agreement has been executed to date, apparently TIC intends to fully divert runoff

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[4]Under the circumstances that no feasible beach sand replenishment mitigation measure exists, a statement of overriding considerations would need to be prepared. (CEQA Guidelines section 15093.)

[5]In all actuality, the in-lieu fee as proposed is an unconstitutional exaction in that it is levied upon the landowner for beach erosion but can be spent on "general access and recreation purposes." (See, *Dolan v. City of Tigard* (1994) 512 U.S. 374.)

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during the dry season from mid-April to the end of October. This arrangement results in a new significant environmental effect by diverting naturally occurring water from flowing down Los Trancos and Muddy Creek. TIC is not only causing intermittent, ephemeral streams in a Category "A" and "B" ESHA to become perennial, but also manipulating ephemeral streams to remain dry between April and October.[6]

Dry season diversion is a new mitigation measure currently being proposed by the project resulting in new significant environmental effects or a substantial increase in the severity of previously identified significant effects identified in EIR No. 569. (CEQA Guidelines section 15162(a)(1).) Because more standard BMPs failed to achieve compliance with water quality standards, substantial changes to the project's BMPs have occurred after circulation of EIR No. 569. (Staff Report, at page 69.) The absence of a subsequent EIR has forestalled public review and comment on this new diversion mitigation measure. Moreover, a condition or agreement that authorizes the diversion of runoff that also diverts all naturally occurring dry season water from Los Trancos and Muddy Creek that would flow to the Pacific Ocean, would be prohibited by the Public Trust Doctrine. (See, *National Audubon Society v. Superior Court* (1983) 33 Cal.3d 419 [public trust doctrine applicable to appropriation of water from nonnavigable streams that feed navigable waters].)

Once again, because the public has not been afforded an opportunity to comment, modifications to the diversion mitigation measure have not been offered that could result in a legal, enforceable mitigation measure. CEQA provides that "... all agencies of the state government which regulate activities of private individuals, corporations, and public agencies which are found to affect the quality of the environment, shall regulate such activities so that major consideration is given to preventing environmental damage." (Pub. Resources Code section 21000(g).) Thus, the Coastal Commission is required to regulate the activity of water detention, diversion and appropriation so that major consideration is given to preservation of California's public trust resources including ephemeral streams, ESHAs, and the beach and waters of the Crystal Cove State Park and area of special biological significance. At the present time, this can best be done by preparing a subsequent EIR in accordance with CEQA Guidelines Section 15162 for the numerous, substantial project changes being proposed.

III. The Coastal Commission Must Prepare an Addendum to EIR No. 569

Assuming that TIC and its consultant agent are relying on EIR No. 569 rather than preparing independent environmental documentation for the proposed project, at the least, the Coastal Commission is required to prepare an addendum to EIR No. 569 that explains the changes and additions to the project, along with a brief explanation of the decision not to prepare

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[6]An additional new significant effect of the diversion proposal is the treatment by OCSD of pollutants unique to urban runoff that are not subject to pretreatment (contrary to all other industrial discharges handled by OCSD) and not typical for a sewer system.

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a subsequent EIR. (CEQA Guidelines Section 15164.) The explanation must be supported by substantial evidence. (Id.)

For the present appeal, while the addendum need not be circulated for public review, the Coastal Commission is required to consider the addendum and EIR No. 569 *prior* to making a decision on the proposed project. (See, CEQA Guidelines Section 15164(c), (d).) With the absence of an addendum, the Coastal Commission cannot presently approve the proposed project without violating CEQA.

ARCC thanks you for taking the time to review the aforementioned concerns. We look forward to meeting with you in the upcoming week. In the meantime, if you have any questions please do not hesitate to call me or Laura A. Davick, ARCC President.

Very truly yours,

VAN BLARCOM, LEIBOLD,
McCLENDON & MANN, P.C.

By: Stephen M. Miles
General Counsel - ARCC

cc: Laura A. Davick, ARCC President

Ex. 49
P. 7

ALLIANCE TO RESCUE CRYSTAL COVE

"PRESERVE THE PAST, ENJOY THE PRESENT, EDUCATE FOR THE FUTURE."

Fax Transmittal

To: TERESA HENRY

From: LAURA DAVICK
Date: 8/7/00
Subject: Crystal Cove Appeal A5-IRC-99-301

Telephone: (562) 590-5071
Fax: (562) 590-5084
Total Number of Pages (including this cover)

Remarks: TERESA –

JAN VANDERSLOOT ASKED ME TO FORWARD THE FOLLOWING 2 pg. DOCUMENT to you on his behalf. (HE IS OUT OF TOWN ON VACATION).

ALSO, DENNIS KELLY LEFT ME WITH HIS RESPONSE. I BELIEVE HE MAILED THIS TO YOU. (HE IS ALSO OUT OF TOWN ON VACATION). IN THE EVENT THAT YOU HAVE NOT RECEIVED IT... HERE IT IS!

THANK YOU,

LAURA DAVICK

If you have any questions, please call my home office. (949) 494-1968

EX. 50
P. 1

Copies to:

3848 CAMPUS DRIVE, SUITE 209 • NEWPORT BEACH, CA 92660 • PHONE (949) 852-0199 • FAX (949) 852-0480 • E-MAIL: RESCUECRYSTALCOVE@YAHOO.COM

FROM : ALLIANCE RESCUE CRYSTAL COVE * PHONE NO. : 949 497 2257 Aug. 07 2000 03:27PM P1

JAN D. VANDERSLOOT, M.D.
2221 East 16th Street
Newport Beach, CA 92663
Phone (949) 548-6326 FAX (714)848-6643

August 4, 2000

Sara Wan, Chair, and
California Coastal Commission
200 Oceangate, 10th Floor
Long Beach, CA 90802-4416

Re: Crystal Cove Appeal, A5-IRC-99-301

Dear Ms. Wan and California Coastal Commissioners,

I am writing on behalf of the myself and the Alliance to Rescue Crystal Cove (ARCC). I would like to comment on the issues presented in the staff report concerning the Coastal Act Balancing provision (Section 30007.5), the status of the ESHAs, the needlegrass mitigation, the sand replenishment proposal, and Best Available Technology for mitigation of runoff and water quality problems, specifically the use of packaged treatment plants.

1. The Balancing Provision (section 30007.5 of the Coastal Act). The staff is still supporting the interpretation that environmentally sensitive habitat areas (ESHAs) such as wetlands can be built upon with residential and other incompatible uses, balancing these conflicts by concentrating development in close proximity to urban and employment centers, thus proposing that this policy is more protective, overall, than specific wildlife habitat that may be present in wetlands and other ESHAs. However, the Court of Appeals in Bolsa Chica Land Trust v. Superior Court (71 Cal.App.4th 493; 83 Cal.Rptr.2d 850 (Apr. 1999)) specifically struck down this interpretation, stating that "Although the Coastal Act recognizes the value and need for residential development...nothing...suggests there is such an acute need for development of residential housing...that it cannot be accommodated elsewhere". Thus, the proposal in the LCP to allow development on the .05 acres of seasonal wetlands in Planning Area 4A cannot be justified under Section 30007.5, nor can the other areas identified as ESHAs, such as the 5 miles of ephemeral streams, be developed under the Balancing Provision. If the area is an ESHA, it cannot be developed with uses incompatible with the ESHA (Sections 30240) or wetlands (Section 30233), which are ESHAs by definition. Only uses that are enumerated in Section 30233 and 30240 can be put in the wetlands and ESH \s on the property.

2. The ESHAs. The EPA (Environmental Protection Agency), has written a very strong letter (July 19, 2000) raising "major concerns about potential damage to the coastal ecosystem", including "significant degradation of water quality related to the conversion of ephemeral streams to perennial streams; the increased discharge of pollutants; lack of consistency with the Clean Water Act and the Local Coastal Plan; and inadequate mitigation to offset the loss of six miles of ephemeral drainages, riparian areas, and seasonal wetlands." The rest of the EPA letter, and the EPA letter of September 24, 1999, are enclosed by reference. The EPA recommends that the project be revised to avoid filling of 36,000 linear feet of drainages within Muddy Canyon Creek, its tributaries, and portions of Los Trancos Creek, and we concur, citing all the reasons in the EPA letter. Moreover, the new drainages proposed by the Irvine Company will be badly impacted by human intrusion and pets, thus losing their habitat values. Mitigation should include barriers to human and pet intrusion in order to maintain habitat values lost.

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P. 2

JAN D. VANDERSLOOT, M.D.
2221 East 16th Street
Newport Beach, CA 92663
Phone (949) 548-6326 FAX (714)848-6643

3. The Purple Needlegrass mitigation. The project proposes to remove 0.4 acres of Purple Needlegrass, a sensitive natural community, because of road widening and residential development in Planning Areas PA 4A and PA5. The mitigation proposal is to create a 1.6-acre Southern California Needlegrass grassland adjacent to an existing healthier stand of Needlegrass located away from the road (exhibit 2). We suggest the mitigation include removing the impacted needlegrass habitat intact, transporting it to the recipient site, and replanting it. Thus, the habitat included within the needlegrass will not be lost. This will provide the least environmentally damaging mitigation alternative.

4. The sand replenishment program. The proposed sand replenishment program is grossly inadequate. Recent experiences in Southern California show far more costly sand replenishment than what is proposed. Newspaper articles in the Los Angeles Times relate the following costs: Surfside, $6 million to $10 million (LA Times 7/14/2000), Seal Beach $1.1 million (LA Times 1/19/99), Redondo Beach, $2 million (LA Times 7/14/98), Port Hueneme $4.3 million (LA Times 7/7/97), Surfside $7.7 million (LA Times 1/18/97), four communities including Surfside, $9.6 million (LA Times 6/14/96). The Crystal Cove beach can expect to lose sand because of the high volumes of water coming down Los Trancos Creek, scouring out the beach, as seen in the Coastkeeper video of February and March 2000. If an in-lieu fee is to be paid, it should be in the $millions.

5. The Best Available Technology (BAT) for treatment of urban runoff is a packaged treatment plant, where the water is treated on-site to potable standards and re-used in the development. Such facilities are available, are decreasing in costs to the $50,000 range, and should be thoroughly researched and required for the proposed project. Such facilities would significantly reduce the water quality impacts of the proposed project.

Thank you for the opportunity to comment.

Sincerely,

(signed)

Jan D. Vandersloot, MD

cc: Laura Davick, Alliance to Rescue Crystal Cove

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p. 3

FROM : ALLIANCE RESCUE CRYSTAL COVE * PHONE NO. : 949 497 2257 Aug. 07 2000 03:28PM P3

ORANGE COAST COLLEGE

2701 Fairview Rd., P.O. Box 5005, Costa Mesa, CA 92628-5005 Margaret A. Gratton, President

Teresa Henry, District Manager
California Coastal Commission
200 Oceangate, 10th floor
Long Beach, CA 90802-441

Dear Ms. Henry,

I am writing you in response to the contents of the report submitted to your office by the Irvine Community Development Corporation and written by Jeffrey B. Graham, Ph.D. Scripps Institution of Oceanography (June 12, 2000) titled:The Status of Marine Fishes and Mammals in waters near the Irvine Coast Marine Life Area of Special Biological Significance and in relation to other southern California coastline areas. I will confine my comments and response to those parts of his report dealing with the coastal bottlenose dolphin population of Orange County and their use of this unique coastal area and the birthing processes which I have observed and reported at Crystal Cove State Park.

I first became involved with the issues of this proposed development and plans for the creation of a beach-side resort at Crystal Cove back on January 2, 1996 when I wrote and sent a letter to Mr. Kenneth Mitchell of the California State Department of Parks and Recreation. In the later I stated that I was aware of plans for development in this area and that I was concerned for the "Pacific Coast Bottlenose Dolphin (Tursiops truncates) that utilize the nearshore waters off Crystal Cove in a very special way. In fact, the way they utilize this specific coastal area is for the most important thing that these dolphins do – namely reproduction. Crystal Cove is one of only two sites (note: now we know there is one more) along the Orange County coast that dolphins frequent when they are preparing to give birth to offspring. The other spot is far to the south at San Onofre State Park." I further stated that, "It is my belief that Crystal Cove represents a "safe" haven for these dolphins when they are performing this most important of behaviors. The dolphins are not molested at Crystal Cove or at San Onofre State Beach due to two different facts, in my opinion. One is that the human density at these two sites tends to be very low. Secondly, I believe, in the case of Crystal Cove, the long-term residents there are very aware of the dolphins and are careful not to bother them (swim out or paddle out on a surfboard) while this behavior is going on."

I received a response to that letter on February 13, 1996 from Jack B. Roggenbuck, District Superintendent of the Orange Coast District. In it he stated that, "Their (the dolphins) use of this "safe" haven to birth their young genuinely qualifies the location as

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significant to the local population." He went on to state that the lifeguards and ranger patrols were aware of the dolphin activity and would protect the animals from harassment during their visits to the park.

That was all good news to me and indeed, the developer (Mike Freed of Resort Design Associates) of the Crystal Cove Redevelopment Project met with me many times, discussed ways that impacts on the dolphins could be mitigated, and actually incorporated many of my proposals into his final plans for the Crystal Cove Cottage redevelopment project. I was very satisfied with his efforts and plans for that project alone. I said so in a letter to Mary Nichols (Secretary of Natural Resources) that I wrote and sent to her on May 27, 1999.

I must say that this is has not been the case with Irvine Community Development Corporation and their planning and preparation for their "massive" development on the east side of Pacific Coast Highway. At no time in the past have their representatives attempted to contact me to discuss the plans for their development and how impacts on the dolphins might be mitigated. When it came time, legally, for them to evaluate the potential impacts on these dolphins, they hired Jeffrey Graham. Jeffrey Grahams report to you of June 12, 2000 is a perfect example of their attitude toward my discoveries and warnings about impacts on the coastal dolphins.

First of all, Jeffrey Graham is not a marine mammalogist, nor has he published papers about marine mammals. He is a fish expert who specializes in "studies of the environmental adaptation of marine organisms, primarily fishes, and including sharks." He has no experience or expertise in marine mammal study and observation. The reason I mention this is due to the statements he makes in his report concerning the dolphins. They are extraordinary. Please let me share some of these with you.

He begins in the executive summary by describing (very accurately) my reports of dolphin "birthing circles" at Crystal Cove but ends by stating that the phenomena "remains undescribed in the scientific literature." This is absolutely true but needs clarification. I did submit a paper to the American Cetacean Society Whalewatcher Journal on July 12, 2000 (see included report). Between the time I wrote the "unpublished 1998 manuscript" and participated in the several newspaper articles that he mentions, I did what I think even fisheries biologists do when they make a discovery that seems new, unusual, and possibly unbelievable to their colleagues in that science. I met with "all" of my coastal dolphin research colleagues and spoke with them about my discovery, gave them copies of my manuscript and asked them to critique it, and even inquired of people doing coastal dolphin research in other parts of the United States, to find out if they had seen a behavior similar to this. It wasn't until I obtained a video tape of this behavior from a local citizen at a Orange County location that I felt confident to prepare the manuscript I recently submitted to the Whalewatcher journal. Long before that, I even arranged to show the video to my colleagues so that they could evaluate the nature of this unique behavior. All of them urged me to publish on this as soon as possible.

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FROM : ALLIANCE RESCUE CRYSTAL COVE * PHONE NO. : 949 497 2257 Aug. 07 2000 03:29PM P5

Jeffrey Graham goes on to state that, "other scientists experienced in the field observation of bottlenose dolphin at Pacific locations throughout California and Baja California have not observed this particular behavior, although allomaternal behaviors and cows swimming with newborn calves have been observed." My response to this statement is that these people were not looking in the same unique location I was and furthermore, I wonder where and how those newborn calves were born?

He furthermore states that, "The scientific validity of the claim of dolphin birthing circles must await review of the data presented in support of its occurrence. However, as it concerns the Crystal Cove Project, media attention has centered on the "birthing circle" phenomena, in spite of the paucity of scientific documentation." My response is (1.) I have already met with my marine mammal colleagues (several times) concerning this behavior phenomena, (2.) gone over the data and have asked for their input and critique, (3.) showed my colleagues the video of this behavior and asked their opinion; (4.) I have submitted a written report to the Whalewatcher Journal for publication; and (5.) I have submitted an abstract and asked to present a poster paper about my discovery at the American Cetacean Society Conference in November, 2000 in Monterey, California.. I believe this qualifies as scientific documentation in any field of marine biology.

He compounds the problems with his assessment of my discoveries in the body of his report (page 32) by making the extraordinary statement that, "An authority on cetacean behavior who refused to be identified said that he/she was familiar with Professor Kelly's birthing circle descriptions and that he/she has seen the supporting data which he/she judged to be far from conclusive. He/she added that he/she had made no comparable observations on Tursiops truncates in southern California waters." Now maybe this is the way fisheries biologists attack each others findings (anonymously) but it is not the way that it is done in marine mammal scientific circles. But that is not all, he follows this on the same page with the statement, "Another world authority on cetaceans, who did not wish to be identified, said he/she would need to examine the supporting data before reaching conclusions." One wonders, if there are any sources Jeffrey Graham would not stoop to use to dispute my findings.

Jeffrey Graham says in his executive summary that the behavior occurs in other locations in southern California which he then implies makes Crystal Cove of lesser importance to the dolphins for birthing. It does but has only been observed four times in other locations. In my report submitted to Whalewatcher Journal I suggest that the unusual beach, cliff, and isolated conditions available at Crystal Cove are what attract the dolphins to this area and result in over ten observations of this behavior at the state park.

He finishes his assessment by stating that, "The issue with regard to birthing circles and the Crystal Cove Project reduces to the following point. Assuming that this behavior is in fact taking place and that young dolphins are born along the Newport Coast, then the Post-Project conditions established there will improve overall water quality and the coastal environment and will therefore augment all bottlenose dolphin activity in the Crystal Cove area." My response to this is that Jeffrey Graham and the Irvine Community Development Corporation are practicing naïve and wishful thinking.

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Since I first reported my findings and concerns to Mr. Kenneth Mitchell back in January 2, 1996 I have met with the ranger staff and managers at Crystal Cove and discussed my concerns about the dolphins; I have given talks about the dolphins to the park interpretive organization and naturalists; and I personally hand delivered a copy of an excellent newspaper article (from the Orange County Register) about the birthing phenomena to Ranger Manager Mike Eaton at the park headquarters. If you visit Crystal Cove State Park today, try to find any mention of the dolphins presence or use of the park waters, any photographs, or illustrative depictions on any interpretive sign about the dolphins throughout the park. You won't! Look for anything about the dolphins in the interpretive center at the park – there is nothing there! With all of that direct effort on my part and no results, imagine how interested the Irvine Company is in this issue taking into account Jeffrey Grahams report to you. He was hired by Irvine Community Development Corporation simply to dispute legitimate concerns I have about this development and its potential impact on the dolphins and to discredit my findings. He attempted to do so in the most unscientific manner I have ever observed.

I read all of Jeffrey Grahams' report, another by Dr. Richard F. Ford on Water Quality and Marine Ecological Monitoring Studies for the Crystal Cove Development Project; and their report by Larry E. Deysher on the Potential Effects of Coastal Development on subtidal kelp resources. I must say I am definitely not convinced that the Irvine Community Development Corporation will "improve overall water quality and the coastal environment and will therefore augment all bottlenose dolphin activities in the Crystal Cove area". I find that statement outrageous! I believe that this planned development by Irvine Community Development Corporation does not bode well for the future of these bottlenose dolphin when they try to use Crystal Cove for their birthing processes. Once you have had a chance to carefully read all of these reports, I hope you and your staff will reach the same conclusion.

Sincerely,

Dennis L. Kelly, Professor
Marine Science Department
Director of the Coastal Dolphin Survey Project
Orange Coast College
2701 Fairview Rd.
Costa Mesa, CA. 92628

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First Report on Unusual "Nursery" Behavior and Accompanying "Birthing Circle" Formation by Coastal Bottlenose Dolphin in Southern California.

By Dennis Kelly

Beginning in December of 1982 an unusual behavior, never before reported in the literature, was observed exhibited by coastal bottlenose dolphin (Tursiops truncates) during a survey at Crystal Cove State Park in southern California by the Coastal Dolphin Survey Project (CDSP) of Orange Coast College. The behavior has since been designated by the author as "nursery" behavior and the actual configuration of the dolphin group performing the behavior has been named "a birthing circle" (figure 1). The author theorizes that this behavior and configuration was assistance by other dolphins to a pregnant female involved in the process of birthing of a neonate. This behavior has been observed and recorded an additional nine times at the first location (Crystal Cove State Park) and four times at three other locations (figure 2). Images of the behavior and formation were captured on video tape and shared with other coastal dolphin researchers in southern California (figure 3).

It is well documented in the scientific literature that both inshore or coastal and offshore bottlenose dolphin inhabit the southern California Bight (figure 2). Coastal bottlenose dolphin are found from the surf zone to within one nautical mile from shore from as far south as San Quintina, Baja California, Mexico along the coast north through San Diego, Orange, Los Angeles, Ventura, Santa Barbara, and Monterey counties. The dolphins occur in pods of one to over fifty individuals, typically about twenty, foraging along the beaches for food, traveling up and down the coast, playing in the waves, and

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occasionally interacting with human inhabitants (surfers and swimmers). Estimates of their population size vary from as few as three-hundred and fifty (National Marine Fisheries Service, Southwest Fisheries Center) to over eight-hundred (Cetacean Behavior Lab (CBL), San Diego State University). CBL, directed by Dr. R.H. DeFran, has carried out the concentrated, long-term studies of population biology and behavior of these dolphins.

As a result of the CBL research (and that of other organizations and individuals as well) much has been reported about the behaviors displayed by the coastal bottlenose dolphin of southern California. Prior to this discovery, only one other dolphin behavior researcher (Ann Weaver, CBL, 1987 masters thesis) reported a behavior similar to the nursery behavior and birthing circle formation now being proposed. Her description was named "spoke" formation and was described as follows: "a number of animals oriented toward the middle form a circle that may surround an individual". Weaver goes on to include this further description of "spoke" formation: "conference: When Tursiops held conference, a group of dolphins hung at the surface with their fins, and others, their melons and backs exposed for several seconds. They were oriented with their rostrums toward one another in a tight circle or semi-circle. Occasionally, one dolphin was seen lying prone in the center of the circle with all the conferees touching it." Weaver reports that this behavior was rarely observed and she does not report observing the birth of a baby dolphin.

Apparently, according to Weaver's paper, a behavior similar to Weavers "spoke" formation was also observed and reported along the coast of Texas in the 1970's by another dolphin researcher – Dr. Susan Shane.

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The author proposes that "spoke" formation, describe by Weaver was the precursor to or an actual incidence of the formation of a "birthing circle" and the "nursery" behavior that is describe in this report.

The following is an account of this new behavior based on the initial observations made on December 21, 1982 by the author. The additional nine observations made subsequently, between then and January 6, 1997, at Crystal Cove State Park, were similar enough not to warrant additional description. The number of dolphins involved was initially eight and the observations were made by the author between 15:21 to 17:00 from a cliff-top vantage point (less than one-hundred meters above the beach in front of which the behavior took place). The group of dolphins was noticed, and initially drew the authors attention, as they were very close to shore (less than twenty meters) during a high tide and were in water less than four meters deep. What made the behavior unusual and of particular interest was the fact that the pod of dolphins was clustered together, in roughly a tight oval (figure 1) with seven of the dolphins pointing their rostrums into the center of the oval. The eighth dolphin was in the center of the oval and the beaks of the other seven dolphins were either very close to the central dolphin or were actually touching that dolphin. During four years of previous observation and study of these same coastal dolphins the author had never observed or even heard about any behavior sightings similar to the one exhibited by the dolphins on this day. This, combined with the proximity of the dolphin pod to shore, prompted the author to continue observing and recording the dolphins or an extended period of time (two hours and twenty-one minutes). The author's initial hypothesis was that this behavior was a form of epimeletic (care-giving) behavior being administered by the other dolphins to a sick, injured, dying,

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or dead comrade. The author made ten individual counts of this group as they drifted close to shore over a one hour period and the centrally positioned dolphin was observed to move – primarily bending vertically at regular intervals – thus eliminating the possibility that this was a dead comrade. At 16:30 (one hour and nine minutes into the observations) all of the dolphins in the circle, including the dolphin at the center, were seen to suddenly convulse, dive, resurface, roll, and then slowly move about three meters down coast. At this time a neonate dolphin (less than twenty-five inches long) was observed at the center of the oval, next to and touching the flank of the dolphin that the author believes was the mother and the dolphin that had been at the center of the oval. At this time all of the other dolphin present began to touch the neonate with their beaks, flanks, and pectoral fins. At 17:00 all of the dolphins began swimming together down coast and all disappeared from view by 17:10.

In addition to nine other subsequent sightings of this behavior and formation at Crystal Cove State Park, the behavior has been seen and reported to the author occurring at three other sites along the southern California coast (figure 2). The three sites are: Three Arch Bay, Laguna Beach (one sighting); South San Onofre State Beach (two sightings); and White's Point, Palos Verdes Peninsula (one sighting). The author has noted, after visiting all three locations, that the other sites have significant similarities to the initial site (Crystal Cove State Park). These areas all have narrow beaches (approximately 30 meters wide at low tide) and abrupt nearly vertical cliffs (approximately fifteen to thirty meters high) immediately adjacent to the beach. At all but one location (San Onofre State Beach) there are rocky reefs projecting out almost perpendicular from the shore – thus creating sheltered, partially wave-blocked, quieter

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water areas. Finally, at all four locations where the behavior has been observed, the average daily human beach usage appears to be far less than at other city, county, and state beaches in the vicinity (i.e. Huntington Beach, Newport Beach, and Bolsa Chica State Beach). The author hypothesizes that all of these factors may combine, or be a prerequisite, in determining where or not the dolphins choose a location to exhibit this new behavior. The author believes that this behavior has not been reported by others, prior to now, due to the few isolated locations along the coast of southern California where all of the conditions described above occur.

In conclusion, the author wishes first to thank Mrs. Patty Newman of Three Arch Bay, Laguna Beach for providing him with a copy of the very clear and well-focused video (2.5 hours long, beta format) of this behavior that she recorded on December 14, 1985. Mrs. Newman made the recording from the deck of her patio overlooking Three arch Bay. The video excellently captures several elements of this unusual behavior and formation and was used to obtain the photographs that accompany this article (they were "captured" from the video). The author has already shown the video to researchers at the CBL and would be pleased to allow other interested dolphin researchers to view it as well. Furthermore, the author invites readers of this article to report sightings of dolphin behavior similar to that described in this article directly to him at the telephone number at the end of the article.

Based on the above information and descriptions, the author proposes that this behavior is yet another component in the behavioral repertory of the amazing coastal bottlenose dolphin and is a method by which these dolphins have adapted to living along the crowded coast of southern California. This may be why the coastal bottlenose

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dolphin appear to be thriving here while many other species of local marine life have either been significantly reduced or have been eliminated all together.

Dennis Kelly has been a Professor at the Marine Science Department, Orange Coast College, Costa Mesa, California since 1974 and has been the director of the Coastal Dolphin Survey Project since 1978. His research focus is principally the ecology and population biology of coastal bottlenose dolphin and other sea life. He has a website at http://www.occ.cccd.edu/departments/dolphin and can be reached at dkelly@occ.cccd.edu

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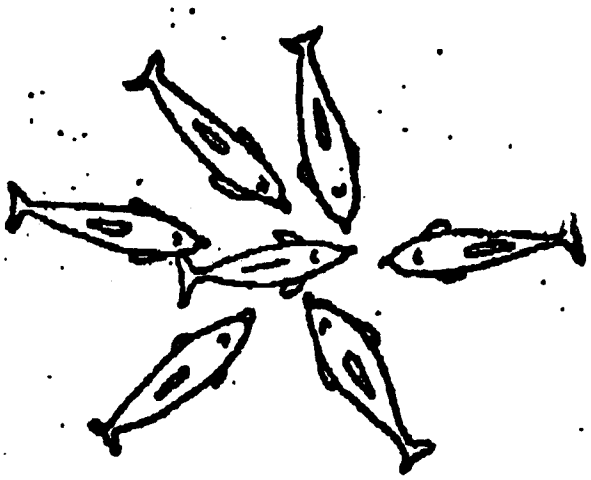

Figure 1: Birthing Circle Pattern

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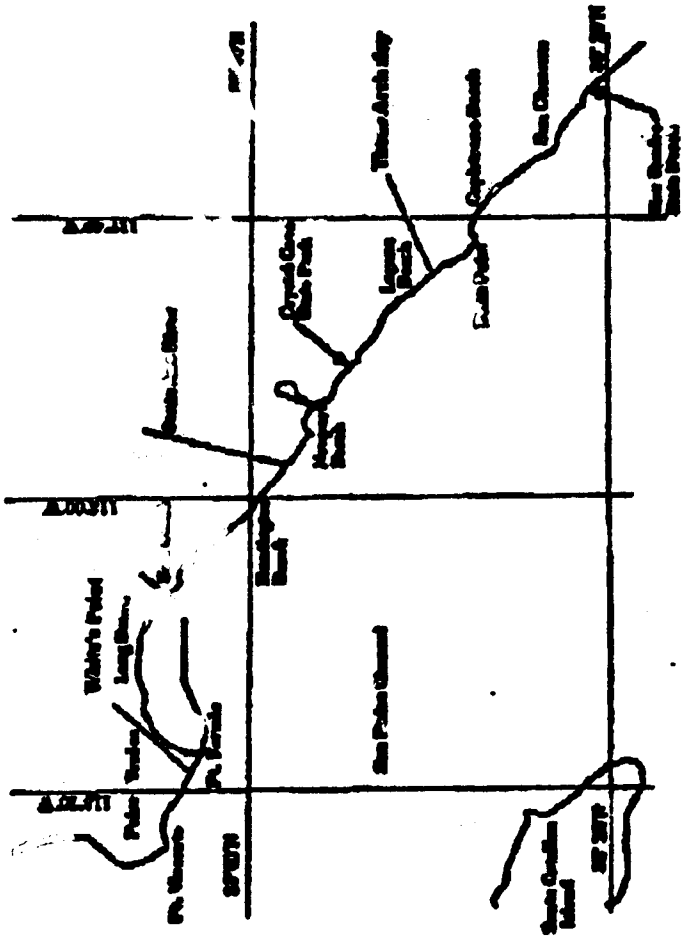

Figure 2

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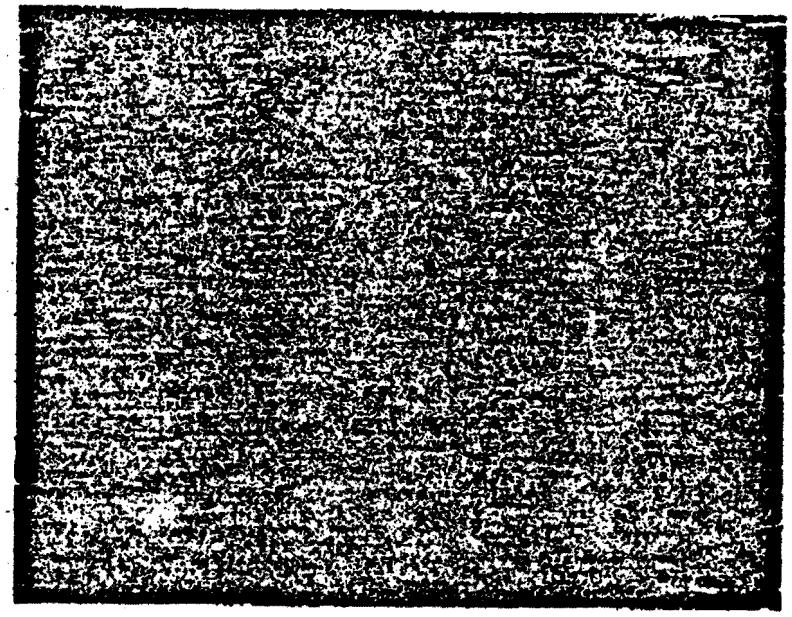

Photograph 1

Photograph 2

Figure 3

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LAWYERS FOR CLEAN WATER

August 7, 2000

Via Facsimile and U.S. Mail

California Coastal Commission
Teresa Henry,
District Manager,
California Coastal Commission
200 Oceangate
Tenth Floor, Suite 1000
Long Beach, CA 90802

Re: Supplement to CoastKeeper Comment Letter on Appeal No. A5-IRC-99-301

Dear Commissioners and Ms. Henry:

The following shall serve as a supplement to our July 20, 2000 comments on behalf of the Orange County CoastKeeper ("CoastKeeper") regarding conformity of the proposed development ("the Development") with the Newport Coast certified Local Coastal Program ("LCP"). CoastKeeper is still in the process of reviewing the documents prepared by consultants of The Irvine Company and/or the Irvine Community Development Company (collectively referred to herein as "TIC"), and reserves the right to make additional comments prior to or during the California Coastal Commission ("CCC") hearing on this matter.

The purpose of this letter is to set forth in writing CoastKeeper's suggested revisions to the July 27, 2000 California Coastal Commission ("CCC") Staff Report. Areas of particular concern to the CoastKeeper include: 1) the beach sand replenishment program; 2) the inadequacy of the attempt to deal with construction impacts, particularly due to exceedances already noted in TIC reports (as also noted by the Department of Parks and Recreation); 3) the inadequacy of the monitoring program's ability to detect impacts (i.e., the need for performance criteria, e.g., California Toxics Rule and the California Ocean Plan; 4) lack of mechanism for dealing with impacts when discovered; impacts to public access on Los Trancos pedestrian tunnel both during construction and post-development; and inadequacies of the agreement between TIC and the Orange County Sanitation District regarding low flow diversions.

Attached hereto are three memorandums from CoastKeeper's consultants. The first is an August 7, 2000 memorandum is from Richard Rollins, of Watershed Advisory Group. It sets forth technical deficiencies of the proposed project as conditioned in the Staff report as well as CoastKeeper's suggested improvements necessary to allow project approval. The next two memorandums are from Montgomery Watson, the first of which sets forth a summary of the analysis Montgomery Watson performed regarding estimates of the size of retention basins needed to capture all the stormwater runoff from the proposed Development for several different storm events. The second memorandum sets forth

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those estimates. This letter will focus on those issues not already set forth in either Rick Rollin's or Montgomery Watson's memorandums.

Recommendations:

1. Grading should be phased and should also be prohibited during wet weather. The monitoring program should be able to detect whether Best Management Practices ("BMPs") are failing. If so, corrective actions should be set forth to remedy this failure. (See Rollin's memorandums).

2. The in-lieu of fee should be replaced with a real beach sand replenishment program. LCP Policies J4 and K1 require development to maintain the present level of beach sand replenishment. However, special Condition 6 states that "if a beach replenishment program cannot be developed within a 5-year period, the funds can be used for general access and recreational purposes within the Crystal Cove Sub-Cell." Thus, beach sand replenishment may never occur. Under the LCP's Runoff Policy, the 10% increase is not allowed if it will effect beach sand replenishment. Because the in-lieu fee will not adequately mitigate for the impacts to beach sand replenishment, this mitigation places the Development out of compliance with the Runoff Policy as well.

3. The monitoring program should be expanded to detect impacts to the water quality of the creeks and ocean, the stability of the creeks, and to the beach sand replenishment. (See Rollin's memorandum) CoastKeeper agrees with the concerns expressed by the Environmental Protection Agency regarding these issues.

4. Flow meters should be required to detect discharges from the Development.

5. In order to ascertain whether the BMPS are effective in protecting the water quality of the creeks and ocean, performance criteria or water quality standards should be set forth in conditions 5 and 14. The appropriate water quality standards are the California Ocean Plan for ocean waters and the California Toxics Rule for inland waters. (See Rollin's memorandum)

6. An expansion of the detention basins should be considered to assure they are adequate to deal with both the impacts of the increased volume of runoff (volume will double per the Tettemer report) and the pollutant load carried in the runoff. (See Rollin's and Montgomery Watson memorandums) In addition to their inadequate size for flood control purposes, CoastKeeper also has deep concerns over the fact that five out of the six basins have little to no treatment capacity.

7. We agree with the concern noted by the Department of Parks and Recreation in their August 2, 2000 letter regarding concerns about the

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responsibility and liability for the long term management, repair and replacement of components of the stormwater management system and dry weather diversion system. CoastKeeper's consultants as well as other consultants have opined that these systems have a high degree of failure if managed by homeowner associations. A more appropriate method for a development of this magnitude would be to turn the systems over to an expert stormwater treatment agency.

Low Flow Diversion Agreement with Orange County Sanitation District

As part of their March 7, 2000 revised project description, TIC lists a number of measures they have taken to comply with the LCP, such as devising a water quality program to divert dry season flows from the 7th amendment area and other planning areas (for example, they list 2B, 2C, 3A, 3B, 10B, 13B and 14) to the Orange County Sanitation District's ("the District") facilities. According to the District's Resolution No. OCSD 00-04 (see attached) and a *draft* Agreement for Capacity Discharge of Dry Season Urban Runoff Into Sewerage System ("the Agreement") with TIC, the District will take all the Development's dry weather run-off flows on a permanent basis. As an initial point, CoastKeeper agrees with the Department of Parks and Recreation that all nuisance flows could and should be diverted from the Development, regardless of the season. We understand TIC has requested this from the OCSD, and support that request.

CoastKeeper would like to point out that the Agreement is still in draft form. As of today, the District has not finalized the agreement with TIC. Besides the uncertain future of the Agreement, CoastKeeper is concerned with the following logistics of the agreement and specific provisions therein.

First, it is unclear from TIC's documents how the discharges will be released so as to go to the District. TIC says only, "the well/pump system would need to be located on State Parks land in order to fully capture all of the development flows." (See page 5 of Andriette Culbertson's March 7, 2000 letter to Teresa Henry regarding a revised project description for de novo Coastal Development Permit for Newport Coast). TIC has yet to present a detailed plan demonstrating how the flow would be captured so that the impacts associated with the diversion can be analyzed.

Second, the District has reserved the right to terminate its agreement with TIC. Notwithstanding, TIC has not, to CoastKeeper's knowledge, established a contingency plan in the event that the District terminates the Agreement. According to the Agreement and to Resolution No. OCSD 00-04 which sets forth the Dry Season Urban Runoff Policy, the District may terminate the contract if *any* of the following occur after TIC has been granted initial permission to discharge: (1) payment obligations are not met, (2) the discharge deviates from requirements set forth in the District's Ordinance No. OCSD-01, (3) the permittee (be that TIC or TIC's assignee) fails to self-monitor for the pollutants on a quarterly basis and submit reports to that end, (4) the permittee hinders the District's access to the diversion and run-off locations, (5) *the District General Manager finds that runoff discharge is adversely affecting the District's functions*, or (6) the permittee refuses to build additional facilities to keep the runoff from adversely affecting the District's functions when requested by the District. The District has also reserved the right to temporarily reject runoff while such

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problems are remedied. TIC must have a feasible contingency/alternative plan to account for the possibility of a temporary or permanent loss of the District's facilities for diversion of runoff.

Third, TIC has reserved the right to assign the Agreement and consequently, the responsibility for safe discharge of run-off, to its anticipated Crystal Cove Community Association. CoastKeeper recommends that CCC condition the coastal development permit on TIC turning over the low-flow diversion system to an expert stormwater treatment agency. An alternative approach would be to have TIC execute and record a deed restriction to run with the land that will incorporate all terms and conditions placed by the District on TIC's Development. Safe discharge of runoff will only be assured for the lifetime of the Development by such a deed restriction that runs with the land, as opposed to allowing transfer of responsibility and liability by contract or Covenants, Conditions, Restrictions, and Reservation of Easements ("CC&Rs"). CCC required this sort of deed restriction on Treasure Island and we recommend a similar arrangement for this property if the first alternative is not required.

If the homeowner's association is made subject to the discharge rules set forth by CCC and OCSD, there must be provisions in *TIC's agreement with OCSD that allow OCSD* to fine the association and the homeowners for violating the discharge regulations. A performance bond could be posted in advance to insure compliance with this element.

Fourth, several changes should be made to Section 4.3 of Part III of the Agreement between OCSD and TIC. Pursuant to the self-monitoring requirement, a thirty-day testing period should be used with current results made promptly available to the public via an Internet site. If high levels of pollutants are detected with the thirty-day testing regime, testing should then be done daily with results also published for public review on an Internet site. In addition to self-monitoring done presumably at the diversion location, there should be annual monitoring for pollutants of concern in the Crystal Cove ASBS.

Fifth, CoastKeeper recommends that another section be added to the Section 5 series of Part III. The agreement between OCSD and TIC should allow for external enforcement via judicial review by petition of any California citizen. If a public group or citizen prevails in an action against The Irvine Company or the homeowner's association, the petitioner should be awarded attorneys' fees and costs. The agreement between OCSD and TIC must create liability for environmental damage so that there are consequences for illegal actions.

CoastKeeper recommends that the CCC work with TIC and OCSD to make the foregoing changes to their agreement to move towards compliance with the LCP. CoastKeeper also recommends that the CCC implement the suggested revisions to bring the Development into compliance with the LCP. Thank you for your careful consideration of this matter.

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Sincerely,

Kim Lewand

Kimberly Lewand

cc: Ann Cheddar
Jack Gregg

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Watershed Advisory Group

TO: Susan Jordan, LFCP and Garry Brown, OCCK, Kim Lewand and Daniel Cooper, LFCW
FROM: Rick Rollins, Watershed Advisory Group
DATE: 3 August 2000
SUBJECT: Technical Issues With Crystal Cove

1. Introduction

   a) This is a response to CCC Staff questions and problems in the Staff Report

   b) Main Issues

      i. Ford Monitoring Deficiencies

      ii. Deficiencies of the Mangarella and Strecker Report

      iii. Issues not clearly addressed in Irvine Documents or CCC Staff Report

         - Impacts of Fine Sediment
         - Direct Discharges
         - Inadequacy of Currently Proposed Measures

      iv. Improvements Necessary to Allow Project Approval

2. Limitations of this review

   - Review of Ford Analytical Results not yet complete.
   - Drawings from Irvine – Although we and the CCC received a large number of consultant reports, we have not been able to review a current, complete set of construction drawings to verify the location of construction project features regarding drainage.

The information contained in this transmittal is intended only for the use of the individual or entity to which it is addressed and may contain information that is privileged, confidential and exempt from disclosure under applicable law. If you are not the intended recipient, you are hereby notified that any use, dissemination, distribution, or copying of this communication is strictly prohibited. If you have received this communication in error, please notify us immediately by telephone, and return this original message to us at the above address by mail. Thank you.

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- The comment has been made by Coastal Commission staff that OCCK should submit data or studies to contradict what Irvine's consultants have submitted in their reports. Unfortunately, due to the resources involved in producing and the ongoing revisions of the Irvine documents used to support this application, OCCK has neither the time nor financial resources to meet this request.

3. Ford Monitoring Deficiencies

a) Current Conditions Skewed Baseline –

i. The Ford Studies don't mention the several hundred acres of recently graded bare soil in the Los Trancos and Muddy Canyon Watersheds that were the source of considerable erosion and sediment during the monitoring period.

- The increased erosion and flow carried a high concentration of Total Suspended Solids (over 35,000 mg/L in Muddy Canyon. Cotton, Shires Report, 12 April 2000)

- **Result:** Tons per hour of fine sediment deposited in the ASBS during and after small (less than 2yr.) rain events

ii. The watershed chosen as a control, Emerald Canyon and Emerald Bay, is already contaminated.

- Water chemistry results indicate toxic levels of pesticides and heavy metals in several samples. The minimal toxicity testing that has been conducted indicates chronic and acute toxicity in the whole effluent sample. Even a deep water marine sample is contaminated in Emerald Bay (Table 27, Sample EC2, 11:30 am, 6 March 2000, exceedances in dissolved lead and total and dissolved copper).

- These chemistry results along with other toxicity test results from Emerald Canyon actually indicate that runoff from developed areas is potentially toxic and the same toxicity should be expected from the developments underway at Crystal Cove.

- Using an already degraded receiving water as a reference by which the degradation of another water body can be

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measured is, at best, a questionable experimental design, and at worst, an attempt to obscure the magnitude of degradation that may be indicated by sampling results.

iii. Reliance on Dilution –

- Significant quantities of toxic pollutants are being discharged from developed areas and toxicity studies confirm toxic levels of metals and pesticides in those discharges

- Ford states "These nearshore processes help to prevent adverse effects of runoff on the adjacent marine environment." (page 27 of 1Q2000 Report).

- In addition to designation as an "Area of Special Biological Significance," the offshore area of Crystal Cove is also an "Underwater State Park" and a "Marine Life Refuge" as designated by the California Department of Fish and Game.

- Reliance upon dilution will not, in the long run, preserve the high water and sediment quality required to maintain ecological beneficial uses indicated by these designations. In other words, the impacts of the discharge of these toxic pollutants will accumulate over time to degrade the ASBS over time.

iv. Bias in Presentation of Results –

- The 1Q2000 Ford sampling results indicate at least 150 water quality (page 28 of Analytical Report) exceedances and at least 9 animal studies showing statistically significant toxicity in the discharges.

- In spite of these results, the 1Q2000 Report concludes: "Based on the evaluations completed thus far, the results of these toxicity tests provide further confirmation that freshwater and nearshore marine habitats associated with Muddy Canyon and Los Trancos Canyon watersheds were affected little, if at all, by the chemical constituents of storm and dry-weather runoff during the period January—March, 2000." (page 29 of 1Q2000 Report)

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- To state that there is little, if any, effect from over 150 exceedances of Federal and State water quality limits in the receiving water and direct toxicity measured by the number of dead test organisms stretches the meaning of an "objective" review.

b) Fundamental Design Flaws of the Study

i. Neglects Chronic Water Quality Objectives for Toxic Pollutants –

- The 1Q2000 Report focuses only on acute limitation exceedances and makes no effort to evaluate the analytical results of storm flows for exceedance of chronic limitations (CCC).

- Since there are many instances where exceedances of freshwater CMCs persist for several hours or even 24 hours from the first occurrence, the chronic limitations are the relevant limit and the Report should also identify exceedances of CCCs so that duration of those exceedances can also be evaluated. (*Technical Support Document for Water Quality-based Toxics Control*, EPA/505/2-90-00, March 1991, "TSD", page 71).

ii. Full List of Toxics in the CTR and the Ocean Plan Not Tested –

- One objective of the study is to "establish baseline or pre-development conditions of water quality, against which future measurements can be compared." This objective cannot be met if data is not present in the baseline database for all toxics listed in the CTR and the Ocean Plan.

- Therefore, the full list of toxics in the CTR and the Ocean Plan should be tested for.

iii. Inappropriate Analytical Methods Used –

- Toxicity levels for Diazanon are presented in Table 106.1 of "Diazanon Sources in Runoff From the San Francisco Bay Region" (Watershed Protection Techniques, Vol. 3, No. 1, April 1999, pages 614. Lethal concentrations range as low as 150 ng/L. Yet, the analytical method used by the Ford Monitoring Team has a reporting limit (RL) of 500

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ng/L and a detection limit of 160 ng/L. Therefore, a non-detection indication in the results does not warrant that the sample is not lethal.

- The 1Q2000 Report states "It is extremely significant that these 26 organophosphorus pesticide compounds were not present above laboratory reporting limits for any of the samples taken in or offshore of Los Trancos and Muddy Canyons during runoff from the four storms sampled. This is strong evidence that these compounds did not represent a problem in runoff from Los Trancos Canyon or Muddy Canyon during the storm season of 2000." (page 18)

- The fact that the RL for Diazanon is over 3 times the lethal limit contradicts this conclusion in the 1Q2000 Report because the analytical methods are inadequate to make such a conclusion .

iv. Toxicity Studies Are Not Valid Because of Lack of Species –

- "When toxicity tests are required in order to make decisions regarding appropriate next steps in a screening protocol, **EPA recommends as a minimum that three species (for example, a vertebrate, an invertebrate, and a plant) be tested for a minimum of a year.**" (TSD, page 59, [emphasis in original])

- Since the present studies are being conducted with only one organism in fresh and one organism in salt water, additional species should have been used and should be used in future testing.

- Since toxicity has already been documented in the minimal testing that was recently conducted, the need for adequate toxicity monitoring is critical.

v. Discounts Relevance of Total Concentrations –

The 1Q2000 Report makes a dubious distinction betw an Total and Dissolved Concentrations of Toxic Pollutants that "most of the toxicity to aquatic organisms is produced by the dissolved form of the trace metals, rather than the

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total recoverable form.

- In fact, the EPA process by which the applicable limits are determined includes a translator factor for the dissolved limit conversion to the total limit.

  Therefore, these results indicated water quality in the streams that exceed ambient water quality limits.

vi. Discounts Warning Properties of Chronic Toxicity Testing –

- The 1Q2000 Report suggests that chronic toxicity is not appropriate because of the short duration of exposures to storm water runoff. However, chronic testing may indicate the presence of a toxic combination of chemicals which may, by themselves, be non-toxic at present concentrations. Chronic toxicity testing can also indicate the presence of a toxic chemical that has not otherwise been detected because it was not being analyzed for.

- If toxic conditions already exist under the relatively mild runoff conditions already experienced, then chronic toxicity tests provide a warning that intervention to prevent actual toxicity in the ASBS is probably warranted.

- If the 1Q2000 Report authors are now strenuously objecting to the requirement to conduct chronic toxicity testing, why weren't those objections raised during formulation of the monitoring plan?

vii. Completely Ignores Direct Discharges to the Beach and ASBS

- The Tettemer and Associates **Revised Runoff Management Plan Hydrological Analysis Executive** Summary, April 2000, indicates that 3 culverts will continue to discharge directly to the Pacific after development in addition to Muddy and Los Trancos Creeks.

- Based on the post development 100 year return period flow rates, the direct discharges represent almost 12 per cent of the total drainage flow.

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- No sampling, flow measurement, or other observations of these direct discharges were attempted or even mentioned in the Monitoring Plan by the Ford team.

4. Sediment Generation, Transport, Deposition and Effects

- In the Ford Reports, concentrations of 7600 mg/L to 18,000 mg/L Total Suspended Solids (TSS) were measured downstream of construction in the Los Trancos and Muddy Canyon Watersheds.

- In the Cotton, Shires Report (12 April 2000), which The Irvine Company did not provide to the Coastal Commission, levels of 4500 mg/L to 35,600 mg/L were measured in the Muddy Creek on 5 and 8 March 2000 (an approximately 0.5 inch event not sampled by the Ford team).

  Mangarella and Strecker (Crystal Cove Stormwater Quality Evaluation Report, 14 June 2000, page 36) suggest that background concentrations in Muddy Creek are "approximately 2000 mg/l" TSS which indicates that up to 33,000 mg/l TSS load may be attributable to the current construction practices of Irvine.

  If the multiple instances of heavy metals exceedances are related to high suspended solids concentrations, as the 1Q2000 Report suggests, then these construction related mass loadings of suspended sediment are likely the source of those exceedances.

a) Sediment Transport Rates –

- The Chang Sediment Yield Study (May 2000, page 16) states that "Fine sediments are responsible for the muddy appearance of storm water; they do not settle in large quantities in such small floodwater detention basins."
- Therefore, the high load of fine suspended sediments in Muddy and Los Trancos Creeks is not ameliorated by the proposed detention ponds and will have the effect of depositing silt and clay in the creek beds and in the ASBS.

- The Cotton, Shires Report estimates that up to 5.60 tons/hour of silt and clay is delivered from Muddy Creek alone (presumably, the majority originates in the Construction area) to the ASBS. That rate is achieved

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during a less than 2 year 24 hour storm.

- No Irvine report addressed the long, middle or short term consequences of the continuous disturbance of steep slopes that is a necessary part of the long term Irvine construction program.

b) Effects of High Suspended Solids Loading –

- Page 25 of the Noble Report (Third Party Independent Review, 29 June 2000) states that "offshore samples [of sediment] are finer than those on the beach, so apparently they have been sorted from the beach material by wave and current action." This indicates that the fine sediment may be deposited on or near the beach with the rest of the coarser sediments (beach sand, gravel, etc.) but wave action carries the fines out to deeper water where they settle to the bottom.

  The net result is that tons of silt and clay sized sediments are being and will be delivered through Muddy and Los Trancos Creeks to the ASBS from the Irvine construction activities for the foreseeable future without benefit of analysis by any of Irvine's consultants.

- This accelerated rate of fine sediment deposition has the effect of covering rocks and reefs that have historically been the holdfast points for kelp. Anecdotal reports from local divers indicate that few, if any, of the rocks where kelp was historically present in Crystal Cove are still visible through the sediment.

- The result is that kelp spores cannot attach to a solid surface and kelp cannot naturally reestablish at this disturbed location.

5. Mangarella and Strecker Evaluation with Review by Sternstrom

Irvine retained Peter Mangarella and Eric Strecker to perform a modeling exercise of the proposed "BMPs" in use at the development once all construction is complete. The report's conclusions primarily focus on flow to Muddy Creek. Based on the "background" levels in Muddy Creek, the "trace elements...show a modest reduction with BMP implementation." Los Trancos "runoff

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concentrations are...low compared to background and meet acute CTR water quality objectives in Los Trancos Creek, which is the RWQCB's compliance point for the project."

a) Problems with Mangarella and Strecker Evaluation

i. The reductions are primarily based on the low concentrations from the development before the BMPs rather than the effectiveness of the BMPs themselves. Values used are from recent LA County Data.

- This model is an excellent example of controlling the outcome by carefully selecting the input data. For example, the highest suspended solids data input to the model from the development is assumed to be 118 mg/L. This is a low value for at least two reasons. First, it is average data from residential areas in LA, most of which are not on steep hillsides.

- Second, it is event mean concentration (EMC) data which is the average concentration of many samples taken during a many hour event. Since an exceedance of CTR acute levels need only persist for a short time for toxicity to be present, the EMC is not the relevant value for determining whether the receiving water will meet the CTR limits.

  While it would be possible to use existing data to determine what fraction of the discharges would not meet CTR or OP limits; the authors have not done this. They have instead relied upon averages to imply that the discharges will comply with applicable limits.

  There is no consideration of the fact that almost all irrigation on the developed site will be recycled WWTP effluent. This means that all metals and most other contaminants in the effluent will be concentrated on the surfaces of the development by evapotranspiration. Then a substantial fraction of these pollutants will be washed off into the receiving streams by storm events.

- By limiting themselves to only comparing the results with the CTR and not the Ocean Plan limits, the authors are able to make a favorable comparison. A comparison of the

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results to Ocean Plan limits shows that the projected discharge levels would result in several exceedances.

- In addition, the CTR freshwater numbers have been calculated with the highest allowable hardness level (400 mg/l). This assumption is not supported by the direct sampling results from the Ford Studies. Over half of all the hardness samples analyzed during 1Q2000 had results less than 400 and approximately 9 were under 100 mg/L. Based on these hardness levels in the 100 mg/L range, the average copper effluent concentrations projected in the Mangarella and Strecker Report would exceed CTR limits approximately 15 per cent of the time.

ii. There is no consideration of construction impacts on the quality of effluent leaving the site. Construction of this and related projects has gone on for several years already and will continue for approximately another decade. The very high sediment load to the ASBS from these construction activities continues to be systematically overlooked by Irvine's consultants.

iii. There is no consideration by the model of effects of pesticides in runoff from the developed area.

- In the Ford Reports, pesticides are believed to be the source of toxicity in the cases (Emerald Canyon and Los Trancos) where toxicity testing resulted in test organism deaths.

- On page 15, the statement is made that "use of pesticides and herbicides will be kept to a minimum." No estimate of discharge levels is made.

- "It should be noted that residential source areas monitoring indicated that 'proper use' still produced very high Diazanon levels, even when label directions were scrupulously followed."(Watershed Protection Techniques article faxed to the Coastal Commission).

- Both Commission Staff and this report discount this source of toxicity which has already been documented as a problem in the developed "control" area Emerald Canyon. The approach of source control is not effective for these materials because there is no mechanism to ensure low

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levels. In addition, no proposed BMP has any documented ability to reduce pesticide levels to non-toxic levels.

- None of the proposed methods will be effective in controlling pesticides, which have already been shown to be toxic in these watersheds.

iv. None of the BMPs have been designed to control greater than 80 per cent of overall rain event flows. Based on the Mangarella and Strecker Report 5 out of the 6 basins (Basins 1-5) are for flood control purposes only and have no treatment value.

- Stenstrom raises concern about the sizing when he states that "The success of these basins will depend...on their detailed design...I do not know of the plans for the detailed design." Apparently Stenstrom was not aware that **basins 1-5 are for flood control purposes only and will have little or no impact on the water quality reaching the streams.**

v. To conclude, Mangarella and Strecker's Evaluation ignores or discounts important water quality considerations and uses very selective modeling to give the impression that all water quality requirements will be met. In fact, for several reasons not addressed in the Evaluation, and set forth above, toxic levels of pollutants will likely be released to the Creeks and the ASBS by the development for the foreseeable future.

6. Additional Measures to Assure Permit Compliance Through Monitoring –

a) As evidenced by sampling already conducted, current construction, occupancy, and monitoring practices used in recent developments are not adequate to protect the creeks or the ASBS from continuing degradation.

b) Successful methods currently used by industrial companies to manage their compliance efforts generally rely on peer review, auditing and enforceable corrective action programs.

- The project should be required to utilize a technically qualified review panel to approve monitoring plans, results, and interpretations. All actions of the review panel would be subject to public review and comment.

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- Goals of the permit requirements would be performance based (i.e., the discharge quality would have the specific, well-defined limits set forth in the California Ocean Plan for ocean waters and the California Toxics Rule for inland waters, as mandated by state law), and the monitoring program would be designed to measure the performance as directly as possible including automatic sampling and flow measurement.

- When performance goals are not met, specific predefined actions are taken (i.e. construction work stops) until corrective actions are fully implemented. Stipulated penalties could be required to insure compliance with this element.

- If performance requirements are not met, the discharger must present acceptable corrective actions to the review panel within a short, set period (i.e. 30 days). A performance bond could be posted in advance to insure compliance with this element.

  Annual or more frequent audits of the monitoring methods and results should be conducted to assure that the monitoring program is properly carried out.

7. Conclusion –

- Potential or actual damage is already occurring in Los Trancos and Muddy Creeks and the Crystal Cove Marine Wildlife Refuge/ASBS. The toxicity observed at the Emerald Canyon sampling station indicates the potential harm that the discharge could produce once Crystal Cove is developed.

- The high TSS levels measured in Muddy Creek indicate the runoff conditions that exist under Irvine's current construction practices. The combination of toxicity and high suspended sediment observed in Los Trancos indicates the flow conditions that can be expected as the Irvine development of Crystal Cove proceeds over the next several years with a mixture of construction and completed development.

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- Unless specific performance requirements with appropriate contingency measures are incorporated into Irvine's permits, the Marine Wildlife Refuge/ASBS is likely to be temporarily and perhaps permanently degraded.

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MEMORANDUM

MONTGOMERY WATSON

To:	Michael Drennan	**Date:**	July 28, 2000
From:	Kevin Slovarp/Steve Mano	**Reference:**	1026635.011801
Subject:	Newport Coast Crystal Cove Retention Basins		

INTRODUCTION

The purpose of this memo is to provide estimates of the size of stormwater retention basins needed to capture all the stormwater runoff from the proposed Crystal Cove Development for several different storm events. To begin analyzing the viability of on-site retention basins at the Newport Coast Planned Community in Newport Beach, we have done some initial analyses based on the Tettemer and Associates "Newport Coast Planned Community Revised Runoff Management Plan Hydrologic Analysis" report dated April 2000.

The Tettemer report analyzed and recommended a series of six detention basins to reduce the post-development peak discharges in the Los Trancos and Muddy Canyons to less than pre-development rates. However, the Tettemer report states that flow volumes and durations have generally increased from the pre-development condition in the areas downstream of the proposed detention basins. The hydrologic sub-basins tributary to each of the detention basin sites were summarized in a memorandum from Brad Wolaver and correspond to the hydrologic analysis contained in the Tettemer report.

We have performed a simplified analysis of runoff volumes from various return period storms at the six basin sites in order to determine the potential for retaining runoff from the development. It is noted that the Tettemer work used solely the 100-year, 24-hour design event.

We stress that this preliminary approach needs to be analyzed in further detail using hydrologic modeling before further design work is done on this project. The goal of this rough analysis is to provide an *approximate* runoff retention volumes at the six sites.

ANALYSES

For the purposes of this analysis of on-site retention basins, we have looked at the 2-, 5-, 10-, and 100-year return periods. Since hydrologic modeling is not available for the 2-, 5-, 10-year return periods nor was retention (zero outflow) analyzed by Tettemer and Associates, we have made some simplifying assumptions and have performed several analyses. Please note that

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Rivertech may have hydrographs for these return periods as part of the sediment analysis (see page 20 of the Tettemer study).

Totally Impervious Area

The only data available for the 2-, 5-, and 10-year events are their rainfall depths; the 2- and 10-year depths are from the Orange County Hydrology Manual and the 5-year depth was interpolated using log-probability paper. As a most-conservative approach, we have first assumed that all rainfall turns into runoff. This represents the development having all impervious areas. Table 1 lists the rainfall depths for the four return periods. Table 2 summarizes the area tributary to each of the six retention basin sites, the 2-, 5-, 10-, and 100-year rainfall depth and resulting runoff volume.

Table 1
Rainfall Depths

Return Period	Rainfall Depth (24-hour event), in inches
2-year	2.05
5-year	2.96
10-year	3.68
100-year	5.63

Table 2
Retention Basin Volumes – Totally Impervious Area

Basin Name	Watershed Area (ac)	Retention Volume, in ac-ft			
		2-year	5-year	10-year	100-year
1	92.85	15.9	22.9	28.5	43.6
2	82.10	14.0	20.3	25.2	38.5
3	179.66	30.7	44.3	55.1	84.3
4	104.60	17.9	25.8	32.1	49.1
5	6.20	1.1	1.5	1.9	2.9
6	201.00	34.3	49.6	61.6	94.3

Partially Impervious Area

The second analysis assumes that 60 percent of the areas are impervious and 40 percent are pervious. Of the pervious areas, it is assumed that the first half inch of rainfall infiltrates and the remainder runs off. These are both simplifying assumptions for the purposes of this rough analysis and should be modeled appropriately at a later date.

Table 3 summarizes the results of this portion of the analysis.

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Table 3
Retention Basin Volumes – Partially Impervious Area

Basin Name	Watershed Area (ac)	Retention Volume, in ac-ft			
		2-year	5-year	10-year	100-year
1	92.85	14.3	21.4	26.9	42.0
2	82.10	12.7	18.9	23.8	37.2
3	179.66	27.7	41.3	52.1	81.3
4	104.60	16.1	24.1	30.3	47.3
5	6.20	1.0	1.4	1.8	2.8
6	201.00	31.0	46.2	58.3	91.0

Revised Partially Impervious Area

The 'partially impervious' analysis indicates that the results may be overly conservative compared to the results extracted from the Tettemer report. Further refinements of our 'partially impervious' analysis have been made to include a reduction of the runoff from the impervious areas such that 85 percent of the rainfall runs off (rather than 100 percent) and the first 1.5 inches of rainfall on the pervious areas infiltrate. The results of this analysis match the results extracted from the Tettemer report rather closely and are summarized in Table 4, below.

Table 4
Revised Partially Impervious Retention Basin Volumes

Basin Name	Watershed Area (ac)	Retention Volume, in ac-ft*			
		2-year	5-year	10-year	100-year
1	92.85	9.8	16.2	21.3	35.0
2	82.10	8.7	14.3	18.8	30.9
3	179.66	18.9	31.3	41.2	67.7
4	104.60	11.0	18.2	24.0	39.4
5	6.20	0.7	1.1	1.4	2.3
6	201.00	21.2	35.1	46.0	75.8

* = 90 percent of impervious area contributes to runoff; first 1.5 inches of rainfall on pervious area infiltrates and remainder runs off

Verification of 100-Year Results

Because we have 100-year hydrologic models in the Tettemer report, we have compared the results for Retention Basins 1, 2, 4, and 5 of the 'total impervious area' and 'revised partially impervious area' analyses with those from the Tettemer modeling. To make this comparison, the inflow hydrograph in the Tettemer model was converted to a volume by summing up the incremental volume (timestep length times discharge at each timestep) at each timestep in their

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hydrographs. These basins were selected because they do not have any additional upstream control (i.e., other detention basins). Table 5 summarizes this comparison.

Table 5
Comparison of Retention Volume Results

Basin Name	Totally Impervious Retention Volume, in ac-ft	Revised Partially Impervious Retention Volume, in ac-ft	Retention Volume based on Tetterner report, in ac-ft
1	43.6	35.0	31.4
2	38.5	30.9	27.0
4	49.1	39.4	34.4
5	2.9	2.3	2.0

Table 6 summarizes the total runoff and partially impervious runoff for each of the six retention basins for the 2-, 5-, 10-, and 100-year return periods. Also included in this table is Tetterner's estimate of the 100-year detention volume at each site.

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Table 6
Retention Basin Volumes – Totally vs. Partially Impervious Area

Basin Name	Watershed Area (ac)	Totally Impervious Retention Volume, in ac-ft				Revised Partially Impervious Retention Volume, in ac-ft				Tettemer Detention Volume, in ac-ft*
		2-year	5-year	10-year	100-year	2-year	5-year	10-year	100-year	100-year
1	92.85	15.9	22.9	28.5	43.6	9.8	16.2	21.3	35.0	13.0
2	82.10	14.0	20.3	25.2	38.5	8.7	14.3	18.8	30.9	11.3
3	179.66	30.7	44.3	55.1	84.3	18.9	31.3	41.2	67.7	14.9
4	104.60	17.9	25.8	32.1	49.1	11.0	18.2	24.0	39.4	**
5	6.20	1.1	1.5	1.9	2.9	0.7	1.1	1.4	2.3	**
6	201.00	34.3	49.6	61.6	94.3	21.2	35.1	46.0	75.[illegible]	27.6

* = Based on Appendix I of Tettemer Report, effective storage of basin at maximum basin capacity, at which elevation water overtops the spillway.
** = Reservoir volume cannot be deduced directly from model.

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2 5
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RECOMMENDATIONS

The purpose of this analysis was to determine the approximate runoff retention volumes at the six basin sites. Depending on the viability of and interest in retention basins at the Newport Coast Planned Community, we may need to further this analysis. It is recommended that some modeling be done to support and refine this analysis before additional work is done. We have not seen any data which would indicate that Tettemer and Associates have not performed 2-, 5-, and 10-year hydrologic analyses appropriate for this work. The modeling for Rivertech's sediment analysis mentioned above utilized 'expected probability' hydrology (per Orange County's Hydrology Manual) which would result in lower peaks and volumes. **Table 7** summarizes the recommended retention volumes at the six basin sites plus the Muddy Creek, Los Trancos, and Crystal Cove watersheds. The results in **Table 7** assume that the Muddy Creek, Los Trancos, and Crystal Cove watersheds will develop to the same level of density as the rest of the hydrologic areas.

Table 7
Revised Partially Impervious Retention Basin Volumes

Basin Name	Watershed Area (ac)	Retention Volume, in ac-ft*			
		2-year	5-year	10-year	100-year
1	92.85	9.8	16.2	21.3	35.0
2	82.10	8.7	14.3	18.8	30.9
3	179.66	18.9	31.3	41.2	67.7
4	104.60	11.0	18.2	24.0	39.4
5	6.20	0.7	1.1	1.4	2.3
6	201.00	21.2	35.1	46.0	75.8
Muddy Creek	732.65	77.3	127.8	167.8	276.2
Los Trancos	1056.50	111.4	184.3	242.0	398.2
Crystal Cove	67.00	7.1	11.7	15.3	25.3

cc: Brad Wolaver, Montgomery Watson
Bill McGivney, Montgomery Watson

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MEMORANDUM

MONTGOMERY WATSON

To: Kim Lewand **Date:** July 31, 2000

From: Michael Drennan, P.E. **Reference:** 1026635.011801

Subject: Newport Coast Crystal Cove Retention Basins

In response to your request, the purpose of this memo is to provide estimates of the size and cost of stormwater retention basins needed to capture all the stormwater runoff from the proposed Crystal Cove Development for the 10-year, 24-hour storm. The following table provides a summary of the sizes and costs of basins needed. The size of each basin was estimated based on a simplified analysis of runoff volumes expected from the 10-year, 24-hour storm.

Estimates of Size and Cost of Retention Basins

Detention Basin	Proposed Source Watershed (Tetterner Fig. 2)	Watershed Area (Acres)	Detention Basin Volume Proposed by Tetterner to Detain 100-yr, 24-hr storm in ac-ft)	Retention Basin Volume Needed to Capture 10-yr, 24 hour storm in ac-ft)	Opinion of Probable Cost to Construct Retention Basins ($)
Detention Basin 1	Phase IV-4	92.85	13.0	21.3	$262,000
Detention Basin 2	Phase IV-4	82.10	11.3	18.8	$243,000
Detention Basin 3	B(1)r	179.66	14.9	41.2	$431,000
Detention Basin 4	A1*	104.60	*	24.0	$281,000
Detention Basin 5	A2*	6.20	*	1.4	$32,600
Detention Basin 6	Dr, Er, M5r	210.00	27.6	46.0	$435,000
Total:					$1,684,000

*Reservoir volume could not be deduced directly from model used by Tetterner.

This is an Opinion of Probable Construction Cost. It is based on these assumptions of construction methodology:

1. The soil is rippable and suitable for backfill.
2. The basins will be constructed by conventional cut-and-fill work.
3. The volume of material handled is equivalent to the volume of storage.
4. Influent structure and spillway are typical for Basins 1,2,3,4 & 6

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5. Basin 5 is much smaller and the costs for structures and spillway are less.
6. A contingency of 25% is uniformly added to the costs of the work to allow for unknown conditions.

It is our understanding from reviewing the Tettemer Report that several areas of the proposed development are not currently being captured in any proposed basins as indicated in the table below. If this is true, additional estimates for size and costs of basins needed to capture stormwater runoff from these areas will need to be determined.

Discharge Locations of Watershed Areas of Crystal Cove Development

Discharge Location	Proposed Source Watershed (Tettemer Fig. 2)	Watershed Area (Acres)
Detention Basin 1	Phase IV-4	92.85
Detention Basin 2	Phase IV-4	82.10
Detention Basin 3	B(1)r	179.66
Detention Basin 4	A1*	104.60
Detention Basin 5	A2*	6.20
Detention Basin 6	Dr, Er, M5r	210.00
Discharge to Los Trancos Canyon	L1	42.5
Discharge to Muddy Creek	M2r	23.6
Discharge above Crystal Cove State Beach	A3*, B(2)r, C	197.2

Note*: The location of Watersheds A1, A2, A3 is unclear in (Tettemer and Assoc., 2000). This nomenclature assumes that A3 is closest to Crystal Cove State Beach, A2 drains to Basin 5, and A1 is furthest upstream, draining to Basin 4.

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VIA HAND DELIVERY

Mr. Peter Douglas
Executive Director
California Coastal Commission
45 Fremont, Suite 2000
San Francisco, California 94105-2219

Re: Appeal No. A5-IRC-99-301: Crystal Cove Development

Dear Mr. Douglas:

On behalf of The Irvine Company ("TIC"), we are writing in response to the letter dated July 20, 2000, from Ms. Kimberly Lewand of Lawyers for Clean Water, on behalf of the Orange County CoastKeeper ("CoastKeeper"), to the California Coastal Commission (the "Commission").[1] The CoastKeeper letter reflects a number of important misapprehensions of fact and law, rendering the letter unreliable and misleading. Also, CoastKeeper ignores extensive, uncontroverted expert opinion based on site-specific analysis of the Crystal Cove development that demonstrates effects to the stream channels directly contrary to the theoretical possibilities that CoastKeeper raises. In short, the portrayal by CoastKeeper of the Crystal Cove development and its impacts on local water resources is contrary to reality and should not be given any weight by the Commission.

[1] We respectfully request that this letter and the materials which we submitted to the Commission by letter dated July 31, 2000, to Mr. Jack Gregg, Ms. Carrie Bluth, and Ms. Teresa Henry be placed in the administrative record for the above-referenced matter.

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I. SUMMARY STATEMENT.

A. Post-Development Runoff Volumes Will Not Increase Erosion, Contrary to CoastKeeper's Assertions.

It is well established that increasing imperviousness during development results in an increase in the amount of runoff during storms. CoastKeeper argues that the increased runoff volumes expected in the Appeal Area will cause erosion in stream channels and associated sediment transport, violating policies of the certified Local Coastal Program ("LCP"). CoastKeeper's argument is based on generalities from the literature as to the *potential* impacts from runoff. Site-specific expert analysis submitted by TIC to the Commission demonstrates that, in reality, the increased volume of runoff will not cause erosion.

A number of experts retained by TIC and Commission staff have observed that the streambeds of the creeks in the vicinity of the development are not easily eroded, as they are armored by large-diameter material that is not subject to transport during runoff events. In addition, TIC retained Dr. Howard Chang, a Ph.D. professional engineer, to assess pre- and post-sediment transport and erosion in the stream channels. He applied assessment methods proven to be predictive of post-development conditions in other basins and incorporated the results of stream bed samples taken specifically for this purpose from Los Trancos Canyon Creek ("Los Trancos Creek") and Muddy Canyon Creek ("Muddy Creek"). He found that the intensity of storm events after development will be less than prior to development because the planned detention facilities will reduce peak runoff flows. This effect more than offsets any potential for increased erosion due to the fact that the duration of the runoff will be longer after development.

B. Erosion and Sediment Control During Construction Will Protect Receiving Waters, Contrary to CoastKeeper's Assertion.

The Appeal Area is upland from Beach Town I, a mixed residential and retail development currently under construction by TIC. The effectiveness of erosion and sediment control measures at Beach Town I indicates that existing conditions in Los Trancos and Muddy Creeks can be maintained during development of the Appeal Area. The effectiveness of these measures is borne out by expert analysis of runoff conditions after storm events, the intensity and type of Best Management Practices ("BMPs") used at Beach Town I, and regulatory review of these BMPs.

CoastKeeper argues that its video of winter 2000 storms shows that TIC construction practices are inadequate to protect receiving waters. TIC hired Drs. Douglas Inman and Scott Jenkins, both associated with the Scripps Institution of Oceanography, to review the CoastKeeper video and conduct their own field reconnaissance of runoff conditions. Their results were reported to the Commission by letter dated July 31, 2000. Drs. Inman and Jenkins concluded that the conditions captured on the CoastKeeper video and observed by Dr. Jenkins after the storm of April 18, 2000, reflect naturally occurring sediment conditions. Furthermore,

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during these storms, runoff from the creeks was not sufficient to form any open ocean turbid plumes.

C. CoastKeeper's Argument for Retention or Treatment of All Project Runoff Is a Red Herring as All Project Runoff Will Be Treated and There Is No Basis in Law for the Retention Requirement Urged by Coastkeeper.

CoastKeeper urges the Commission to require TIC to retain or treat all runoff from the Appeal Area. In fact, the treatment train approach for water quality control planned for the project will result in treatment of all project runoff. TIC's water quality control program for the Appeal Area is state of the practice and in full compliance with water quality control laws administered by the State Water Resources Control Board and the Regional Water Quality Control Board ("RWQCB"), as well as the LCP provisions.

With respect to the retention requirement urged by CoastKeeper, it has no basis in law and is unnecessary because of the extensive treatment BMPs planned for the project. If CoastKeeper wants to advocate for a legal requirement to retain all project runoff from residential development, CoastKeeper can seek such a change in water quality regulation through legislation and rulemaking; it has no place in this project-specific permit appeal. Moreover, retaining all runoff from the Appeal Area is not a practical proposal. Given the steepness of the project terrain, the safest place from an engineering perspective for retention is within the bottom of Muddy Canyon; but this location would not be consistent with the LCP.

D. CoastKeeper's Attacks on the RWQCB-Approved Water Quality Monitoring Program and the Expert Studies Conducted in Conjunction with this Appeal Are Unfounded.

CoastKeeper claims that the expert reports and monitoring studies for the development are inadequate, and that Dr. Richard Ford has not acted objectively in conducting the ongoing water quality monitoring study. These claims are totally unfounded. Dr. Ford, a Ph.D. marine ecologist from San Diego State University, is a respected scientist who has conducted the studies with the appropriate neutrality. The monitoring is being conducted at the direction and under the oversight of the RWQCB, for the purpose of determining receiving water quality conformance with relevant and applicable standards. The studies have been conducted using recognized scientific methods and methodologies reviewed and approved by the RWQCB.

In addition to the water quality monitoring program, TIC has retained a team of experts who have conducted a multidisciplinary review of the various potential impacts of development, including study and evaluation of geotechnology, hydrology, inland biology, intertidal kelp, marine mammals and fish, ocean processes, sedimentology, water budgets, and water quality. These expert evaluations have been conducted by noted experts in their respective fields, relying upon site-specific data and information, and present an accurate and complete picture of the proposed development and its impacts. The Commission even required a

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third-party review of portions of portions of multidisciplinary exercise in order to ensure its objectivity and reliability.

E. CoastKeeper Incorrectly Suggests that the RWQCB Has Been Derelict in Its Regulation of the Development.

CoastKeeper criticizes the RWQCB because it waived waste discharge requirements ("WDRs") for the project. CoastKeeper does not mention that, because of the overall scheme of water quality protection in the State, it is very rare for RWQCBs to require site-specific WDRs for residential development. CoastKeeper does not mention the various water quality controls that must be satisfied pursuant to a waiver of WDRs, or that the RWQCB expressly has reserved its right to issue project-specific WDRs, depending upon the results of the ongoing water quality monitoring program. Of importance, the recently approved NPS Plan, a joint plan of the Commission and the SWRCB, specifically identifies a waiver of WDRs as a proper and effective means to encourage control of nonpoint source runoff.

F. CoastKeeper Makes Important Misstatements of Fact.

- CoastKeeper argues that a turbid ocean plume captured on video on March 8, 2000, derived from Los Trancos Creek. Expert analysis of the video by Drs. Inman and Jenkins indicates that the plume did not come from Los Trancos but, rather, likely came from Buck Gully Creek. During a subsequent storm on April 18, Dr. Jenkins traced a similar sediment plume to Buck Gully.

- It is a matter of established fact that there will be no discharges from the Appeal Area directly to the Ocean. CoastKeeper argues that there will be three such discharges. This is demonstrably false. CoastKeeper knows full well that the three discharges to which it refers are: the two culverts through which the creeks pass under the Pacific Coast Highway, and a 30-inch storm drain that enters Los Trancos Creek below the Pacific Coast Highway.

- CoastKeeper argues that a suspended sediments concentration of 35,610 mg/l measured by TIC shows that TIC's construction activities at Beach Town Iviolate the law. In fact, this concentration was for a sample collected in Muddy Creek upstream of the Beach Town I construction site, and reflects background conditions in the watershed.

- CoastKeeper argues that TIC's consultants estimate a background sediment concentration of 2,000 mg/l. This is untrue. Messrs. Strecker and Mangarella, recognized water quality experts, opined that background was "in excess" of 2,000 mg/l. Dr. Chang estimated it to be 10,500 mg/l,

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within the range of water quality data for Muddy Creek, upstream of the construction site (4,600 to 35,610 mg/l of total suspended solids).

II. THE INCREASED VOLUME OF RUNOFF FROM THE PROPOSED PROJECT WILL NOT VIOLATE POLICIES CONTAINED IN THE LOCAL COASTAL PROGRAM.

As a preliminary matter, CoastKeeper mischaracterizes the increase in runoff volume which will result from the proposed project at Crystal Cove. CoastKeeper suggests that the volume of water for the combined Los Trancos and Muddy watersheds will increase by 60 percent. In fact, the average storm water runoff volume for the Los Trancos watershed will not increase significantly over the present level.[2],[3] The average annual storm water volume in the Muddy Canyon watershed will increase. In any event, as discussed below, the proposed project will not increase erosion, will not destabilize stream banks, will not increase peak flow rates, and will not alter existing stream channels. Therefore, the project conforms with the Local Coastal Program ("LCP") policies.

A. The Project Conforms With The LCP's Category "A" and "B" Environmentally Sensitive Habitat Area Policies.

CoastKeeper cites LCP Policy D-1, Category "A" and "B" Environmentally Sensitive Habitat Area ("ESHA") Policy, as precluding an increase in the volume of runoff to Los Trancos and Muddy Creeks. This provision actually states, "Except for the ESHA B located in Planning Area 4A, the natural drainage courses and natural springs will be preserved in their existing state. All development permitted in Category A and B ESHAs shall be set back a minimum of 50 feet from the edge of the riparian habitat except as provided for in the following subsections . . . ."[4] The subsections of this policy discuss circumstances in which drainage courses may be filled or modified, or vegetation removed. The language and structure of the policy make clear that it is intended to prevent physical modification of drainage courses except under limited circumstances. It is not a water quality control provision, as CoastKeeper contends, and it does not preclude increases in runoff volume. The proposed development complies with this policy, as it will not alter the natural drainage courses either of Los Trancos or Muddy Creeks.

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[2] *See* Hamilton, Projected Water Balance for Los Trancos Canyon, April 20, 2000, at 9.

[3] Of additional note is that CoastKeeper states that, "Los Trancos and Muddy Creeks will change from ephemeral to perennial streams," implying that the whole of those streams will change character; in fact, only three small tributaries totalling 7% of the reaches of these two streams will change. *See* LSA Associates, Analysis of Coastal Drainages and Wetlands-Comparative History and Likely Future Habitat Conditions in Muddy Canyon, April 20, 2000, at 10.

[4] LCP at I-3.19.

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In addition, CoastKeeper's depiction of the proposed project is misleading. CoastKeeper mistakenly relies upon the comments made by its consultant, Mr. Michael Drennan of Montgomery Watson, to stand for the proposition that increased runoff volumes from the project along with the slow release of storm flows from the project's detention basins will alter the state of the natural drainage courses. While Mr. Drennan correctly observes that the development will result in increased runoff volumes, he concludes that the effect is small: "the proposed development has little affect [sic] on stormwater runoff volume."[5] Moreover, according to Mr. Drennan, his analysis is "not based upon the [TIC] Development."[6] Mr. Drennan makes no specific statements regarding detrimental effects of TIC's project on Los Trancos or Muddy Creek stream channels. Rather, Mr. Drennan observes that volumes will increase as a result of the project, and then makes a generic argument that increased volumes can lead to an increased *potential* for erosion. Mr. Drennan did not conduct any site-specific studies to support his theories; nor does he point to any site-specific studies conducted by others to support his theories.

On the other hand, TIC did conduct site-specific studies relating specifically to the effects of increased runoff volumes on the particular stream channels located at the project. After months of review, TIC's numerous experts uniformly have concluded that the increased runoff volumes from the proposed project will not cause erosion or sediment generation (discussed more fully, below) or adversely impact the stream channels. The same experts cited by CoastKeeper for the proposition that the project will increase runoff volume found no significant problems resulting from these increased volumes of water. For example, Mr. Douglas Hamilton, an experienced hydrologist and professional engineer from Exponent, analyzed the water budget for the planned development. He found that the increased runoff, "consists mostly of more frequent minor runoff flows from low-intensity storms . . . and that the more frequent minor flows should minimally alter the hydraulic characteristics of [Muddy] canyon."[7] LSA Associates studied coastal drainages and wetlands at the site, finding that increased "storm runoff will be detained so that it does not exceed existing discharge rates. Consequently, the duration of storm event flows will be slightly extended. However, even with detention the storm runoff flows through the system so quickly that it is not likely to change the character of the vegetation in the drainages."[8] Thus, the proposed project will not alter the natural drainages, and, therefore, will not violate the LCP policy.

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[5] Memorandum of M. Drennan, Impacts of Urbanization on Stream Channel Erosion, July 19, 2000, at 6 (attached to CoastKeeper letter).

[6] *Id.*, at 3.

[7] Hamilton, Projected Water Balance for Muddy Canyon, April 20, 2000, at 10.

[8] LSA Associates, Analysis of Coastal Drainages and Wetlands-Comparative History and Likely Future Habitat Conditions in Muddy Canyon, April 20, 2000, at 9.

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B. The Project Conforms With The LCP's Erosion Policies.

CoastKeeper claims that the LCP's Erosion Policies proscribe the increases in runoff that will accompany the project. However, these policies contain provisions that relate to erosion rather than runoff volume.[9] CoastKeeper refers to a policy stating that erosion rates shall approximate the natural and existing rates before development[10] and attempts to advocate this standard as the volume of runoff permitted under the LCP.

The LCP does state that, "marine water quality will be protected . . . by means of erosion control techniques to slow runoff so that habitat areas are protected from flows significantly in excess of natural rates of flow."[11] CoastKeeper erroneously states that TIC has failed to propose erosion control techniques that slow runoff, which would appear to violate this policy. In fact, TIC has proposed BMPs for the Appeal Area which have been specifically designed to slow runoff, including vegetated swales, detention basins, wetlands, and riparian corridors.[12]

As discussed previously, CoastKeeper assumes that increased volumes from the project will result in increased erosion from the project. CoastKeeper relies upon Mr. Michael Drennan and literature for this assumption. However, Mr. Drennan made no site-specific studies, and the literature to which CoastKeeper refers is general in nature, discussing potential impacts and theory. In contrast, TIC's experts have conducted site-specific studies and have concluded that the project will not cause erosion.

Dr. Howard Chang conducted an extensive study of the sediment yields for Los Trancos and Muddy Canyons as they relate to the TIC project at Crystal Cove.[13] Dr. Chang's study takes into account local geographic and physical conditions, flood hydrology, stream channel geometry, sediment characteristics, climate, watershed slope, soil texture, soil aggregation and dispersion, and utilizes peer-reviewed sediment transport formulas that reflect spatial and temporal variations of sediment characteristics for time-dependent fluvial process-response. Dr. Chang's methodology utilized a method developed from and confirmed using field data compiled from 11 western states, which compared favorably with field data collected for a watershed in San Diego county. Dr. Chang determined that the project would not increase erosion in the stream channels, concluding that:

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[9] *See* LCP at I-3.26-27.

[10] *See* Erosion Policy 1, LCP at I-3.26.

[11] LCP at I-2.7.

[12] *See generally* Strecker & Mangarella, Stormwater Quality Evaluation Report, June 14, 2000.

[13] *See generally* Chang, Sediment Yield Study for Muddy Canyon and Los Trancos Canyon, May 2000.

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> Major storms are responsible for most of the sediment transport and low flows carry a very small portion of the sediment in the long run. The proposed development will decrease the flow intensity of storms. The reduction of flow intensity will contribute to less erosion of the stream bed.[14]

Additionally, the project is not likely to cause erosion because of the porosity of the sediments in the area and the armored nature of the stream channels. Commission staff, in their report dated July 27, 2000, acknowledge that, "much of the bed of Muddy Canyon is armored . . . that is, the bed consists either of bedrock or of boulders so large that they cannot be moved by all but the largest floods," and that, "[a]rmored stream beds are not subject to scour."[15] The potential for stream channel impacts of Los Trancos Creek is minimal, as most of the project runoff will be diverted into Muddy Creek; however, like Muddy Creek, Los Trancos Creek is also armored. The hydrology report by Tettemer and Associates indicates that, "the canyon bottom is relatively well armored with cobble and some larger boulders."[16] Dr Chang found that both Muddy and Los Trancos Creeks had armored stream beds, and that the armoring protects the stream beds from erosion.[17] Dr. Inman, who also studied the stream channels, concluded that:

> The upland geology provides an erosion resistant, heavily armored substrate that inhibits channel downcutting and bank cutting. As a consequence, the channels are stable and will continue to be after development.[18]

In contrast to Mr. Drennan's generalizations regarding increased flow volumes and their impact on erosion, expert site-specific study accounting for the increased volumes indicates that flows from the proposed project will not increase erosion.

C. <u>The Project Conforms With The LCP's Sediment Policies</u>.

CoastKeeper asserts that the project will violate the LCP's Sediment Policy 4, which provides that, "[s]ediment movement in the natural channels shall not be significantly changed in order to maintain stable channel sections and to maintain the present level of beach

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[14] Chang, Response to Questions and Comments from Ronald M. Nobel and Robert Wiegel, July 6, 2000, at 4.

[15] Staff Report: Appeal De Novo Coastal Development Permit, at 50.

[16] Tettemer and Assoc., April 2000, at 11.

[17] *See* Chang, Response to Questions and Comments from Ronald M. Nobel and Robert Wiegel, July 6, 2000, at 4.

[18] Inman, Jenkins & Masters, Coastal Processes of the Crystal Cove Littoral Subcell and the Effects of Development, June 8, 2000, at 7.

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sand replenishment."[19] CoastKeeper contends that the increased volumes of runoff may "prevent maintenance of stable channel sections." Although the project will result in an increased volume of runoff, this will not result in either increased erosion (as discussed previously) or destabilization of stream banks.

Relating to maintenance of stable channels, Dr. Chang concluded that as a consequence of BMPs in the Appeal Area, such as the detention basins, the "drainage systems will reduce soil erosion from the ground surface and improve the stability of rills and gullies as well as the stability of the canyon wall."[20] With regard to beach sand, the proposed project will terminate flow to 5 of the 10 culverts underneath the Pacific Coast Highway. Specifically, the culverts between Crystal Heights Drive and Muddy Creek will no longer permit flow over the cliffs above the beach, but rather flow will be directed first to a large detention basin before flowing out into Muddy Creek. Terminating flow to these culverts will help to preserve the cliffs downgradient of the culverts, thus preserving a valuable source of beach sand.

D. <u>The Project Conforms With The LCP's Runoff Policies</u>.

The LCP's Runoff Policy 1 provides that "[p]eak flood discharge rates of storm water flows in the major streams shall not exceed the peak rates of storm water runoff from the area in its natural or undeveloped state, unless it can be demonstrated that an increase in the discharge of no more than 10% of the natural peak rate will not significantly affect the natural erosion/beach sand replenishment process." Runoff from the project falls within these guidelines. The Hydrologic Analysis prepared for the Appeal Area finds that peak discharge rates will decrease, or remain the same, for all the watershed areas of the project.[21] CoastKeeper concedes this fact in its letter. However, CoastKeeper then mistakenly refers to Mr. Drennan's comments for the contrary proposition that the proposed project will violate the runoff policies regarding peak flow rates. Such reliance is completely off base, as Mr. Drennan's comments do not even address peak flow rates from the proposed project.

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[19] LCP at I-3.28.

[20] Chang, Stability of Muddy Canyon and Los Trancos Canyon as Affected by Proposed Development, May 18, 2000, at 1.

[21] *See* Tettemer and Assoc., Hydrologic Analysis, April 2000, at 21–29.

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III. CONSTRUCTION PRACTICES IN THE APPEAL AREA WILL CONFORM TO THE LCP AND WILL EFFECTIVELY CONTROL EROSION AND SEDIMENTATION.

A. Best Management Practices.

CoastKeeper claims that BMPs in the Appeal Area will not meet the water quality standards of the State Construction Storm Water Permit. CoastKeeper's argument is based on the mistaken premise that TIC's construction practices, as currently reflected at the adjacent Beach Town I development, are not adequate to protect receiving waters. CoastKeeper is wrong.

In reality, the BMPs in place at the Beach Town I site have been effective at controlling sediment and other potential pollutants in both storm water and non-storm water discharges. Since the inception of construction at the site, TIC has employed a diverse pallet of BMPs on the site. As an illustration of the broad application of BMPs on the site, we have enclosed a progress map from the Storm Water Pollution Prevention Plan for Beach Town I. (See enclosure.) Depicted on the progress map are some of the many structural BMPs implemented on site, such as permanent and temporary landscaping, soil binders, erosion matting, silt fencing, sandbag berms and checkdams, and desilting basins, demonstrating the comprehensiveness of erosion control measures on the site.

In addition to TIC's own frequent and thorough monitoring of the BMPs at the Beach Town I site, other regulatory agencies including the RWQCB have inspected and monitored the BMPs. In correspondence between the RWQCB and the State Water Resources Control Board (April 11, 2000), Gerard Thibeault, Executive Director of the RWQCB, stated: "Field inspections of ongoing construction by Regional Board staff demonstrate that ICDC has implemented a highly effective program to control erosion and sediment transport."

The BMPs planned for the Appeal Area are similar to those in place for the Beach Town I portion of the project. The proposed BMPs for the Appeal Area incorporate additional measures such as riparian corridors, vegetated swales, extended detention basins, extended detention wetlands, circular bio-filters, and extensive use of Drain Pac filters.[22] These additional BMPs will ensure that the Appeal Area, like Beach Town I, fully complies with water quality permits and policies.

B. Runoff Conditions.

CoastKeeper claims that its video of winter storms shows runoff from the Beach Town I site is overly sediment laden and causes sediment plumes in the ocean. We are unaware of any expert analysis by CoastKeeper of the runoff conditions captured on its video. Expert

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[22] *See* Strecker & Mangarella, Stormwater Quality Evaluation Report, June 14, 2000, at 15–23.

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analysis of this runoff that TIC commissioned indicates that CoastKeeper's construction of the events of its own video is wrong.

CoastKeeper incorrectly points to its video as demonstrating that sediment plumes seen in the ocean derive from Los Trancos and Muddy Creeks, and more specifically, from the Beach Town I construction site. Expert review of the video by Drs. Inman and Jenkins, along with a video of a similar storm event taken by Dr. Jenkins, indicates that sediment plumes appearing in the ocean near Crystal Cove derive from other nearby sources. They identify a number of local and regional sources of sediment that can impact the waters at Crystal Cove, including Buck Gully, Newport Harbor, the Santa Ana River and San Juan Creek. Moreover, because of the insufficient velocity of the discharges from Los Trancos and Muddy Creeks and because of the nearshore tidal flows on the days of the CoastKeeper video, the plumes captured on its video could not have emanated from either Los Trancos or Muddy Creeks.

In addition to its video, CoastKeeper points to sediment data gathered by Cotton, Shires, and Associates, and claims these data indicate that TIC's construction activities at Beach Town I are permitting improper levels of sediment to escape the site. The Cotton Shires report[23] was not previously submitted to the Commission; however, this report was discussed and referenced by Dr. Chang in his sediment yield study. TIC is enclosing the Cotton Shires report with this letter. CoastKeeper and its expert Richard Rollins both mischaracterize the Cotton Shires data—argue that the figure of 35,610 mg/l of sediment stated in the report is derived from the Beach Town I construction site. However, the Cotton Shires report states that its sampling station was upstream of the construction site. Therefore, the 35,610 mg/l figure represents a background level of sediment already present in Muddy Creek when the construction site runoff enters the creek. Contrary to CoastKeeper's supposition, the Beach Town I construction site is not adding sediment to the creeks in significant amounts over existing background levels.

Finally, TIC previously provided to the Commission a briefing package regarding the CoastKeeper video. CoastKeeper mistakenly concludes that the turbid conditions in Los Trancos and Muddy Creeks may be attributed to the construction site. However, CoastKeeper's video itself shows that runoff from the Beach Town I site is similar in turbidity to upstream flow in Muddy Creek. For Los Trancos Creek, project water entering the creeks through the 30" RCP pipe in the historic district appears to be clearer on the video than the flow already in the creek.

IV. THE APPEAL AREA WILL NOT DISCHARGE ANY RUNOFF DIRECTLY INTO THE OCEAN.

CoastKeeper argues that there will be three dicharges of runoff from the Appeal Area directly into the Ocean. While there are 10 culverts under the Pacific Coast Highway near

[23] Sediment Sampling Results, April 12, 2000.

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TIC's property, only 5 of the culverts will route runoff from TIC's development, only 3 of the culverts will receive runoff from the Appeal Area, and none of these 3 culverts will discharge directly to the ocean.

The proposed project will terminate the use of five existing culverts lying between Crystal Heights Drive (near the center of Beach Town I) and Muddy Creek. No discharge will flow through these culverts and their flows will instead be directed to a large detention basin prior to discharge through Muddy Creek. Of the remaining 5 culverts, 2 of these accept only runoff only from Beach Town I; the 24" RCP below drainage area "C" and the 3' x 4' box culvert below drainage area "Br" do not drain any portion of the Appeal Area. CoastKeeper acknowledges this fact in its letter.

The three other culverts are: the 9' x 10' arch culvert at Los Trancos Creek, the 6' x 8' arch culvert at Muddy Creek, and the 30" RCP below drainage area "A." Each of these culverts will accept runoff from the Appeal Area; however, none of these culverts drain directly to the ocean. The two arch culverts merely serve as conduits for the two creeks to pass beneath the Pacific Coast Highway. The creeks continue in their natural stream channel downstream of the two arch culverts, and the CoastKeeper video shows the creeks flowing in their natural stream channels downstream of the two arch culverts. The remaining culvert—the 30" RCP below drainage area "A"—empties into Los Trancos Creek just upstream of the existing pedestrian bridge in the historic district between the ocean and the Pacific Coast Highway.[24] CoastKeeper, in its own video, shows where this 30" pipe outlets into the creek. Thus, none of the three culverts draining the Appeal Area discharge directly into the ocean—all runoff drains into a stream channel prior to reaching the ocean.

V. ALL RUNOFF IN THE APPEAL AREA WILL UNDERGO TREATMENT.

CoastKeeper argues that TIC should be required to retain or treat all runoff from the Appeal Area. Retaining all runoff from the Appeal Area is not a practical proposal. Given the steepness of the project terrain, retaining runoff in the upper reaches of the project would not be sound geotechnically. The safest place, from an engineering perspective, would be to retain runoff within the bottom of Muddy Canyon; however, the LCP would not allow for such a retention facility. As an alternative to retention, CoastKeeper suggests treating all runoff from the Appeal Area. In fact, TIC is proposing to treat all runoff from the Appeal Area.

The project will be subject to multiple BMPs that have been selected and designed to reduce storm water runoff as well as improve runoff water quality. As discussed by Messrs. Strecker and Mangarella, the project includes both source and treatment type BMPs. The project has utilized a "treatment train" approach that includes BMPs at various parts of the

[24] Tettemer and Assoc., Hydrologic Analysis, April 2000, at 13.

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system. These include source control measures (landscaping, education, street sweeping), catch basin filters, vegetated swales, extended detention ponds, wetlands, and riparian corridors. The use of a treatment train approach rather than a single downstream BMP results in a much more robust system. Utilizing the treatment train approach, all runoff from the Appeal Area will undergo treatment from multiple BMPs prior to discharge. For example, runoff may pass through a vegetated swale, then through a detention pond, then through a riparian corridor, then through an additional detention pond prior to entering a creek. Each of these BMPs serves a treatment function, providing for settling and filtering of potential contaminants.[25] This system of treatment train BMPs was praised by Professor Michael Stenstrom of UCLA, who served as an outside peer reviewer on behalf of the California Department of Parks and Recreation. After examining the study done by Messrs. Strecker and Managrella, Professor Stenstrom stated that, "the range and magnitude of BMPs is impressive."[26]

VI. MONITORING STUDIES PERFORMED BY DR. FORD HAVE PRODUCED VALID, OBJECTIVE WATER QUALITY DATA.

CoastKeeper references water quality monitoring studies prepared by Dr. Richard Ford at the direction of the RWQCB. CoastKeeper, through its expert Richard Rollins, claims that the design of the study and the analytical parameters utilized were flawed. However, the format and content of Dr. Ford's reports were specified by the RWQCB, and the RWQCB approved Dr. Ford's methods in advance of his commencement of work. As part of the first year of this monitoring study, Dr. Ford sampled and analyzed five storm events at the project site, and ensured that the storms sampled were fully representative of the season and were appropriate events for the study. Dr. Ford informed the RWQCB that his study design is, "essentially the standard one widely employed elsewhere for monitoring studies of pollutants."[27]

Additionally, CoastKeeper implies that Dr. Ford, because he has been an expert consultant to TIC, has prepared monitoring reports that are not neutral or objective. In defense of Dr. Ford, he is a scientist with 37 years of experience in designing and conducting ecological field studies. He currently holds positions at both San Diego State University and the Hubbs-Sea World Research Institute. Dr. Ford, along with the other scientists and researchers assisting him, have, through the use of standard scientific practices, ensured the objectivity of their studies.

CoastKeeper also claims that TIC has not provided a whole picture of the proposed development since each of the studies prepared has been developed to focus on a specific issue. The list of studies prepared for the Commission regarding the proposed project is

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[25] *See generally* Strecker & Mangarella, Stormwater Quality Evaluation Report, June 14, 2000.

[26] Staff Report: Appeal De Novo Coastal Development Permit, at 66 (citing Professor Michael K. Stenstrom of UCLA).

[27] Letter from R. Ford to G. Thibeault, Executive Director, RWQCB, June 28, 2000, at 4.

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lengthy and includes reports regarding geotechnology, hydrology, inland biology, intertidal kelp, marine mammals and fish, ocean processes, sedimentology, water budgets, and water quality. All of these reports have been prepared by persons considered experts in their respective fields. The reports, when taken as a whole, provide a complete picture of the potential impacts of the project across all relevant disciplines.

VII. THE RWQCB IS EFFECTIVELY REGULATING THE PROPOSED DEVELOPMENT.

CoastKeeper argues that the RWQCB has refused to review the potential water quality impacts of the proposed development and, as such, the Commission must step into the breach. CoastKeeper's characterization of RWQCB action on this project is wrong; the RWQCB is effectively discharging water quality jurisdiction over the project. While, by letter dated September 30, 1999, the RWQCB waived WDRs for the project, this action did not leave the project without effective water quality controls. In addition, the RWQCB is exercising continued jurisdiction over the project by requiring the water quality monitoring program, the data from which it is using as a means to review its waiver of WDRs.

During construction, the SWRCB's General Permit for Storm Water Discharges Associated With Construction Activity ("Construction Permit") will govern storm water and non-storm water discharges. This Construction Permit was issued pursuant to the Clean Water Act's National Pollutant Discharge Elimination System ("NPDES"), and requires permittees to implement both structural and non-structural BMPs to reduce or eliminate pollutants that might otherwise be carried to receiving waters. Under the Clean Water Act, erosion and sediment control pursuant to the Construction Permit must be the Best Available Technology Economically Achievable ("BAT") and Best Conventional Pollutant Control Technology ("BCT"). The project also must be constructed in accordance with the New Development BMPs set forth in the Orange County Drainage Area Management Plan, which was prepared in compliance with the Areawide Permit held by the County of Orange. This NPDES permit governs the use of the County's separate storm water system and applies to areas in unincorporated Orange County. Pursuant to this permit, the County issued a storm water ordinance that also applies to the project.[28]

In addition, the waiver of WDRs itself imposes significant conditions on the project. In waiving WDRs for the project, the invoked Regional Board Resolution No. 96-9 which places conditions on dredge and fill activities such that TIC must: (1) ensure no net loss of wetlands; (2) use only inert fill; (3) abstain from fueling, lubricating, or performing maintenance within riparian habitat; (4) refrain from depositing spoils in areas where they could be washed into surface water bodies; (5) discharge all wastewater from dredging and filling in a

[28] *See generally* County of Orange, Cal., Ordinance No. 3987 (July 22, 1997).

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manner so that it will percolate into the ground; (6) dispose of all such wastewater in a manner that does not affect the beneficial uses of the receiving waters; and (7) conduct dredging and filling activities in accordance with an agreement between TIC and the California Department of Fish & Game (adding additional water quality protections to the project).

The reason the RWQCB has not revoked its waiver of WDRs for the project is because, notwithstanding CoastKeeper's assertions to the contrary, it has considered revisions to the project made by TIC and found them to not require revocation. The letter from the RWQCB to which CoastKeeper refers states that, "because project impacts to wetlands have been reduced, we will not reconsider the waiver of WDRs for those impacts."[29] The RWQCB acknowledges the alterations to the project including additional water quality measures. In a letter from the RWQCB to the State Water Resources Control Board, the RWQCB again discloses its review of the revised project:

> . . . a number of changes to the Project have been made by ICDC to address concerns identified subsequent to the issuance of the waiver. These changes include the installation of filter fabric bags . . . and the diversion of low flows in both Muddy Canyon and Los Trancos Creeks to the . . . sewer system. These changes provide even greater assurance that the Project will not adversely affect the receiving waters, including the ASBS. Therefore, the changes support the propriety of the waiver from individual waste discharge requirements.[30]

Thus, the RWQCB did indeed review the revised project. Since the revised project was even more protective of water quality than it had been previously, the RWQCB did not overturn the waiver of WDRs.

VIII. CONCLUSION.

The state of the practice water quality controls planned for the Appeal Area will effectively mitigate any potential for adverse impacts to receiving waters, including Los Trancos and Muddy Creeks, and the ASBS at Crystal Cove. The proposed project is in full compliance with the policies of the certified LCP and the water quality regulations of the RWQCB and the SWRCB. BMPs currently in place at Beach Town I, an adjacent TIC development, demonstrate the efficacy of TIC's program to control erosion and protect water quality during development.

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[29] Letter from G. Thibeault, Executive Officer, RWQCB, July 14, 2000, at 1.

[30] Letter from G. Thibeault, Executive Officer, RWQCB, April 11, 2000, at 4.

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CoastKeeper's criticisms of the water quality controls planned for the Appeal Area are misguided and should be disregarded by the Commission. CoastKeeper mischaracterizes the project and existing data and information, and makes various arguments unsubstantiated by technical evidence or expert professional opinion.

If you have any questions, or would care to discuss the above, we are available to discuss this matter at your convenience. I can be reached at (714) 540-1235.

Very truly yours,

Paul Singarella
of LATHAM & WATKINS

Enclosures: Cotton Shires Report
Progress Map for Beach Town I

cc: Ms. Teresa Henry, California Coastal Commission
Mr. Jack Gregg, California Coastal Commission
Ms. Carrie Bluth, California Coastal Commission
Ms. Joanne Schneider, Santa Ana Regional Water Quality Control Board
Ms. Roberta Marshall, The Irvine Company
Ms. M. Andriette Culbertson, Esq.
Ms. Kimberly Lewand, Esq., Lawyers for Clean Water

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COTTON, SHIRES & ASSOCIATES, INC.
CONSULTING ENGINEERS AND GEOLOGISTS

April 12, 2000
E4120

Ms. Roberta Rand Marshall
THE IRVINE COMMUNITY DEVELOPMENT COMPANY
550 Newport Center Drive, PO Box 6370,
Newport Beach, CA 92658-6370

RECEIVED
AUG 7 2000
CALIFORNIA
COASTAL COMMISSION

SUBJECT: **Sediment Sampling Results**
RE: Muddy Canyon
Crystal Cove Phase IV -3 & 4
Orange County, California

Dear Ms. Marshall:

We have completed our sediment sampling of Muddy Canyon at Crystal Cove in Orange County, California. As outlined in our proposal dated February 25, 2000 and amended on March 3, 2000, we have completed the following tasks:

- Three attempts were made to measure streamflow and sample sediment;
- One cross-channel profile and one longitudinal profile were surveyed at the measurement station;
- Bed material was measured via bulk sampling and pebble counts;
- During two separate runoff events, streamflow was measured and both suspended and bed load sediment samples were collected;
- Ten representative sediment samples were analyzed in the laboratory to determine sediment concentration and/or particle size distribution;
- Discussions of measurement results with Mr. Hasan Nouri of Rivertech, Inc., and
- Preparation of this letter report.

In addition, and at the request of Mr. Nouri, we extrapolated the measured data into a sediment transport curve envelope. The following sections briefly describe the watershed, our data collection and laboratory methods, and the results of our measurements. We also discuss our extrapolation techniques.

WATERSHED DESCRIPTION

Muddy Canyon is located approximately 3 miles north of Laguna Beach in Orange County, California (Figure 1). The Muddy Canyon watershed is approximately 3 miles long, one-half mile wide, and total relief is approximately 1,145 feet. This watershed drains an area of approximately 1.42 square miles and streamflow is to the southeast. At the downstream end of the watershed, streamflow is conveyed through a culvert beneath State Highway 1 (Pacific Coast Highway) with ultimate discharge into the Pacific Ocean at Crystal Cove State Park. Bedrock underlying the watershed is composed of Tertiary marine conglomerates, sandstone, siltstone, shale and claystone units that are cut by several normal faults (Tan and Edgington, 1976). In addition, landslides cover approximately 18 percent the Muddy Canyon watershed and lie immediately adjacent to the stream channel. As recorded at the National Weather Service's (NWS) rain gage at Laguna Beach, mean annual precipitation for this area is 12.4 inches.

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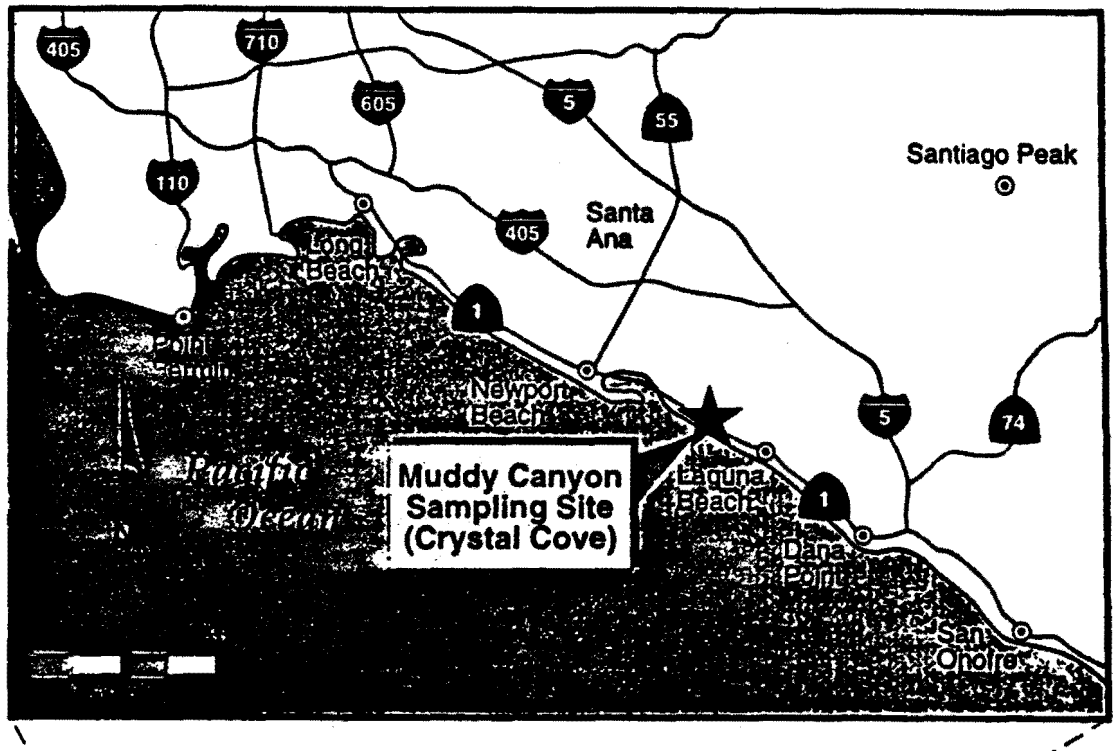

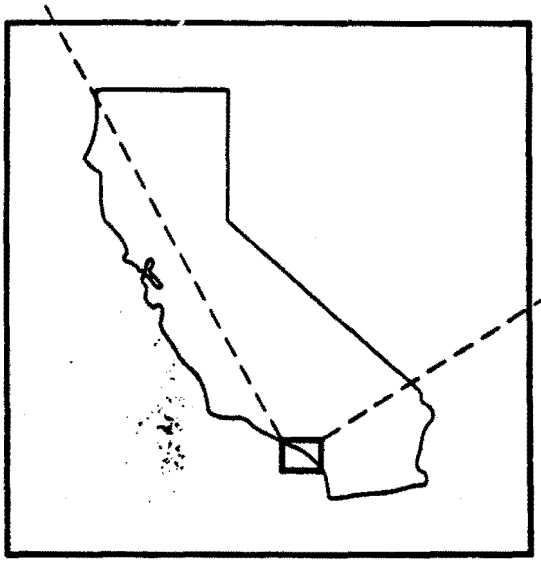

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COTTON, SHIRES & ASSOCIATES, INC.
CONSULTING ENGINEERS AND GEOLOGISTS

LOCATION MAP
MUDDY CANYON SAMPLING SITE
CRYSTAL COVE, CALIFORNIA

GEO/ENG. BY	SCALE	PROJECT NO
MS	1" = 10 miles	E4120
APPROVED BY	DATE	FIGURE NO.
BC	April, 2000	1

Our stream measurement and sediment sampling station (Station) in Muddy Canyon was established approximately 125 feet upstream from the concrete culvert beneath the Pacific Coast Highway and approximately 10 feet upstream from the mouth of a small tributary that drains a prominent ravine to the south. At the Station, the channel is incised approximately 4 feet into valley fill alluvium and is approximately 28 feet wide. The stream bed is composed of sand, gravel, and cobbles. Boulders up to 3 feet in diameter were also observed. The banks are composed of interbedded layers of sandy silt, sandy clay, and gravel. Water only flows in the channel during and after rain storms. Consequently, the channel bottom is constricted by various shrubs.

DATA COLLECTION METHODS

Field Measurements and Sample Collection

Prior to each runoff event, a portable rain gage was installed at the site and was regularly monitored during each storm. During the March 5, 2000 runoff event, the natural streamflow in the channel was measured and sampled. During the second runoff event, streamflow was controlled with a weir that constricted flow width to 2 feet and subsequently increased the flow depth. Streamflow velocity was measured with a Pygmy meter connected to an AquaCalc datalogger/computer. Rapidly varying stage, shallow flow depths, and narrow flow widths prevented us from making the conventional 20 velocity measurements per transect as recommended by the U. S. Geological Survey (Buchanan and Somers, 1969). We were able to make six to ten velocity measurements per transect. Consequently, the discharge values reported below are technically considered estimates.

Streamflow depth was too shallow to perform depth-integrated suspended sediment sampling. Thus, suspended sediment was collected with a timed dip of the sample bottle into the stream. Sampling time for all dip samples was 5 seconds. Bed load sediment was collected with a Helley-Smith bedload sampler immersed for specific time periods that ranged from 5 minutes to 43 minutes. The bedload sampler we used has a 1.4 expansion ratio between intake and exhaust, and the collection bag has a mesh opening of 0.25 mm. The bed material of the streambed was measured with a pebble count of 100 particles and bulk samples of the streambed and banks were also collected.

Laboratory Analysis

Sediment concentration was measured by weighing the mass of the collected sediment and water mixture, evaporating the water as per ASTM standard specifications, and then weighing the remaining sediment. Sediment particle sizes were measured using wet and dry sieving techniques and ASTM registered brass sieves.

DISCUSSION AND RESULTS

Coincident streamflow measurements and sediment sampling were performed several times during two rainfall and runoff events that occurred on March 5, 2000 (first event) and March 8, 2000 (second event). The two runoff events were relatively mild and quite similar. In both events, flow in the channel began after 0.3 inches of rain had fallen over the course of approximately 6 hours. Peak streamflow occurred during both events in response to between 10 and 15 minutes of rain falling at a rate of approximately 0.4 inches per hour. Peak streamflow during both events was momentary, reached a maximum of approximately 2.2 cubic feet per second (cfs), and

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the flood waves lasted little more than an hour. Maximum flow depth for the first event was approximately 0.7 feet and was partly a consequence of backwater effects caused by high flows in the tributary stream that flowed over its banks and into the Station area. Maximum flow depth during the second event was 0.6 feet measured at the weir opening. After passage of the peak flood waves, a base flow discharge of between 0.4 and 0.5 cfs persisted for several hours after the rain had stopped. We measured total precipitation for each event to be approximately 0.85 inches. Provisional rainfall amounts recorded at Laguna Beach and the John Wayne Airport for the second event were 0.51 and 0.45 inches respectively. Our measured data is summarized in Tables 1 and 2.

Table 1. Summary of suspended sediment measurements.

Sample Date	Sample Time	Estimated Discharge (cfs)	Water Depth (ft)	Sediment Conc. (grams/liter)	Sediment Transport Rate (tons/hour)	Sand (percent)	Silt/Clay (percent)
3/5/00	11:05	1.4	0.4	35.61	5.60	--	100
3/8/00	11:48	0.82	0.3	11.85	1.09	--	100
3/8/00	13:50	0.48	0.25	4.53	0.24	17	83

Table 2. Particle size distribution of bed material.

Sieve Size (mm)	50.0	25.4	19.00	12.50	9.50	4.75	2.36	1.18	0.43	0.30	0.15	0.075	0.063
Percent Finer Than	100.00	91.99	80.75	73.08	68.45	56.54	47.14	36.77	15.25	9.67	4.87	2.38	0.75

REFERENCES

Buchanan, T. J., and W. P. Somers, 1969, Discharge measurements at gaging stations, Techniques of Water-Resources Investigations of the U. S. Geological Survey, Chapter A8, Book 3, Applications of Hydraulics, 65 p.

Tan, S. S., and W. J. Edgington, 1976, Geology and engineering geologic aspects of the Laguna Beach Quadrangle, Orange County, California, California Division of Mines and Geology Special Report SR-127, 32 p.

LIMITATIONS

Our services consist of professional opinions and recommendations made in accordance with generally accepted engineering geology and hydro-geomorphic principles and practices. No warranty, expressed or implied, or merchantability of fitness, is made or intended in connection with our work, by the proposal for consulting or other services, or by the furnishing of oral or written reports or findings.

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April 12, 2000
E4120

We appreciate the opportunity to have provided you with our hydro-geomorphic services on this project. If you have any questions, or need additional information, please contact us.

Respectfully submitted,

COTTON, SHIRES AND ASSOCIATES, INC.

Mark G. Smelser
Fluvial Geomorphologist
RG 6991

William R. Cotton
Principal Engineering Geologist
CEG 882

WRC:MS:st

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CRYSTAL COVE
MERCHANT BUILDER PLOT PLANS

PREPARED BY:

H&A

SUMMARY

SITE INSPECTION - SEDIMENT CONTROL

LATEST AS OF ~~Nov 29, 1999~~ ~~01/17/00~~

~~DEC 7, 1999~~ ~~[illegible]~~

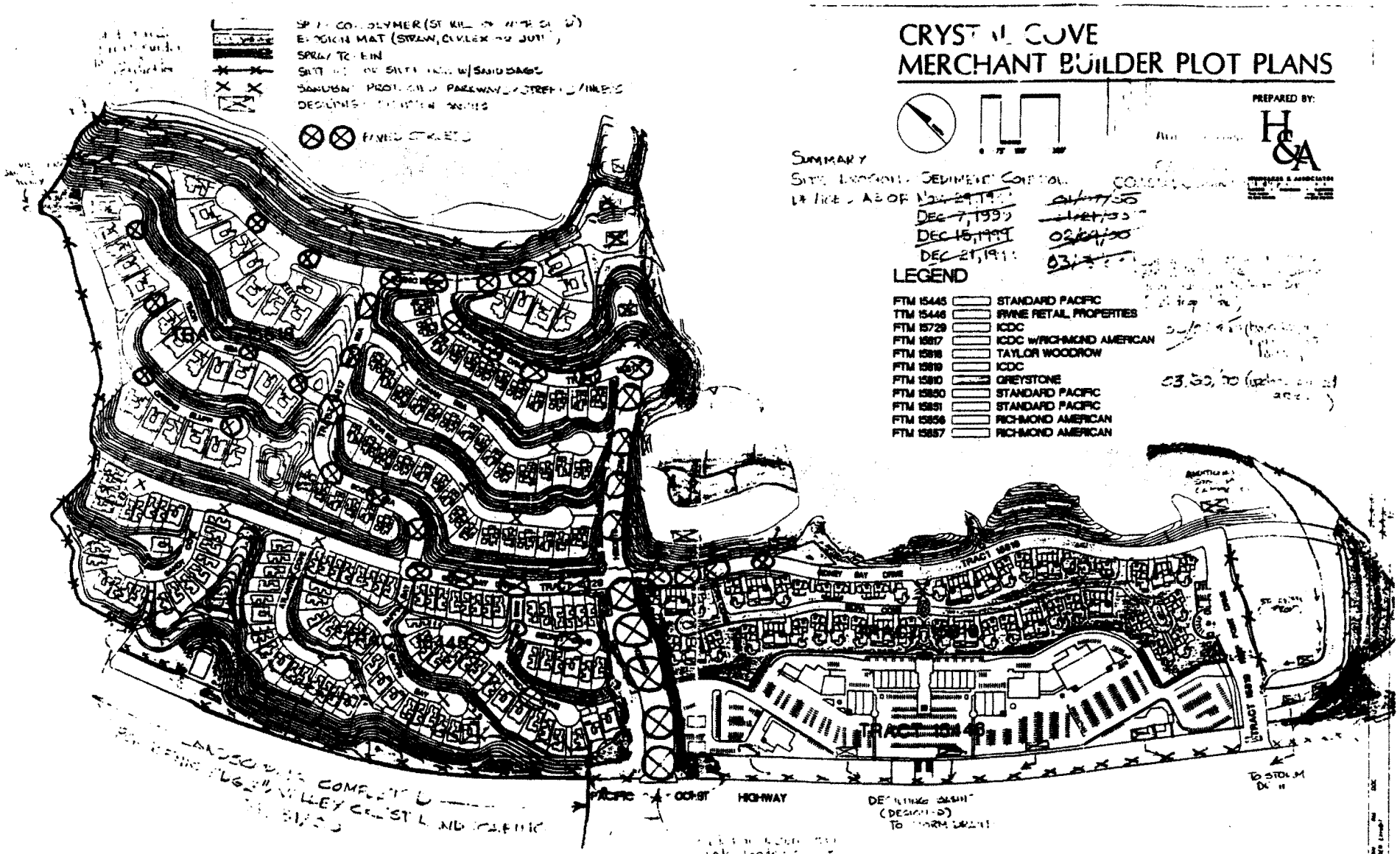
~~DEC 15, 1999~~ ~~05/[illegible]/00~~

~~DEC 21, 1999~~ ~~03/[illegible]~~

LEGEND

FTM 15445	STANDARD PACIFIC
TTM 15446	IRVINE RETAIL PROPERTIES
FTM 15729	ICDC
FTM 15817	ICDC w/RICHMOND AMERICAN
FTM 15818	TAYLOR WOODROW
FTM 15819	ICDC
FTM 15810	GREYSTONE
FTM 15850	STANDARD PACIFIC
FTM 15851	STANDARD PACIFIC
FTM 15856	RICHMOND AMERICAN
FTM 15857	RICHMOND AMERICAN

03.30.00 (updated area)



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GeoSyntec Consultants
111 SW Fifth Avenue, Suite 600
Portland, OR 97204-1743
503.222.9518
503.805.0479

December 4, 2000

Roberta Marshall
Irvine Community Development Company
550 Newport Center Drive
Newport Beach, CA 92658

Subject: Flow Sampling to Detect Potential Flows By-passing the Dry-Weather Flow Diversion (Crystal Cove Appeal Condition No. 19, CDP A5-IRC-99-301

Dear Ms. Marshall:

Under the Coastal Commission conditions for the Crystal Cove project, The Irvine Company has been required to monitor dry weather flows in several structures that today convey runoff from the project area under Pacific Coast Highway and to Crystal Cove (Condition No. 19). The purpose of the monitoring is to ascertain whether the flow diversions are effectively diverting runoff away from these systems.

You have asked me to comment on the reasonableness of the planned flow level for detection of dry weather flows. My understanding is that there is some dry weather flows in these systems arising from exfiltration of ground water directly into the conveyances and from some slope drains. It is common that underground stormwater conveyances have such dry weather flows from such sources.

In order to assess whether dry-weather flows in excess of those occurring from the above sources, it has been proposed that the flow rate trigger for such inflows to the system be assumed to be15 gallons per minute or less, about the flow rate of a garden hose. This flow rate is about 0.03 ft^3/sec, which is low. Higher flow rates than this would be considered to indicate that there potentially are other sources of flows to these systems.

The true amount of groundwater inflow and slope drain inflows to the system is not known at this time and could fluctuate some depending on seasonal, yearly, and storm variations in groundwater depths as well as slope drainage. In as much as an industry standard for this type of discharge does not exist., my opinion is that 15 gallons per minute is a flow rate that is a reasonable starting amount, given the small quantity of such a flow. If the flow is higher than this, visual observations confirming that the flow is not coming from upstream dry weather sources could be conducted. This together with the collected flow data could be used to establish a new "allowable" low flow rate that is representative of natural exfiltration of groundwater or slope drainage could be established. Even at flows less than 15 gallons per minute, I would recommend a brief field visit to confirm that they are arising from groundwater and/or slope drainage, rather than from onsite surface sources.

If you have any questions regarding this matter, please feel free to call me at (503) 222-9518.

Sincerely,

Eric W. Strecker, P.E.
Associate

Exhibit
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