Ref: 07-1088

AGENDA
SPECIAL MEETING
OF THE BOARD OF DIRECTORS OF THE
LEUCADIA WASTEWATER DISTRICT

Thursday, April 26, 2007 – 9:00 a.m.
1960 La Costa Avenue Carlsbad, CA 92009

NOTE: ITEMS ON THE AGENDA MAY BE TAKEN OUT OF SEQUENTIAL ORDER AS THEIR PRIORITY IS DETERMINED BY THE BOARD OF DIRECTORS

1. **Call to Order**

2. **Roll Call**

3. **Pledge of Allegiance**

4. **Approval of Agenda**
   In the case of emergency, items may be added to the Agenda by a majority vote of the Board of Directors. Also, items that arise after posting of the Agenda may be added, per Government Code Section 54954.2, by a 2/3 or unanimous vote of the Board.

5. **Public Comment**
   Anyone wishing to address the Board or bring an agenda item forward may do so.

6. **Island Area collection System Plan**
   A. Review and discuss the proposed Island Area Collection System Plan. (Pages 1-8)

7. **Adjournment**

AFFADAVIT OF POSTING

I, Paul J. Bushee, Secretary of the Leucadia Wastewater District, hereby certify that I posted a copy of the foregoing agenda in the lobby of the District office at 1960 La Costa Avenue, Carlsbad California at least 72 hours prior to the meeting, in accordance with Govt. Code Section 54954.2(a).

Date: April 19, 2007

Paul J. Bushee, Secretary/Manager

Ref: 07-1087

MEMORANDUM

DATE: April 19, 2007

TO: Board of Directors

FROM: Paul J. Bushee, General Manager

SUBJECT: **Special Board Meeting – Island Area Collection System Plan**

RECOMMENDATION:

Staff requests that the Board of Directors:

1. Discuss the proposed Island Area Collection System Plan.
2. Provide direction to staff, as appropriate.

DISCUSSION:

This Special Meeting of the Board of Directors will be conducted to present the draft Island Area Collection System Plan developed by Dexter Wilson Engineering (DWE) with staff collaboration. The purpose of this meeting is to provide the Directors with background information and assumptions for the plan; the proposed collection system plan; and discuss implementation policies to include possible ordinances and funding alternatives.

The Island Area is located west of Interstate 5, east of Highway 101, south of La Costa Avenue, and north of Encinitas Boulevard. It is in the District's sphere of influence and consists primarily of single family residences, vacant lots, and a few greenhouses which are currently on sewer septic systems. The total number of properties based on Assessor's Parcel Number is 461. The proposed plan divides the Island Area into twelve (12) service subareas or basins based on the area topography.

Staff and DWE will present an overview of the proposed Island Area Collection System Plan at the meeting. Attached please find the draft Executive Summary for the Plan. The enclosures referenced in the draft Executive Summary have not been included in this packet due to their large size. Instead, an 11" X 17" Island Area map displaying the 12 service subareas has been attached for your review.

rym:PJB

Attachments

April 18, 2007 103-008

Leucadia Wastewater District
1960 La Costa Avenue
Carlsbad, CA 92009

Attention: Robin Morishita, Project Coordinator

Subject: Island Area Collection System Plan – Executive Summary

Enclosed are three exhibits which represent our final recommendations for the Leucadia Wastewater District Island Area Collection System Plan. These three exhibits summarize our recommendations for how to provide sewer service to the Island Area of the District which generally extends between La Costa Avenue on the north and Orpheus Avenue on the south, Interstate 5 on the east and Hygeia Avenue on the west.

Background

The Island Area of the District primarily consists of single family residential homes, a few greenhouse operations, and several vacant lots. The area is served by individual sewer septic systems. The terrain is sloping and in most locations provides a significant elevation differential to existing areas in the vicinity which have public sewer service. However, street slopes are not always oriented in a manner that will allow for orderly installation of standard gravity sewer lines to serve this area.

Because of the variable terrain and the inability to sewer the area in a uniform manner, we performed a series of studies to determine the optimum approach for providing gravity sewer service to as many lots in the Island Area as feasible. The analysis of alternatives was based on several design factors or constraints which are listed below:

- Minimize the depth of new gravity sewers;
- Avoid gravity sewer depths in excess of 23 feet;
- Avoid easements for public sewer lines on private property;
- Minimize the number of lots that would need to have individual pump systems to connect to the sewer system;
- Consider public sewer lift stations as a last resort.
- Achieve a balance between facility costs and the above criteria.

Purpose

The purpose of the Island Area Collection System Plan is to present a comprehensive plan for the logical installation of gravity sewer systems which will meet the sewer service needs of the Island Area and conform to the Leucadia Wastewater District's long-range operation and maintenance objectives. Primary among these objectives is to plan a sanitary sewer system which is wholly reliable and inexpensive to operate and maintain.

Secondly, the purpose of the Island Area Collection System Plan is to allow individual property owners within the Island Area to understand what sewer facilities would need to be built for a given property to obtain public sewer service. The Collection System Plan sets the alignment and depth of gravity sewers for all affected upstream and downstream property owners. In this way what one property owner may need to construct to obtain sewer service will fit into the overall plan for service to all the properties in the area.

The implementation of this Collection System Plan will allow for "leap-frog" connections to be made within a subarea as it will set the alignment and depth of gravity sewers for all affected upstream and downstream property owners. Thus, a property at the upstream end of a subarea may build a long section of sewer to obtain service and the Collection System Plan will provide the guidelines for its depth and alignment such that all other properties in the subarea will be able to utilize that sewer if and when they choose to connect to the public sewer system.

Island Area Collection System Plan Overview

The Island Area Collection System Plan is composed of twelve separate sewer service subareas. Each subarea is distinct from another in that each subarea has a plan for sewer service which is independent of any other subarea. Furthermore, the Island Area Collection System Plan has been divided into a North Island Area and a South Island Area. The division between these two areas occurs at Leucadia Boulevard.

All twelve subareas within the Island Area flow to existing gravity sewer facilities west of the Interstate 5 Freeway. We examined the possibility of extending a new sewer across the Interstate 5 Freeway to the east but found it to be infeasible because the invert elevations of the sewers on the east side were too high. Since there are multiple proposed connections from the Island Area to the existing sewer system, we proceeded with the Collection System Plan based on the premise that sewer system capacity is available to accommodate the incremental increase in sewage flows from the Island Area. We did not perform an update to the District-wide sewer system computer model in order to verify the ability of the existing system to assimilate the potential ultimate Island Area flows without requiring any upgrades. Related to this is that all new sewers within the Island Area are planned to be 8" diameter. Even using the minimum allowable slope for an 8" sewer there

are no cases where District depth of flow design criterion is approached because of the small numbers of dwelling units served in each subarea.

Enclosed with this letter are three graphic documents which provide an overview of the Island Area Collection System Plan. First is a 200-scale Index Map which covers the entire Island Area. It shows the twelve subareas each in its own color and allows the viewer to place in perspective the subareas within the Island Area.

The second two graphics, labeled Plate 1.0 and 2.0, present the North Island Area and South Island Area at a larger scale such that individual lots can be identified. These plates provide a summary of the estimated improvement costs for each subarea as well as the total lots served by the improvements and the average cost per lot for each subarea.

Island Area Collection System Plan Improvement Costs

The Collection System Plan analysis was based upon the current number of lots in the Island Area. A lot is defined as a property with a distinct Assessors Parcel Number. The total number of properties to be served in the Island Area is 454. We determined that 71 lots or 16% of the total lots served will need to incorporate individual pumping units in order to be served. While there is a potential that some lots may be split in the future, the scope of our collection system planning effort did not include a study of this potential. In general, we anticipate that the Island Area Collection System Plan recommendations will apply even in the case of a lot split; where this may not be true is in the circumstance where several lots are combined into a single development project allowing for the sewer to flow by gravity more efficiently than if all the lots developed independently.

There are twelve subareas within the Island Area. The number of lots within a subarea range from a low of three to a high of 149. The North Island Area

comprises seven subareas which gravity flow to the north and the west; the South Island Area contains the remaining five subareas which gravity flow to the south and the west.

The Collection System Plan determined the estimated cost for the recommended sewer system improvements within each subarea. The estimated construction costs considered both the construction of the sewer mains as well as the soft costs associated with the construction such as engineering, project administration, and inspection. The soft costs also included a contingency amount; altogether the soft costs were estimated to be 35 percent of the construction cost.

The construction costs were calculated using the required lengths of 8" sewer main for each subarea and a cost per linear foot for 8" sewer pipe. Unit costs for the pipe construction were adjusted to account for ranges in expected depth of the sewer. The depth ranges are 7' to 13', 14' to 18', 19' to 23', 24' to 28', and 29' to 33' of depth. Deeper sewer construction was estimated to be more costly than shallower sewers.

The estimated sewer system costs range from $54,600 for the 3-lot subarea to $1,892,100 for the 149-lot subarea. Over the entire Island Area, the average improvement cost per lot ranges from $10,700 per lot to $43,410 per lot. The average cost per lot for the entire Island Area is $18,394 per lot based upon a total improvement cost of $8,350,599.

These cost estimates are only engineer estimates and are intended primarily for use in comparing relative magnitude of alternative improvements. Also, the costs do not include the construction of any private laterals either in the street or on private property. Where individual pumping units will be necessary, we estimate that cost to be between $5,000 and $10,000 per lot. The range of costs for the individual pump systems varies because of the variation in the length of private discharge piping which may be required.

Conclusion

This Island Area Collection System Plan conforms with the ideology of the Leucadia Wastewater District in regard to making public sewer service available to all property owners within the Island Area in a manner which conforms with the District's long-term operation and maintenance objectives. We believe that this document fulfills the District's goal for a Collection System Plan which will provide the guided flexibility the District needs to effectively administer the potential increase of public gravity sewer service connections within the Island Area.

Dexter Wilson Engineering, Inc.

Andrew Oven

AO:ssr

Enclosures

ISLAND AREA
SEWER SERVICE SUBAREAS

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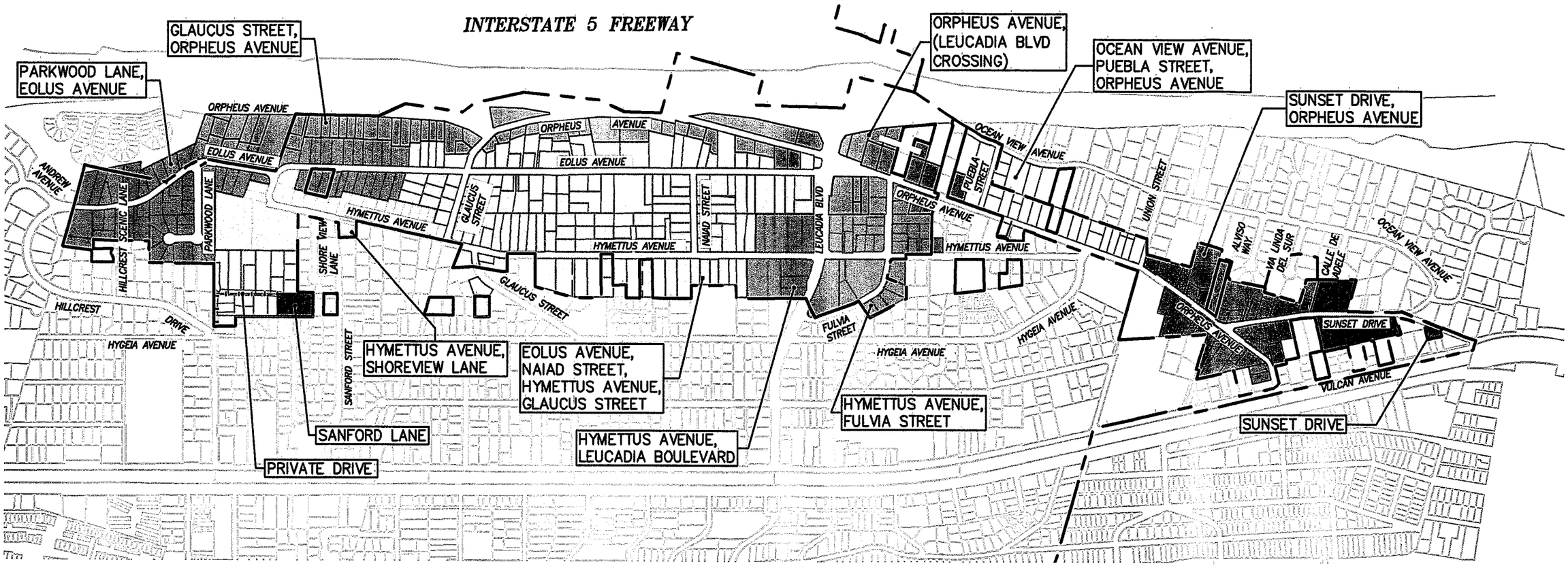
1"=800'



ISLAND AREA COLLECTION SYSTEM PLAN

INDEX MAP
ISLAND AREA
SEWER SERVICE SUBAREAS