EXHIBIT B

2006 MSR/SAP

Niland Sanitation District

SERVICE AREA PLAN
FOR WASTEWATER FACILITIES

Prepared for:

Local Agency
Formation Commission

Prepared by:

Albert A. Webb Associates
Engineering Consultants
Riverside, California

February, 2006

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SECTION 1 - WASTEWATER FACILITIES

The Town of Niland is located in the County of Imperial along Highway 111 about seven (7) miles north of the city of Calipatria and four (4) miles east of the Salton Sea. Wastewater collection and treatment facilities for the town are operated and maintained by the Niland Sanitation District (NSD or District). Information for this section of the Service Area Plan was obtained from recent rate and collection system studies prepared by the local engineering company NOLTE, miscellaneous maps and plans collected from the District office, and interviews of District staff. This section of the Service Area Plan is not for detailed engineering but rather as a means to summarize for LAFCO the District's plans to both fund and build new wastewater facilities within the proposed expanded sphere of influence expansion area (Exhibit A) to meet the needs of future growth. For additional details relating to existing and proposed wastewater facilities, the District should be consulted.

I. PERFORMANCE STANDARDS

To ensure adequate wastewater treatment and conveyance, design criteria were established. As no record of a Wastewater Master Plan or a District Standards Manual exist, the following design criteria was established from an evaluation of other local desert community's adopted design criteria. The following design criteria have been presented to and accepted by NSD for the preparation of this section of the service area plan: (Note: A more in-depth study utilizing metering instruments is beyond the scope of this work but should be conducted before future engineering design of wastewater facilities is conducted.)

- Infiltration and Inflow (I/I) = 100 gpd/acre
- Manning's roughness coefficient "n" = 0.013
- Flow velocities shall be between 2- 15 feet per second (fps)

Table 1-1 – Summary of Wastewater Generation Factors

Land Use[1]	Wastewater Average Daily Flow (ADF) Generation Factor
Residential Wastewater	280 gpd/edu
R-1	1 edu/parcel
R-2	1.5 edu/parcel
R-4	Case Specific[2]
Commercial/Industrial C-1, C-2, & M-1	2,000 gpd/acre
Government/Special G/S	1,000 gpd/acre
Open Space S-1 & S-2	N/A

[1] Refer to Appendix A Zoning Map for land use boundaries.
[2] For land use boundaries classified as R-4, the edu count from District billing records was utilized. For parcels with no District billing record an assumed 2 edu/parcel was used.

Table 1-2 -- Wastewater Peaking Factor Table

Q_{ADF} (mgd)	Peak Factor
0.084	2.48
0.420	1.98
0.840	1.81
2.520	1.60
4.200	1.55

Table 1-3 -- Minimum Pipeline Slope Criteria

Pipe Diameter (In Inches)	Minimum Slope (Feet/100 Feet)
8	0.40
10	0.29
12	0.22

Table 1-4 – Maximum Depth of Flow to Pipeline Diameter

Pipe Diameter	Design Criteria
8-inch	d/D = 0.50
10-inch and greater	d/D = 0.75

II. FACILITY PLANNING AND ADEQUACY ANALYSIS

Last year (July, 2004-July, 2005), the average daily flow (ADF) at the Wastewater Treatment Plant (WWTP) was 0.23 million gallons per day (MGD). According to the NSD's billing records, there are currently 817 equivalent dwelling units (EDU) serviced. For analysis of the wastewater facilities a value of 280 gpd/edu was utilized.

A. Inventory of Existing Facilities

WASTEWATER TREATMENT PLANT

The existing WWTP has a design or ADF capacity of 0.50 MGD[3]. The WWTP is located on the south side of Alcott Road about a half of a mile west of State Highway 111. The process flow scheme consists of a manual headworks structure, influent pump station, three (3) aeration ponds, chlorination/dechlorination structure, and a flowmeter sampling vault.

WASTEWATER COLLECTION SYSTEM

The District operates a wastewater collection system of eight (8), ten (10), and twelve (12) inch diameter pipes. Currently the collection system consists of approximately six (6) miles of pipe. The majority of the collector pipes convey wastewater flows from the east to the west discharging into the primary north-south interceptor along State Highway 111. From the

[3] Refer to Appendix B for a copy of the California Regional Water Quality Control Board National Pollutant Discharge Elimination System Permit for NSD (June 2003)

intersection of Highway 111 and Alcott Road the interceptor traverses approximately 2,100 feet west along Alcott Road to the WWTP. Wastewater in the conveyance system drains from the north to the WWTP in the south-west.

B. Adequacy of Existing Facilities

As previously mentioned, the WWTP currently receives an ADF of 0.23 MGD. The current ADF capacity of the WWTP is 0.50 MGD and peak daily flow (PDF) capacity is 1.0 MGD, which leaves an excess capacity of approximately 0.27 MGD during ADF conditions and 0.48 MGD during PDF Conditions.

A hydraulic analysis of the future sewer system within the proposed Sphere of Influence (Exhibit B) was performed using SewerCAD® software, Version 5.5, developed by Haestad Methods, Inc. Using this model, the hydraulic capacity of the existing and future system was evaluated under worst case conditions known as peak wet weather flow (PWWF) conditions. PWWF were calculated by multiplying the ADF by the wastewater peaking factor (interpolated from Table 1-2) then adding infiltration and inflow (I/I). Based on current population projections, the results of the modeling indicated that the collection system provides adequate capacity during PWWF conditions for the existing conditions and will provide adequate capacity through 2030 with the improvements listed in Phase I and II as discussed in the Phasing section of this report. Phase III improvements will insure that the wastewater collection system will provide adequate capacity up to build-out (year 2050±).

C. Future Flows for Facilities

The Town of Niland's Zoning Map (Appendix A) was utilized as the basis for projecting future flows. Table 1-5 was developed for the purpose of phasing proposed improvements. Population projections were based on the assumption that there would be a sudden population increase within the next five years because of the construction of a proposed development provided in Appendix C. This development represents the entire new portion of the expanded sphere of influence shown in Exhibit A. From the year 2010 on, a constant growth rate of 1% per year was assumed based on the past growth patterns within the District's boundaries.

Table 1-5 – Flow Projections

Year	EDU	ADF (MGD)	PWWF (MGD)	WWTP ADF CAPACITY (MGD)	WWTP PDF CAPACITY (MGD)
2005	817	0.23	0.52	0.5	1.0
2010	1104	0.31	0.66	0.5	1.0
2015	1160	0.33	0.69	0.5	1.0
2020	1220	0.34	0.72	0.5	1.0
2025	1282	0.36	0.74	0.5	1.0
2050± (Buildout)	1610	0.45	0.89	-	-

D. Opportunities for Shared Facilities

Due to the remote location of the District within the county there are few apparent opportunities for shared facilities. However, the Imperial Irrigation District has considered constructing an electric sub station in the north-east corner of the District which could potently double the existing average daily flows at the WWTP. Additionally, there are residents of Niland just outside the District's Sphere of Influence that could be taken off septic systems in the future should the Sphere of Influence be expanded.

E. Phasing

Based on the results of the hydraulic analysis, the following backbone improvements are recommended to provide adequate capacity during PWWF conditions:

Phase I - Within 5 Years, *Short Term Improvements*

1. Install sewer pump station at the north-east corner of Fourth Street and Nieto Road (south-west corner of proposed housing tract, see Appendix C)

2. Install 5,000 ft ± of 4-inch diameter force main along Nieto Road between the proposed sewer pump station and Alcott Road and along Alcott Road between Nieto Road and the WWTP.

3. Collection system improvements as proposed by NOLTE (Appendix D)
   - Phase 1 -- Replace 160 ft of 8-inch diameter damaged pipe, rehabilitate 5,200 ft of 8-inch diameter pipe, and coat 14 brick manholes to reduce I/I.

Phase II - Within 10 Years, *Mid Term Improvement*

1. Upsize 500 ft of pipeline from 8-inch to 10-inch diameter along Highway 111 (pipes 87-88 and 46-87, refer to Exhibit B)

Phase III – Before Build-out (year 2050±), *Long Term Improvement*

1. Upsize 2,100 ft of pipeline from 10-inch to 12-inch diameter along Alcott Road (pipe 103-104, 102-103, & 101-102)

2. Upsize 820 ft of pipeline from 8-inch to 10-inch diameter along Highway 111 (pipes 23-35 & 35-46)

3. Upsize 1,080 ft of pipeline from 8-inch to 10-inch diameter along 6th Street (pipes 83-84, 84-85, 85-86, and 86-88)

No major improvements are needed for the WWTP because the existing design or ADF capacity of the plant is 0.50 MGD and the projected averaged daily flow at build-out of the Sphere of Influence is 0.45 MGD. However, the District should be financially prepared to replace individual plant components when they reach the end of their life span.

Note: Before improvements within Phases II & III are implemented, flow monitoring should be conducted as average daily flows may change due to irregular population growth patterns, pipeline rehabilitation projects reducing I/I, and costumer flat fee monthly water charges changing to metered fees.

III. MITIGATION

The District should continue to pursue various means by which to obtain funding for and to provide adequate wastewater conveyance facilities for the existing and future residents. Conveyance methods required for future developments should be determined on an individual basis depending on geographical location and capacity of existing facilities. The following are recommendations to achieve adequacy for wastewater facilities:

A. The District should adopt design standards to assist in the sizing of future wastewater facilities.

B. Prior to the recordation of a final map within any of the annexation areas, a "will serve" agreement shall be in place to ensure that adequate wastewater facilities will be provided during the PWWF conditions for the wastewater conveyance system being utilized by said development.

C. All system improvements shall be designed and constructed in accordance with Federal, State, and Local regulations and standards.

D. The City should reevaluate their development impact fees (at least every five years).

IV. FINANCING

The primary sources of revenue for wastewater treatment and conveyance facilities are sewer service charges, sewer capacity fees, sewer connection fees, and USDA grants. The sewer service charges function to subsidize off-site facilities such as sewer interceptors and sewer treatment plants. The sewer capacity fee is based on the equivalent dwelling unit (EDU) impact created and will fund the future upgrades and expansion of the District's WWTP. The District will continue to utilize these funding sources in addition to searching for other sources to improve the existing system to meet future flows.

A. Per Capita Costs

The current annual cost for the continued maintenance and operation of the wastewater system in the District is approximately $254.03 per EDU. Operating expenses for 2005 FY were budgeted

at $207,540 excluding debt payments[4]. Using the District's current EDU count, maintenance and operation of the wastewater facilities cost approximately $254.03 per EDU per year.

$207,540 / 817 EDU = $254.03 per EDU

B. Future Funding Sources

NSD will continue to utilize the existing funding sources for wastewater facilities. The sewer service charge collected by the District is the primary funding source. The current fees will need to be reviewed annually and during proposed annexations to ensure that there is sufficient funding to supply wastewater service to new development.

As stated in the above section, there are several improvements which must be made to the system to accommodate growth throughout the District. The identified improvements and cost estimates for short term improvements (Phase I) to the wastewater system are identified in Table 1-6. The cost to complete these improvements is estimated to be $830,000.

Table 1-6 – Cost Estimate for Phase I

Improvement	Cost
Sewer Pump Station	$175,000
4-inch Force Main (5,000 ft ±)	$200,000
NOLTE Proposed Improvements[5]	$455,000
Total Phase I Cost	**$830,000**

The costs estimated for the future wastewater system improvements for both the mid term and long term are provided in Table 1-7. The total cost to complete these improvements is estimated to be $549,000.

Table 1-7 – Cost Estimate for Phase II & III

Improvement	Cost
Phase II	
Replace 500 ft of 8-inch pipe with 10-inch	$57,500
Phase III	
Replace 2,100 ft of 10-inch pipe with 12-inch	$273,000
Replace 1,900 ft of 8-inch pipe with 10-inch	$218,500
Total Phase II & III Cost	**$549,000**

[4] Niland Sanitary District, Financial Report, (June 30, 2004) Hutchinson and Bloodgood LLP
[5] Data obtained from NOLTE's Niland Sanitary District Collection System Investigation (June 2005), refer to Appendix D

The combined short term and ultimate improvement project cost are summarized in Table 1-8 and total approximately $1,930,000.

Table 1-8 – Cost Estimate For Future Wastewater Facilities

Improvement Phase	Cost
Phase I	$830,000
Phase II	$57,500
Phase III	$491,500
Construction Cost	$1,379,000
Project Cost[6]	**$1,930,000**

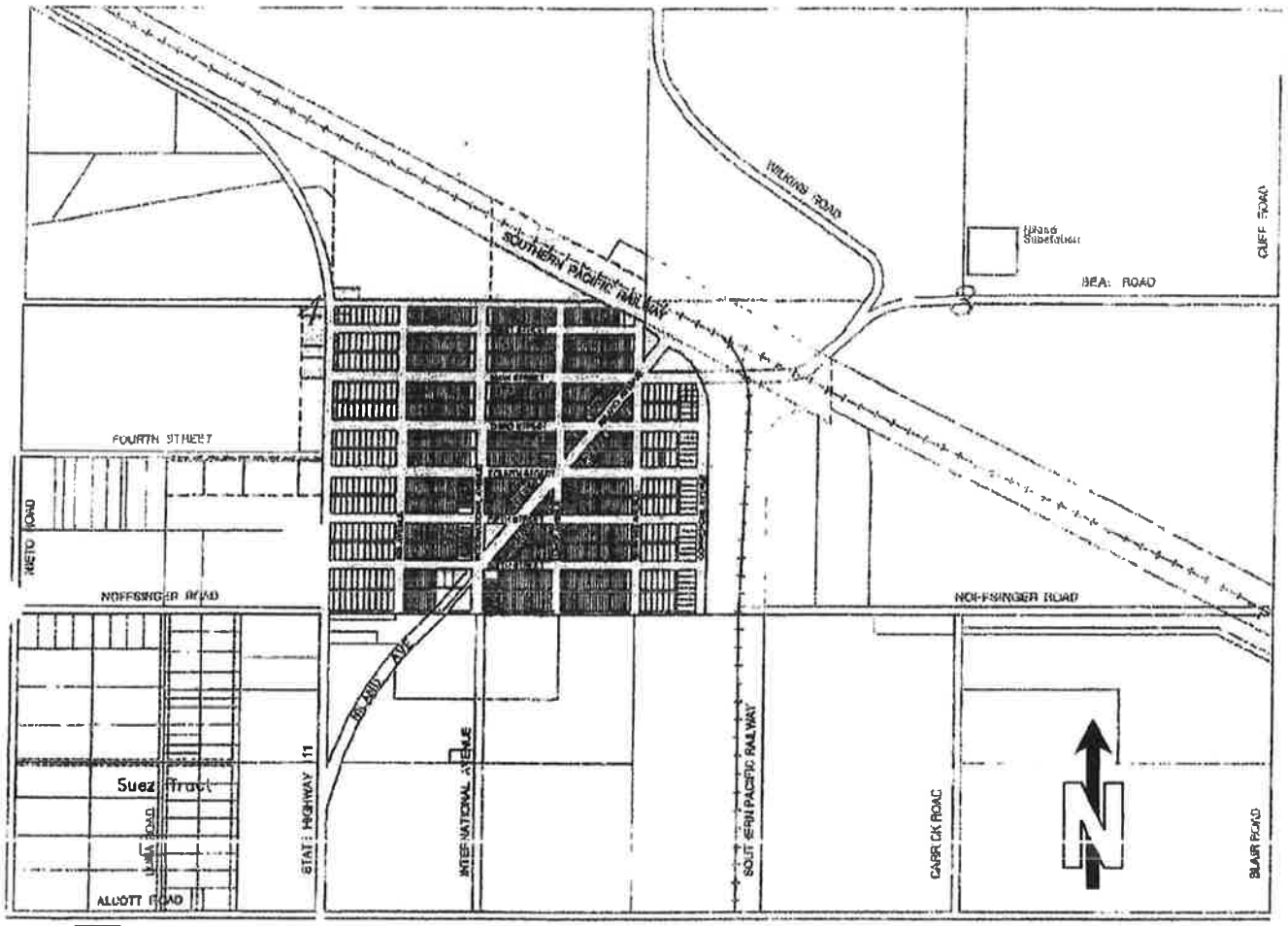
There are a number of financing mechanisms available to assist in the funding for capital facilities related to the treatment and conveyance of wastewater. Special assessment districts, community facilities districts, local bond issuance, developer contributions and development impact fees can be used to fund construction of wastewater treatment and collection facilities. Also, there are a number of State and Federal grant and loan programs available such as *USDA Water and Waste Disposal Loans* and *Grants for Public Works and Infrastructure Development.*

Because the sewer pump station and 4" diameter force main benefit only the proposed annexation area, these improvements will be financed entirely by the developer. The I/I collection system improvements will be funded by a USDA grant, which has already been secured by the District. All other improvements will be funded by one of these other means aforementioned. For further description of the District's funding plans, hookup rates, capacity fees, etc, refer to the District's most recent Wastewater Rate Study (Appendix E) or consult the District.

Pursuant to the request of LAFCo, additional information related to the wastewater facilities, specifically the sewer rates for the past three years and a list of current board members have been provided in Appendix F.

[6] Project cost is 1.4 times construction cost rounded to nearest $10,000. Project cost includes: construction costs, construction contingencies, design engineering including plans and specifications; design and construction surveying and mapping; geotechnical evaluation and report; engineering contract administration; field inspection and basic environmental documentation. Costs are based on LA Engineering News Record August, 2005 (8,277.95).

(ENR) Escalation, financing, interest during construction, legal, land, R-O-W agent, and environmental impact report costs are not included



Scale
N.T.S.

Key

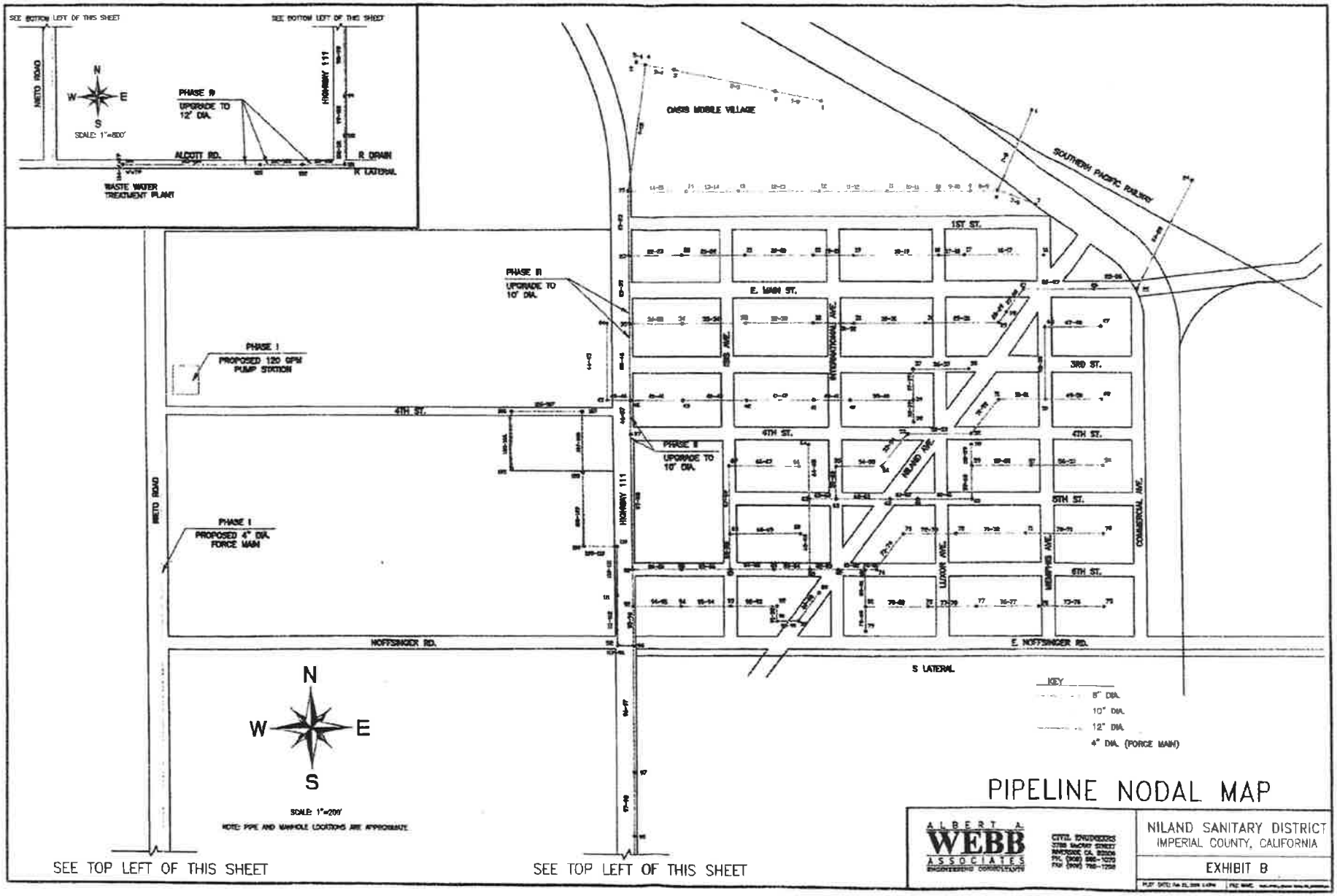
Existing Sphere of Influence

Area to be added to Sphere of Influence

Niland Sanitation District
Sphere of Influence

EXHIBIT A

ALBERT A. WEBB ASSOCIATES



PIPELINE NODAL MAP

ALBERT A. WEBB ASSOCIATES
ENGINEERING CONSULTANTS

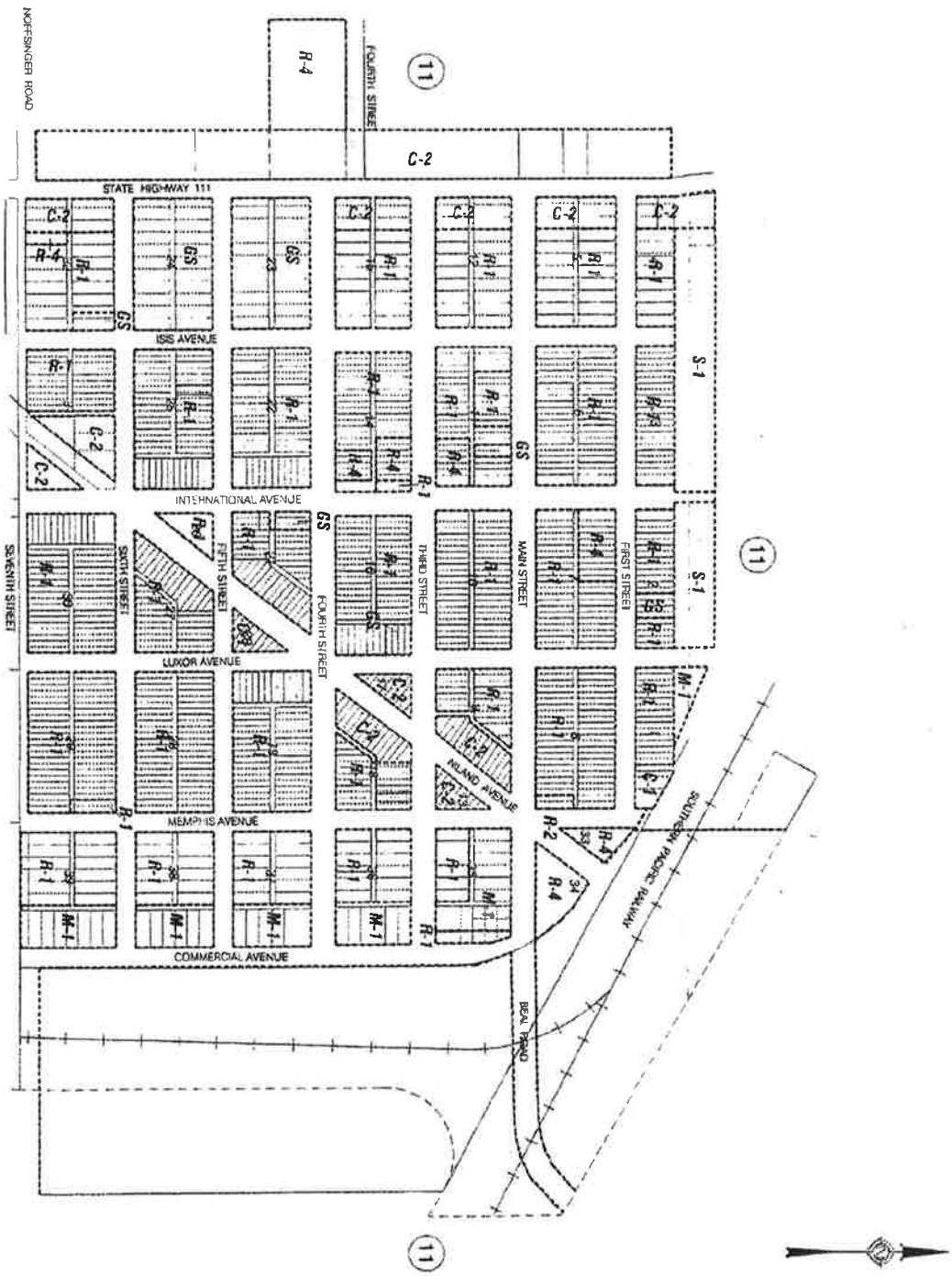
NILAND SANITARY DISTRICT
IMPERIAL COUNTY, CALIFORNIA

EXHIBIT B

APPENDIX A

TOWNSITE OF NILAND ZONING MAP

NOTE: THIS IS THE TOWNSITE ENLARGED FROM MAP 11.



NOTE: Efforts have been made to insure zoning accuracy; however, this map may be revised at any time. Therefore this map is generally accurate, for zoning information only! Neither the County of Imperial nor the Planning/Building Department are responsible for erroneous information or improper use of this map.

Adopted by M. O. # 15 (d) on Feb. 10, 1998 effective July 1, 1998

Director _____

TOWNSITE OF NILAND

Title 9 Division 25 Section 92511A.00

MAP 11A

Revision Dates:

October 7, 2002 = Map Correction

Imperial County Planning/Building Department

R:\ZONEMAPS\ZONE11A.DWG

APPENDIX B

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT

REGIONAL BOARD MEETING

State of California
California Regional Water Quality Control Board
Colorado River Basin Region

EXECUTIVE OFFICER SUMMARY REPORT
June 25, 2003, Wednesday 10:00 a.m.
City Council Chambers
City of La Quinta
78-495 Calle Tampico
La Quinta, CA 92253

ITEM: 3

SUBJECT: National Pollutant Discharge Elimination System (NPDES) Permit and Waste Discharge Requirements for Niland Sanitary District – Niland Wastewater Treatment Facility, Owner/Operator - Niland, Imperial County (Updated)

DISCUSSION:

Niland Sanitary District owns and operates a wastewater collection, treatment and disposal system (hereinafter referred to as facility) and provides sewerage service to the City of Niland. The wastewater treatment plant, has a treatment capacity of 0.50 million gallons-per-day (MGD) and is located at 125 West Alcott Street, Niland, California 92257.

The treatment system consists of a manual bar screen, three, lined, partial-mix, aerated, stabilization ponds connected in series, and a chlorination/dechlorination system.

The final effluent is discharged to Imperial Irrigation District's "R" Drain, flows four miles and then discharges to the Salton Sea.

The discharger currently operates under Board Order No. 98-017 (NPDES No. CA 0104451), which allows discharge of effluent into Imperial Irrigation Districts "R" Drain. This permit will replace Board Order No. 98-017 with Order No. R7-2003-0014.

This updated Board Order has incorporated up-to-date requirements of the Federal and State laws, including U.S. EPA's California Toxics Rule, as well as the State's Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California.

RECOMMENDATION:

The attached Order No. R7-2003-0049 be adopted.

3-1

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION

ORDER NO. R7-2003-0049
NPDES NO. CA0104451

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT
AND
WASTE DISCHARGE REQUIREMENTS
FOR
NILAND SANITARY DISTRICT, OWNER/OPERATOR
NILAND SANITARY WASTEWATER TREATMENT PLANT
AND
WASTEWATER COLLECTION AND DISPOSAL SYSTEMS
Niland – Imperial County

The California Regional Water Quality Control Board, Colorado River Basin Region finds that:

1. On February 14, 2003, Niland Sanitary District (hereinafter referred to as the discharger), P.O. Box 40, Niland CA 92257, submitted an application to update its Waste Discharge Requirements (WDRs) and to renew its permit to discharge wastewater under the National Pollutant Discharge Elimination System (NPDES). The application is to update its WDRs and NPDES permit for the Niland Wastewater Treatment Plant (WWTP), located at 125 West Alcott Street, Niland CA 92257, and its wastewater collection and disposal systems.

2. The Niland Sanitary District owns and operates a wastewater collection, treatment and disposal system (hereinafter referred to as facility) and provides sewerage service to the City of Niland. The WWTP, has a treatment capacity of 0.50 million gallons-per-day (MGD) and is located in Section 9, T11S, R14E, SBB&M.

3. The final effluent is discharged to Imperial Irrigation District's "R" Drain located in the SW ¼ of Section 9, T11S, R14E, SBB&M. The "R" Drain flows four miles and then discharges to the Salton Sea.

4. The treatment system consists of a manual bar screen, three lined partial-mix aerated stabilization ponds connected in series, and a chlorination/dechlorination system. The total detention time in the basins is 20 days. The effluent is oxygenated by six – 7.5 horsepower aerators, providing 1,890 pounds of oxygen per day.

5. The effluent from Pond No. 3 is chlorinated with sodium hypochlorite in a contact chamber for an average contact time of two (2) hours and then dechlorinated with sodium metheulfite.

6. Groundwater in the vicinity of the treatment plant is five (5) feet below ground surface and is lowered to five feet below the pond bottoms via perforated piping around the perimeter of the treatment ponds. The perforated piping drains to a wet well of a ground water pumping station located at the site. The discharger has indicated that the water from the wet well is discharged to an unlined pond and used for cleaning equipment.

7. The discharger monitors ground water levels in 10 ground water wells.

8. The discharger owns and operates the wastewater collection system, approximately 8 miles in length, which provides conveyance of raw wastewater to the treatment facility.

DRAFT June 12, 2003
5-2

9. The NPDES monitoring reports described the proposed discharge as follows:

   Annual Average Effluent Flow – 0.23 MGD
   Lowest Monthly Average Effluent Flow – 0.21 MGD
   Highest Monthly Average Effluent Flow – 0.27 MGD

10. The NPDES Permit Application described the influent flow characteristics as follows:

    BOD annual average value – 171 mg/L (milligrams per Liter)
    Total suspended solids annual average value – 218 mg/L

11. The previously submitted NPDES monitoring reports described the effluent characteristics as follows:

pH Lowest Monthly Average	7.5 pH Units
pH Highest Monthly Average	8.3 pH Units
BOD Annual Average Value	19.0 mg/L
BOD Lowest Monthly Average Value	9.0 mg/L
Total Suspended Solids Annual Average Value	21 mg/L
Total Suspended Solids Highest Monthly Average Value	40 mg/L

12. The discharger has been subject to an NPDES Permit and WDRs adopted May 14, 1998 in Board Order No. 98-017 (NPDES No. CA0104451), which allows for discharge to Imperial Irrigation District's "R" Drain.

13. Discharges of less than 1.0 MGD are classified as Minor by the United States Environmental Protection Agency. Accordingly, Regional Board staff has classified this discharge as a Minor Discharge.

14. The discharger reports that there are no known industrial wastes subject to regulation under the NPDES Pretreatment Program being discharged to the WWTP.

15. This Board Order updates the WDRs to comply with the current laws and regulations as set forth in the California Water Code, the California Code of Regulations, and the Code of Federal Regulations.

16. The Water Quality Control Plan for the Colorado River Basin Region of California (Basin Plan), as amended to date, designates the beneficial uses of ground and surface waters in this Region.

17. The designated beneficial uses of waters in the Imperial Valley Drains are:

    a. Fresh Water Replenishment of Salton Sea (FRSH)
    b. Water Contact Recreation (REC I)[1, 2]
    c. Non-Contact Water Recreation (REC II)[1]
    d. Warm Water Habitat (WARM)
    e. Wildlife Habitat (WILD)
    f. Preservation of Rare, Threatened or Endangered Species (RARE)[3]

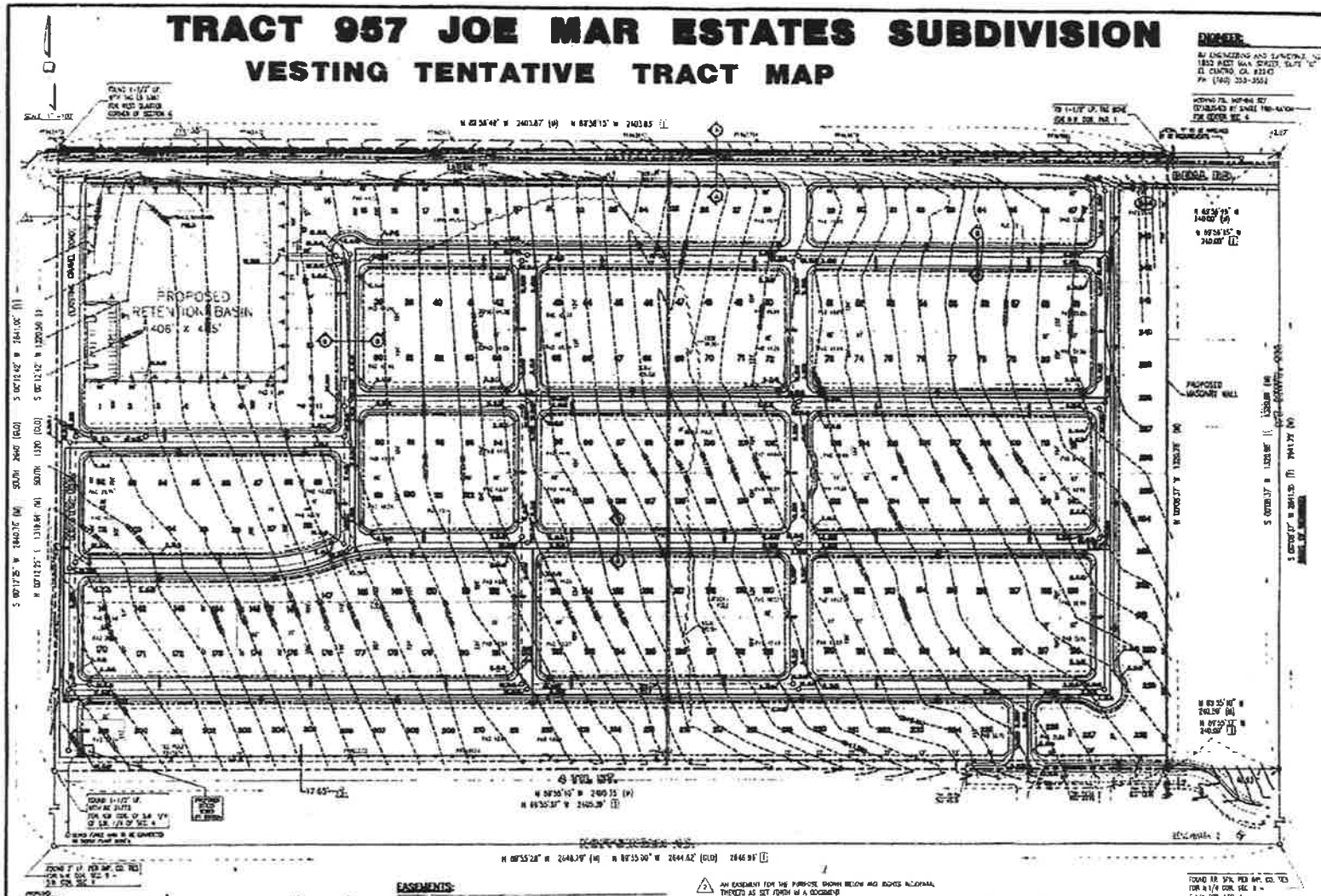
[1] Unauthorized Use.
[2] The only Rec 1 usage that is known to occur is from infrequent fishing.
[3] Rare, endangered, or threatened wildlife exists in or utilizes some of these waterway(s). If the RARE beneficial use may be effected by a water quality control decision, responsibility for substantiation of the existence of rare, endangered, or threatened species on a case-by-case basis is upon the California Department of Fish and Game on its own initiative and/or at the request of the Regional Board; and such substantiation must be provided within a reasonable time frame as approved by the Regional Board.

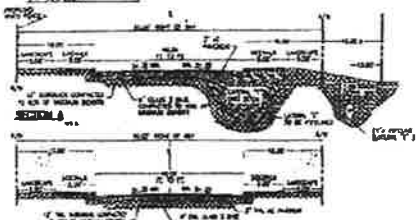
APPENDIX C

TRACT 957 JOE MAR ESTATES SUBDIVISION
VESTING TENTATIVE TRACT MAP

TRACT 957 JOE MAR ESTATES SUBDIVISION

VESTING TENTATIVE TRACT MAP





EASEMENTS:

1. AN EASEMENT FOR THE PURPOSE SHOWN BELOW AND ALL RIGHTS INCIDENTAL THERETO AS SET FORTH IN A DOCUMENT
   GRANTED TO: IMPERIAL IRRIGATION DISTRICT
   PURPOSE: FOR IRRIGATION, BASIN OR DRAINAGE CANALS, OR POWER OR TELEPHONE LINES.
   RECORDED: OCT 14, 1937 IN BOOK 493, PAGE 408, OFFICIAL RECORDS
   AFFECTS: RIGHT-OF-WAY 10 FEET IN WIDTH ACROSS, LYING PARALLEL WITH AND ADJACENT TO, ON THE SOUTH SIDE OF AND IN ADDITION TO EXISTING SIDE OF WAY FOR DIKE "F" LATERAL NOW CONSTRUCTED ALONG THE NORTH SIDE, LOTS 1 TO 24 INCLUSIVE OF MORRISON'S SUBDIVISION NO. 1 OF FINAL CONTAIN PLOT OR PARCEL OF LAND SITUATED IN THE COUNTY OF IMPERIAL, STATE OF CALIFORNIA, AND PARTICULARLY DESCRIBED AS FOLLOWS, TO-WIT:
   LOTS 1 TO 24 INCLUSIVE OF MORRISON'S SUBDIVISION NO. 1, BEING A SUBDIVISION OF THE N.E. 1/4 OF THE S.W. 1/4 OF SECTION 4, T. 11 S., R. 14 E., S.B.M.
   IT IS EXPRESSLY UNDERSTOOD THAT THE SOUTH BOUNDARY OF SAID EIGHT-OF-WAY SHALL BE 30 FEET SOUTH OF THE CENTER LINE OF THAT CERTAIN "F" LATERAL NOW CONSTRUCTED ALONG THE NORTH BOUNDARY OF SAID ABOVE DESCRIBED REAL ESTATE.

2. AN EASEMENT FOR THE PURPOSE SHOWN BELOW AND ALL RIGHTS INCIDENTAL THERETO AS SET FORTH IN A DOCUMENT
   GRANTED TO: IMPERIAL IRRIGATION DISTRICT
   PURPOSE: FOR IRRIGATION, BASIN OR DRAINAGE CANALS, OR POWER OR TELEPHONE LINES.
   RECORDED: MARCH 23, 1937 AS BOOK 388, PAGE 182, OFFICIAL RECORDS.
   AFFECTS: ALL THIS PROPERTY.

3. AN EASEMENT FOR THE PURPOSE SHOWN BELOW AND ALL RIGHTS INCIDENTAL THERETO AS SET FORTH IN A DOCUMENT
   GRANTED TO: IMPERIAL IRRIGATION DISTRICT
   PURPOSE: EXISTING DIKE AND EXISTING ROADS AND INCIDENTAL USES.
   RECORDED: JULY 28, 1948 IN BOOK 734, PAGE 439, OF OFFICIAL RECORDS
   AFFECTS: EXISTING STATE AND COUNTY ROADS AND HIGHWAYS UPON.

4. AN EASEMENT FOR THE PURPOSE SHOWN BELOW AND ALL RIGHTS INCIDENTAL THERETO AS SET FORTH IN A DOCUMENT
   GRANTED TO: IMPERIAL IRRIGATION DISTRICT
   PURPOSE: CANALS AND/OR POWER LINES
   RECORDED: NOVEMBER 8, 1921 AS FILE NO. 43, BOOK NONE, PAGE 324, OF OFFICIAL RECORDS.
   AFFECTS: THE NORTHWEST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 4, TOWNSHIP 11 SOUTH, RANGE 14 EAST, S.B.B. & M.

OWNER'S STATEMENT:

I HEREBY CERTIFY THAT I AM THE OWNER OF THE PROPERTY SUBDIVIDED AS SHOWN ON THIS MAP, AND FURTHER THAT I CONSIDER SUCH SUBDIVISION AND MAP TO BE MADE AND DEDICATE OF PUBLIC USE THE STREET AS SHOWN ON THIS MAP.

THE BURDENING RIGHTS ARE AT THE NORTH REAL RD., AT THE EAST HWY 111, AT THE SOUTH & W. ST., AND AT THE WEST RICH RD.

LOCATED SOUTHERLY OF THE PROPERTY IS MORRIS TRACT, AT THE EAST, CONSISTS OF HOLMES, LOCATED TO THE SOUTH OF BLUE COAST AND ALEXANDRIA TRACT

NOTE: ADD 800' TO ALL PAD ELEVATIONS FOR FINISH FLOW GRADES & PIPE INVERTS

NO.	DESCRIPTION	DATE	BY
1	PER COUNTY COMMENTS	10/31/06	E.B.L.
2	CHANGES PER CLIENT	12/07/06	E.B.
3	CHANGES PER CLIENT	12/07/06	E.B.

BJ ENGINEERING & SURVEYING, INC.

TENTATIVE MA

PROJECT

VICINITY MAP

BASIS OF BEARINGS:

THE BASIS OF BEARINGS FOR THIS SURVEY IS ' ' AS SHOWN AS THE CENTER LINE OF SECTION 4 AS SHOWN MAP NO. M-1131 FILED IN BOOK 9, PAGE 11 IN THE OFFICE OF THE COUNTY OF IMPERIAL, STATE OF CALIF

LEGAL DESCRIPTION:

APN 021-040-23-01

THE NORTH HALF OF THE SOUTHWEST QUARTER OF SE TOWNSHIP 11 SOUTH, RANGE 14 EAST, S.B.M., IN THE OF IMPERIAL, STATE OF CALIFORNIA, ACCORDING TO TH STATES GOVERNMENT SECTIONAL PLAT OF RE-SURVEY AP WAS ON FILE IN THE DISTRICT LAND OFFICE.

EXCEPTING THEREFROM THE EAST 240 FEET THEREOF.

GENERAL INFORMATION:

1) EXISTING ZONING: COUNTY R-1 U
2) IMPROVEMENT STANDARDS: IMPERIAL COUNTY
3) FRONT YARD SETBACK: 25 FEET
4) REAR YARD SETBACK: 25 FEET
5) SIDE YARD SETBACK: 5 FEET
6) SIDE YARD SETBACK AT CORNER: 15 FEET
7) MINIMUM CURB AND GUTTER SLOPE: 0.0030 FT/FT
8) 1" WATER SERVICE AND WATER PER RESIDENTIAL LO
9) GROSS AREA = 22.80 ACRES

SECTION C

LEGEND:

- PROJECT LINE
- EXISTING DIRT ROAD
- EXISTING POWER POLE
- SET 1-1/2" IRON PIPE WITH
- RECORD DATA PER GENERAL
- MEASURED DATA
- BEARING DATA PER PARCEL MA RECORDED IN BOOK 3, PAGE
- EXISTING DITCH & GUTTER
- EXISTING SEWER LINE
- PROPOSED 8" SEWER LINE
- PROPOSED STORM DRAIN LINE
- PROPOSED ASPHALT PAVEMENT
- PROPOSED CONCRETE AREA
- PROPOSED FIRE HYDRANT
- PROPOSED LIGHT POLE
- PROPOSED CHAIN LINK FENCE

BENCHMARK:

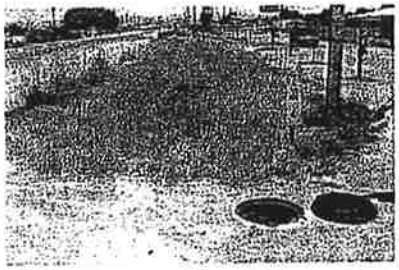
1) FOUND BENCHMARK
   M.C. DOT BRASS WASH, @ INTERSECTION OF HIGHWAY 111 & NORTH-SOUTH RD
   ELEVATION =
2) SET CONCRETE
   C.D.I. BRASS CAP AT SOUTHWEST CORNER OF HIGHWAY 111 & 4TH STREET
   ELEVATION =

APPENDIX D

NOLTE 2005 COLLECTION SYSTEM INVESTIGATION REPORT

Niland Sanitary District

Collection System Investigation



Prepared for

Niland Sanitary District

June 2005

Prepared by

Nolte Associates, Inc.

NOLTE

BEYOND ENGINEERING

Imperial County Community & Economic Development

USDA UNITED STATES DEPARTMENT OF AGRICULTURE

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EXECUTIVE SUMMARY

This Preliminary Engineering Report Supplement analyzes, identifies deficiencies in, and recommends improvements to the Niland Sanitary District's (NSD) existing wastewater collection system based on a television investigation of Niland's wastewater collection system. The wastewater treatment facility and pump station are not evaluated in this Supplement. The principal Preliminary Engineering Report for Niland Sanitary District was prepared by Camp, Dresser, and McKee (CDM) in 2004. The CDM report evaluates the wastewater treatment facility.

District personnel report that the per capita average daily flow to the wastewater treatment facility is significantly higher than what a typical desert community would discharge. In recent years, the District has not met some of the parameters of its NPDES permit. It is believed that groundwater infiltration has contributed to not meeting three of these discharge parameters: BOD % removal, e. Coli concentrations, and metals concentrations. To District personnel's knowledge, the wastewater collection system has never been cleaned before Spring 2005. In 1982 approximately 5,000 LF of the southwest portion of the collection system was televised. Numerous deficiencies in the collection system were identified. Due to lack of funds, no action has been taken to address those deficiencies.

Condition of Existing Wastewater Collection System Infrastructure

Nolte engineers used the results of the 2005 cleaning and televising efforts, laboratory analysis, and visual inspection to analyze the wastewater collection system. The following are observations on the condition of the wastewater collection system:

- From the televising of the pipelines and visual inspection, infiltration is very high near the IID's S Lateral. Manholes near E. Noffsinger Road and Sixth Street had high flow, with clear wastewater during mid morning hours, when flows from domestic generation are normally lower.
- By visual inspection, the flow along Highway 111 was very high and clear, indicating that areas upstream of Highway 111 and Sixth Street are subject to significant infiltration. No other manhole along Highway 111 could be opened to pinpoint the sources of infiltration. This area could not be televised due to the high flows.
- Although not verifiable, it is believed that infiltration is significant along the gravity pipeline on Alcott Road. The manholes along this pipeline either could not be opened or located, eliminating the possibility for pipeline inspection. The conditions in this area are very similar to those along E. Noffsinger Road. IID irrigation and drainage facilities are adjacent and parallel to the pipeline, creating a locally high groundwater table.
- Numerous manholes in County rights-of-way have been paved over by several inches of asphalt. This has made locating, opening, and maintaining manholes challenging. Numerous manholes in paved areas could not be located, even with the assistance of a metal detector.
- The grout in numerous brick manholes has deteriorated, enabling significant infiltration. These manholes appear to be in good structural condition, however they are in need of rehabilitation to reduce infiltration and extend their useful lives.
- Sedimentation was significant in the majority of the gravity pipelines. In some locations, the depth of the sediment has filled the bottom two inches (25% d/D) of the pipeline. Much of this sediment was removed during the cleaning progress.
- Small cracks in the vitrified clay pipe (VCP) were visible throughout much of the collection system. It is believed that the pipelines remain in good structural condition, but the cracks are susceptible to infiltration.

- Numerous manholes shown on the District system atlas could not be located. The manholes that should have been in the unpaved alleys either do not exist or were covered with rock, dirt, debris, or dense vegetation.
- Numerous manholes could not be opened or were extremely difficult to open, even in unpaved areas with the assistance of sledge hammers and picks for leverage. During attempts to open the manholes, some rings were significantly damaged. Areas where no manhole access was possible, very limited or minimal cleaning or televising was completed. According tot he District, there are no locking devices on the manhole covers.
- BOD concentrations were generally much lower in the collection system than what would normally be anticipated. Typical BOD concentrations for domestic wastewater range from 150 to 200 mg/l. BOD concentrations in four of the six sampling locations ranged from 33 to 120 mg/l. The lines with lowest BOD concentrations were:
  - Gravity pipelines north of First Street
  - Gravity pipelines north of Fourth Street
  - Gravity pipelines north and south of Sixth Street
- A primary source of metals at the wastewater treatment facility may be infiltration of groundwater. Areas in the collection system with high metals concentrations are a priority for infiltration reduction. The areas with the highest sampled metals concentrations include:
  - Gravity pipelines north of First Street
  - Gravity pipelines north of Fourth Street

Proposed Improvements

The improvements address deficiencies in the collection system identified during the 2005 investigation. These improvements do not include any necessary improvements to the pump station or wastewater treatment facility. Some portions of the collection system could not be investigated due to the inability to locate or open manholes. As a result, it is likely that there are additional areas of the collection system where significant infiltration is taking place, but have not been identified. Improvements to these areas have not been identified or estimated.

The total cost for improvements to the collection system is $551,700. These improvements are broken down below.

Pipelines

- Replace 160 feet of 8" pipe with 8" PVC pipe - $12,000
- Rehabilitate 5,200 feet of 8" pipe with cured in place pipe - $338,000
- Clean, televise and evaluate 16,000 feet of pipe not previously accessible - $48,000

Manholes

- Locate and open 44 manholes - $11,000
- Raise 19 manoles to street level - $28,500
- Coat 14 manholes - $105,000
- Repair 6 manhole rings/covers - $7,200
- Concrete plug 2 manholes - $2,000

Phased Improvements

The main focus of the improvements is to reduce infiltration into the collection system. This is done by making improvements to the known deficiencies and identifying deficiencies in areas that have not been analyzed. The secondary focus of the improvements is to improve the manholes to create a safer environment for community, facilitate system operations and maintenance, and extend the service life of the manholes. The proposed improvements are broken down into three phases below.

Phase 1

- Replace 160 feet of 8" pipe with 8" PVC pipe - $12,000
- Rehabilitate 5,200 feet of 8" pipe with cured in place pipe - $338,000
- Locate and open 24 manholes - $6,000
- Raise 6 manhole rims - $9,000
- Coat 14 manholes - $105,000
- Repair 2 manhole rings/covers - $2,400
- Plug and abandon lines at 2 manholes - $2,000

Phase 2

- Locate and open 16 manholes - $4,000
- Raise 14 manhole rims - $21,000
- Repair 4 manhole rings/covers - $4,800
- Clean , televise, and analyze 8,000 feet of collection system - $24,000

Phase 3

- Locate and open 5 manholes - $1,000
- Raise 4 manhole rims - $6,000
- Clean, televise, and analyze 8,000 feet of collection system – $24,000

SECTION 1 - BACKGROUND AND PROJECT PLANNING AREA

Nolte Associates prepared this Preliminary Engineering Report Supplement to analyze, identify deficiencies in, and recommend improvements to the Niland Sanitary District's (NSD) existing wastewater collection system. The analysis and recommendations are based upon a television investigation of Niland's wastewater collection system. The wastewater treatment facility and pump station are not evaluated in this Supplement.

The principal Preliminary Engineering Report for Niland Sanitary District was prepared by Camp, Dresser, and McKee (CDM) in 2004. The CDM report evaluates the wastewater treatment facility. That report includes a brief evaluation of the wastewater collection system based primarily on an investigation of a portion of the collection system completed in 1982. NSD received grant funding to complete an investigation of its wastewater collection system and prepare this Supplement to the Preliminary Engineering Report.

The District's collection system is located within the Niland Township, generally bordered by Highway 111 on the west, E. Noffsinger Road on the south, and the Union Pacific Railroad tracks on the east and north. The collection system connects to the wastewater treatment facility by a gravity sewer that flows south along Highway 111 to Alcott Road, then west to the treatment facility. Wastewater enters the treatment facility through a pump station at the treatment facility site. Refer to Exhibit 1.

District personnel report that the per capita average daily flow to the wastewater treatment facility is significantly higher than what a typical desert community would discharge. The principal causes of the high infiltration levels are likely a combination of the following:

- A flat monthly fee for water usage that encourages landscape irrigation. The Southern California Water Company provides potable water to the community.
- The Coachella Canal, owned and operated by the Coachella Valley Water District, is located northeast and uphill of the community. This canal is unlined.
- The community's proximity to the Salton Sea results in a relatively high downstream groundwater elevation.
- Local Imperial Irrigation District canals and drains that likely maintain locally high groundwater levels, especially along E. Noffsinger Road and Alcott Road.

In recent years, the District has not met three quality requirements of the parameters of its NPDES permit, Order No. R7-2003-0049, NPDES No. CA0104451. It is believed that groundwater infiltration has contributed to exceeding the parameters. These are discussed below.

- Percent removal of BOD: Although the facility consistently meets its discharge requirements for BOD effluent concentrations, the percentage of influent BOD that is removed during the treatment process is too low. It is believed that groundwater infiltration is diluting the BOD, making its removal more difficult.
- E. Coli concentrations in the treatment facility discharge: The hydraulic retention time in the treatment facility's chlorine contact chamber is reduced by increased flows caused by infiltration. A lower flow would lengthen the hydraulic retention time in the contact chamber, making disinfection more effective.
- Metals concentration: The facility's NPDES permit lists interim effluent limitations for copper (20µg/l), thallium (17µg/l), and selenium (12µg /l). In June 2008, the NPDES permit will be updated to reflect more stringent metals discharge requirements: copper (2.39µg /l), thallium (6.3µg /l), and selenium (4.09µg /l). It is believed that a key source of metals entering the treatment facility is groundwater infiltration.

According to District personnel, the wastewater collection system had never been cleaned before Spring 2005. In 1982 approximately 5,000 LF of the southwest portion of the collection system was televised. Numerous deficiencies in the collection system were identified. Due to lack of funds, no action was taken to address those deficiencies.

SECTION 2 – EXISTING WASTEWATER COLLECTION SYSTEM FACILITIES

Collection System Orientation

The general orientation of the wastewater collection system is shown in Exhibit 1. Wastewater flows via gravity sewers in a westerly direction with the sloping topography connecting to a north-south oriented gravity sewer that parallels Highway 111. In the northern portion of the community, the gravity sewer pipelines are generally located in alleys. In the southern portion of the community, the gravity sewers are more frequently located in paved streets maintained by the Imperial County Public Works Department. South of the Township, the wastewater flows by gravity for approximately one mile along Highway 111 and Alcott Road to the treatment facility.

Condition of Existing Wastewater Collection System Infrastructure

Television Investigation

Cleaning, televising, and visual inspection by Nolte were sources of information used to analyze the wastewater collection system. The conditions of the collection system are shown in Exhibit 1. The following are observations on the physical condition and characteristics of the wastewater collection system:

- The depths of the sewer lines are not excessive.
- The majority of cracks in the vitrified clay pipe (VCP) are located near the pipe bells and are circumferential, not longitudinal.
- Numerous manholes in County right of way have been paved over with several inches of asphalt. This has made locating, opening, and maintaining manholes challenging. Numerous manholes in paved areas could not be located, even with the assistance of a metal detector.
- Numerous manholes shown on the District system atlas could not be located. Of these, the manholes that should have been in the unpaved alleys either do not exist or are covered with rock, dirt, debris, or dense vegetation.
- Some manholes are inaccessible by conventional means due to the concrete placed above the manhole cover to create a driving surface flush with the street.
- Grout in numerous brick manholes has deteriorated, enabling significant infiltration. These manholes appear to be in good structural condition, however they are in need of rehabilitation to reduce infiltration and extend their useful lives.
- Many service laterals extend several inches into the gravity sewers, stopping television inspection progress and possibly encouraging blockages.
- Sediment buildup was significant in the majority of the sewers. In some locations, the depth of the sediment has filled the bottom two inches (25% d/D) of the sewer. Much of this sediment was removed during the cleaning process.
- Small cracks in the VCP were visible throughout the collection system. It is believed that the sewers remain in good structural condition, but cracks are susceptible to infiltration.

- Numerous manholes could not be opened or were extremely difficult to open, even in unpaved areas with the assistance of sledge hammers and picks for leverage. During attempts to open the manholes, some rims and rings were significantly damaged. Areas where no manhole access was possible, very limited or minimal cleaning or televising was completed.
- By visual inspection, infiltration is believed to be very high near the IID's S Lateral. Manholes near E. Noffsinger Road and Sixth Street had high flow, with clear wastewater during mid morning hours, when flows from domestic generation are normally low.
- By visual inspection, the flow along Highway 111 was very high and clear, indicating that areas upstream of Highway 111 and Sixth Street are subject to significant infiltration. No other manhole along Highway 111 could be opened to pinpoint the sources of infiltration.
- Although not verifiable, it is believed that infiltration is significant along the gravity pipeline on Alcott Road. The manholes along this pipeline either could not be opened or located, eliminating the possibility for pipeline inspection. The conditions in this area are very similar to those along E. Noffsinger Road. IID irrigation and drainage facilities are adjacent and parallel to the pipeline, creating a locally high groundwater table.

Laboratory Analysis

It is believed that infiltrating groundwater is a significant source of the metals flowing to the wastewater treatment facility. Samples were taken at six locations within the collection system to assist in the evaluation of the collection system and determination of infiltration locations. Samples were analyzed for biochemical oxygen demand (BOD) and three metals: copper, thallium, and selenium. The results of the analyses are shown on Table 1. Refer to Exhibit 2 for sample locations. The samples were collected once per location and do not constitute a thorough chemical analysis of the wastewater throughout the collection system.

Table 1 - Collection System BOD and Metals Sample Concentrations

MH #	Location	Sample Date	BOD_5 (mg/l)	Cu (µg/l)	Th (µg/l)	Se (µg/l)
14	Highway 111 and First St.	5/25/05	33	24	ND	ND
22	Highway 111 and E. Main St.	5/25/05	158	23	ND	ND
34	Highway 111 and Third St.	5/25/05	230	11	ND	ND
43	Highway 111 and Fourth St.	5/25/05	120	40	ND	ND
81	Niland Ave. and Sixth St.	5/25/05	132	13	ND	ND
95	Highway 111 and E. Noffsinger	5/25/05	102	12	ND	ND
Discharge Limit (NPDES No. CA0104451)				17	17	12
Discharge Limit (June 2008 updated permit)				2.39	6.3	4.09

ND: Nondetectable

Source: ATS Laboratories, Brawley, CA; CA Regional Water Quality Control Board

Typical BOD concentrations for domestic wastewater range from 150 to 200 mg/l. Low BOD measurements are an indicator of high infiltration, as infiltration dilutes the BOD of wastewater that is discharged into the collection system by customers. The majority of the collection system samples had BOD concentrations typically low for domestic wastewater, indicating that much of the system is subject to infiltration. These areas include:

- Gravity sewers north of First Street
- Gravity sewers north of Fourth Street
- Gravity sewers north and south of Sixth Street

It is believed that a primary source of metals at the wastewater treatment facility is the infiltration of groundwater. High metals concentration, specifically copper, thallium, and selenium, can be a potential indicator of infiltration. Areas in the collection system with high metals concentrations are a priority for improving to reduce infiltration. The areas with the highest sampled copper concentrations include:

- Gravity sewers north of First Street
- Gravity sewers north of Fourth Street

No Selenium or Thallium were detected

SECTION 3 – NEED FOR PROJECT

Improvements to the collection system aim to reduce groundwater infiltration. Such a reduction will improve the performance of the wastewater treatment facility, help the District come into compliance with its discharge permit, and reduce operations and maintenance expenses. Addressing the infiltration problem alone will not enable the District to be consistently compliant with its discharge permit. Improvements are needed to the treatment facility (see CDM report). Reducing the infiltration can reduce the District's operating expenses and allow some treatment processes to operate more efficiently and effectively.

Infiltration increases the flow through the wastewater treatment facility. This depresses influent BOD concentrations, inhibiting the treatment process and the District's ability to remove a sufficient percentage of BOD as required by its discharge permit. The higher flows also reduce the hydraulic retention time in the chlorine contact chamber. This contributes to the District's ongoing E. coli violations and resulting fines by the Regional Water Quality Control Board. These fines have totaled more than $100,000 in recent years (14 June 2005 email from D. Wylie, CRWQCB).

Increased flow through the wastewater treatment facility increases operations and maintenance expenses primarily through higher electricity consumption. The pumps at the wastewater treatment facility operate for longer periods than what would normally be required without infiltration. The infiltration results in nearly continuous flows and pumping, whereas the pumps should seldom operate during low flow periods (night and midday). The horsepower in the motor-aerators at the ponds in the wastewater treatment facility can either be reduced, or maintained to improve the treatment facility's performance. This creates the potential for lower electricity demands, lower energy consumption and costs. The oxygen transfer effectiveness could be enhanced with lower flows. This can assist in the removal of nitrogen from the wastewater, and enhance the effectiveness of the disinfectant's ability to remove bacteria, including E. coli.

It is believed that infiltration is a significant source of metals, primarily copper, that enter the treatment facility. Currently, the facility's discharge does not meet the interim requirements of the discharge permit. In addition, maximum discharge concentrations for these metals will be lower (more stringent) with the District's revised permit in 2008. Reducing infiltration could reduce a source of the metals entering the treatment facility.

SECTION 4 – ALTERNATIVES CONSIDERED

The alternatives presented in this section describe potential remedies to deficiencies identified in the collection system investigation completed for this report in 2005. Multiple alternatives may be selected for the collection system as a whole. The best sewer improvement alternative depends on the nature of the localized deficiency, i.e. collapsed lines or cracked sewers with infiltration. The best manhole remedy may be a combination of alternatives; the manhole may need coating and replacement of the ring.

Unit costs opinions for collection system improvements include costs for engineering, SWPPPs, traffic control, construction, contractor mobilization, construction management, pipeline cleaning (CIPP only), lateral cutting, and a 20% contingency.

Alternative 1 - Do Nothing

This alternative leaves the existing collection system as is, with no improvements being made to the pipelines, manholes, or other collection system infrastructure. Infiltration problems will continue with this alternative, which extend higher operations costs, poor treatment facility performance, and noncompliance with the discharge permit. This alternative is viable for local deficiencies (cracked pipelines with no infiltration) not requiring immediate attention or those that do not involve significant infiltration.

Manholes

Alternative 1 - Locate and Open Manholes

There are approximately 44 manholes in the collection system that either cannot be located or cannot be opened. The sewers connecting to these manholes cannot be located. This impedes the District's ability to maintain the manholes and the pipelines, and also inhibits the ability to evaluate the collection system or implement improvements. District and consultant forces attempted to locate and open the District's manholes with some success. However the remaining manholes need to be located and opened.

Estimated Cost per Manhole = $200

Alternative 2 - Replace Manhole

Significantly deteriorated manholes would be replaced with a 5' pre-cast reinforced concrete manhole. The existing manhole would be removed and the new manhole placed in the same location at the same depth. It is likely that groundwater would be encountered at a very shallow depth, especially in the southern areas of the system. The collection system would need to remain in place during the replacement process, requiring bypass pumping.

Estimated Cost per Manhole (7-10 feet deep, 5' diameter) = $9,000

Alternative 3 - Coat Manhole

The grout in numerous brick sewers has deteriorated significantly. Although the manhole appears to remain in sound structural condition, grout deterioration has created voids through which groundwater enters the manhole and collection system. Coating the manhole will reduce infiltration through the manhole and extend its useful life. This application is best in areas with a high groundwater table, as the cost for removing and replacing a manhole in high groundwater areas is high. In addition, when coating the manhole, flows may not need to be bypassed. Impacts to the community during construction would be less under this alternative than when removing and replacing a manhole.

Manhole coating consists of applying an impervious and corrosion resistant grout to fill the voids between the bricks. The grout would be manually applied. The coated manhole will inhibit the groundwater infiltration, improve the manhole's structural condition, and extend its service life. The grout can also be coated with epoxy to further inhibit infiltration and future grout deterioration. This alternative can be used in conjunction with manhole rim replacement/raise alternative.

Estimated Cost per Manhole (7-10 feet deep, 5' diameter) = $7,500

Alternative 4 - Raise Manhole Rim

Several manholes in Niland's collection system could either not be located or opened. Some of these have been paved over, some manholes could not be located, and some could not be opened (no locking device). Of the manholes that could not be located, it is believed that they are buried under a foot or less of pavement or earth. With this alternative, the manholes will be exposed and their rims raised to be flush with the street surface or slightly higher than the unpaved surface. This alternative can be used in conjunction with the manhole coating and manhole locating alternatives.

Estimated Cost per Manhole = $1,500

Alternative 5 - Replace Manhole Ring

During the collection system investigation, attempts to open some of the manholes resulted in breaking some of the manhole rings and concrete support. These need to be replaced. This can be a hazard for vehicles and can contribute to debris entering the collection system.

Estimated Cost per Manhole = $1,200

Alternative 6 - Concrete Plug and Abandon Upstream

There are areas of the collection system where sewers exist, with no customers upstream. It is likely that these pipelines were initially placed beneath the railroad tracks in anticipation of growth on the opposite side of the tracks. This would have facilitated a future connection. As there are no customers contributing flow upstream of these manholes, the manhole inlets should be concrete plugged to eliminate infiltration in upstream sewers, while not jeopardizing possible future connections for development on the other side of the railroad tracks.

Estimated Cost per Manhole = $1,000

Pipelines

Alternative 1 - Cured in Place Pipeline Rehabilitation

Cured in place pipe rehabilitation consists of inserting a flexible fabric liner coated with a thermosetting resin into the existing sewer. The fabric liner is usually inserted through a manhole, and holds the resin in place against the pipe to be cured. The resin material bonds with the existing pipe to form a tight seal. The two most common methods for inserting the fabric are pulling it with a cable and winch, and inversion (turning the tube inside out) of the fabric using pressured air or water. Once the fabric is in place, heat is circulated through the formed tube to cure (harden) the resin.

The surface provided by the new liner usually reduces wall friction and can yield a small increase in the pipe's capacity. The smoother, new surface can reduce future solids deposits and grease accumulation in the pipeline. This rehabilitation takes place from manhole to manhole.

Estimated Cost per Linear Foot – 8" Pipeline = $65

Estimated Cost per Linear Foot – 10" Pipeline = $73

Alternative 2 - Replace Pipeline

In some locations, the gravity sewers have significant cracks and failures in localized conditions. Under these conditions, replacing the sewer is the best alternative. These replacements would include a few sewer segments, significantly reducing the length of the improvement when compared to rehabilitating the pipe with cured in place pipe. Although this alternative has a higher unit cost, the shorter length of the improvement reduces the total cost to improve very localized pipeline failures. With this alternative, the pipelines would be replaced with PVC pipeline of the same diameter at the same grade.

Estimated Cost per Linear Foot – 8" = $75

Estimated Cost per Linear Foot – 10" = $90

Alternative 3 - Cut laterals flush with gravity pipeline

In multiple locations in the gravity collection system, service laterals protrude into the gravity sewers. This impeded the television inspection of the collection system, but may also encourage debris accumulation and blockages in the pipeline. These laterals will need to be cut flush with the gravity sewer in order for the cured in place pipe to be installed. This alternative can be implemented in conjunction with the replacement at the improvement locations at no net additional cost. An additional cost is involved with the cured in place pipe improvement.

Estimated Cost per Lateral = $500

because it requires a shorter length of sewer improvements, although it has a higher cost per linear foot than cured in place pipe, resulting in a lower total project cost. The areas recommended for pipeline replacement include sewer segments north of First Street, north of E. Main Street, and north of Sixth Street. Refer to Exhibit 3.

The "Do Nothing" alternative was selected for areas of the collection system without cracks or with only minor cracks in the sewer, where infiltration was either not present or visible. The District, as part of its operations and maintenance plan, should inspect these areas periodically as described in the operations and maintenance section of this report.

SECTION 6 – SUMMARY OF PREFERRED ALTERNATIVES

Tables 2 and 3 show the summary of proposed improvements to the wastewater collection system. These improvements address deficiencies in the collection system identified during the 2005 investigation. Refer to Exhibit 3 for a schematic of the improvements. These improvements do not include any necessary improvements to the pump station or wastewater treatment facility. Those improvements can be found in the primary Preliminary Engineering Report.

Some portions of the collection system could not be investigated due to the inability to locate or open manholes. As a result, it is likely that there are areas of the collection system where significant infiltration is taking place, but have not been identified. Improvements to these areas have not been identified or estimated.

Table 2 – Summary Collection System Capital Improvements - Pipelines

Replace 8" Pipeline with 8" PVC				
Location	Unit	Cost Per Unit	Number of Units	Total Cost
North of 1st Street	LF	$ 75	30	$ 2,250
North of E. Main Street	LF	$ 75	100	$ 7,500
North of Sixth Street	LF	$ 75	30	$ 2,250
Subtotal				$ 12,000

Rehabilitate 8" Pipe with Cured In Place Pipe				
Location	Unit	Cost Per Unit	No. of Units	Total Cost
North of 3rd Street	LF	$ 65	700	$ 45,500
North of 4th Street	LF	$ 65	1,400	$ 91,000
West of Luxor Avenue	LF	$ 65	300	$ 19,500
North of E. Noffsinger	LF	$ 65	2,400	$ 156,000
East of International	LF	$ 65	400	$ 26,000
Subtotal				$ 338,000

Clean and Televise Collection System - Areas Not Previously Accessible				
Location	Unit	Cost Per Unit	No. of Units	Total Cost
Clean - See Figure 1	LF	$ 1.00	16,000	$ 16,000
Televise and Evaluate- See Figure 1	LF	$ 2.00	16,000	$ 32,000
Subtotal				$ 48,000

Table 3 - Summary Collection System Capital Improvements - Manholes

Open/Locate Manhole				
Location	Unit	Cost Per Unit	No. of Units	Total Cost
See Figure 3	EA	$ 250	44	$ 11,000
Subtotal				**$ 11,000**

Raise Manhole to Street in Paved Area				
Location	Unit	Cost Per Unit	No. of Units	Total Cost
See Figure 3	EA	$ 1,500	19	$ 28,500
Subtotal				**$ 28,500**

Coat Manhole				
Location	Unit	Cost Per Unit	No. of Units	Total Cost
See Figure 3	EA	$ 7,500	14	$ 105,000
Subtotal				**$ 105,000**

Repair Manhole Ring/Cover				
Location	Unit	Cost Per Unit	No. of Units	Total Cost
North of 1st Street - MH 12	EA	$ 1,200	1	$ 1,200
North of 3rd Street - MH 29, 30	EA	$ 1,200	2	$ 2,400
North of 5th Street - MH 59	EA	$ 1,200	1	$ 1,200
E. Noffsinger/Memphis - MH 76	EA	$ 1,200	1	$ 1,200
E. Noffsinger/Highway 111 - MH 96	EA	$ 1,200	1	$ 1,200
Subtotal				**$ 7,200**

Concrete Plug Manhole				
Location	Unit	Cost Per Unit	No. of Units	Total Cost
North of 1st Street - MH 9	EA	$ 1,000	1	$ 1,000
Main Street - MH 25	EA	$ 1,000	1	$ 1,000
Subtotal				**$ 2,000**

Total Collection System Improvement Cost (Manholes and Pipelines) **$ 551,700**
Excludes improvements to pipelines that were not accessible during investigation

SECTION 7 - PHASING

The improvements described in the previous section have been broken into three phases. The main focus of the improvements is to reduce infiltration into the collection system. This can be accomplished by making improvements to the known deficiencies and identifying deficiencies in areas that have not been analyzed. The secondary focus of the improvements is to improve the manholes to create a safer environment for community, facilitate system operations and maintenance, and extend the service life of the manholes. Refer to Exhibit 4 for a schematic of the proposed collection system improvements by phase.

Phase 1 Improvements

The total preliminary cost opinion for the recommended Phase 1 improvements is $481,400 ($2005). A breakdown of these costs follows.

Pipeline Replacement – Total Cost = $12,000

Three pipeline sections will be replaced with PVC gravity sewer.

Replace 8" Pipeline with 8" PVC				
Location	Unit	Cost Per Unit	Number of Units	Total Cost
North of 1st Street	LF	$ 75	30	$ 2,250
North of E. Main Street	LF	$ 75	100	$ 7,500
North of Sixth Street	LF	$ 75	30	$ 2,250
Subtotal				$ 12,000

Cured In Place Pipeline Rehabilitation – Total Cost = $338,000

Eight pipeline sections (manhole to manhole) along six streets should be lined with a cured in place pipeline.

Rehabilitate 8" Pipe with Cured In Place Pipe				
Location	Unit	Cost Per Unit	No. of Units	Total Cost
North of 3rd Street	LF	$ 65	700	$ 45,500
North of 4th Street	LF	$ 65	1400	$ 91,000
West of Luxor Avenue	LF	$ 65	300	$ 19,500
North of E. Noffsinger	LF	$ 65	2400	$ 156,000
East of International	LF	$ 65	400	$ 26,000
Subtotal				$ 338,000

Open and Locate Manholes – Total Cost = $6,000

24 manholes should be located and or opened to allow future inspection and cleaning of those manholes and their adjacent pipelines. Refer to Exhibit 4 for a list.

Raise Manholes – Total Cost = $9,000

6 manholes should be raised so that their covers are flush with the pavement or dirt road. Refer to Exhibit 4 for a list.

Coat Manholes – Total Cost = $105,000

14 brick manholes should be coated with to reduce infiltration and extend their service life.

Repair Manhole Ring/Cover – Total Cost = $2,400

2 manholes need repairs to their manhole rings. These were broken as laborers attempted to open the manholes for inspection and cleaning.

Plug and Abandon Manhole – Total Cost = $2,000

The pipelines upstream of two manholes near the railroad tracks (MHs #9 and #25) should be concrete plugged.

Agency Review = $7,000

The plans and specifications for the proposed improvements will need to be reviewed by local agencies, principally the County of Imperial.

Phase 2 Improvements

The total preliminary cost opinion for the recommended Phase 2 improvements is $59,800 ($2005). A breakdown of these costs follows. During this phase, additional manholes will be opened to permit additional system inspection and maintenance. These sections are generally located between the Township and the wastewater treatment plant, and in the southern portion of the City. Infiltration is suspected of being significant because of the locally high groundwater table, especially near IID canals and drains. Following the opening of the manholes, those sections of the collection system should be cleaned, televised, and evaluated. The cost for this phase does not include design or construction of manhole or pipeline improvements in areas of the collection system that have not been investigated. Televising and inspection of the collection system should become a regular part of the District operations and maintenance program.

Open and Locate Manholes - Total Cost = $4,000

16 manholes should be located and or opened to allow future inspection and cleaning of those manholes and their adjacent pipelines. Refer to Exhibit 4 for a list.

Raise Manhole Rims – Total Cost = $21,000

14 manholes should be raised so that their covers are flush with the pavement or dirt road. Refer to Exhibit 4 for a list.

Repair Manhole Ring/Cover – Total Cost = $4,800

4 manholes need repairs to their manhole rings. These were broken as laborers attempted to open the manholes for inspection and cleaning.

Clean and Televise Collection System – Total Cost = $24,000

It is estimated that approximately 8,000 linear feet of pipeline could be inspected and analyzed following the opening of manholes in Phase 1. Refer to Exhibit 4 for a list.

Agency Review = $5,000

The plans and specifications for the proposed improvements will need to be reviewed by local agencies, principally the County of Imperial. Much of this fee would cover improvements to the collection system that have not yet been identified.

Phase 3 Improvements

The total preliminary cost opinion for the recommended Phase 3 improvements is $36,000 ($2005). A breakdown of these costs follows. During this phase, additional manholes will be opened to permit additional system inspection and maintenance. These sections are generally located in the northern portion of the City where infiltration is not anticipated to be significant. Following the opening of the manholes, those sections of the collection system should be cleaned, televised, and evaluated. The cost for this phase does not include design or construction of manhole or pipeline improvements in areas of the collection system that have not been investigated. Televising and inspection of the collection system should become a regular part of the District operations and maintenance program.

Locate and Open Manholes – Total Cost = $1,000

5 manholes should be located and or opened to allow future inspection and cleaning of those manholes and their adjacent pipelines. Refer to Exhibit 4 for a list.

Raise Manholes – Total Cost = $6,000

4 manholes should be raised so that their covers are flush with the pavement or dirt road. Refer to Exhibit 4 for a list.

Clean and Televise Collection System – Total Cost = $24,000

It is estimated that approximately 8,000 linear feet of pipeline could be inspected and analyzed following the opening of manholes in previous phases. Refer to Exhibit 4 for a list.

Agency Review = $5,000

The plans and specifications for the proposed improvements will need to be reviewed by local agencies, principally the County of Imperial. Much of this fee would cover improvements to the collection system that have not yet been identified.

SECTION 8 - OPERATIONS AND MAINTENANCE COSTS FOR COLLECTION SYSTEM

Over the last few decades, the collection system has not been properly maintained. This has resulted in substantial infiltration, negatively impacting the treatment facility. The lack of maintenance has also inhibited the District's ability to identify needed capital improvements. Poor maintenance caused numerous manholes to be inaccessible, blocking access to pipelines for inspection or repair. The District has known that infiltration problems exist, but the system was not maintained sufficiently to enable those problems to be identified, let alone addressed. Unless steps are taken, infiltration problems will persist due to the high groundwater table. An operations and maintenance plan needs to be implemented to continually combat infiltration and maintain infrastructure in an operable condition. This analysis excludes the wastewater pump station at the treatment facility.

Following an operations and maintenance plan for the collection system will continually address infiltration, improve the performance of the wastewater treatment facility, keep the collection system accessible and functioning, and reduce the possibility for expensive emergency repairs. The operations and maintenance plan will require additional expenses on an annual basis. The District should undertake the following operations and maintenance activities and schedule shown in Table 3. An annual cost in $2005 is shown for each improvement. Note that not all activities are needed annually. The District should incorporate these operations and maintenance costs into future budgets.

Table 4 - Collection System Operations and Maintenance Plan

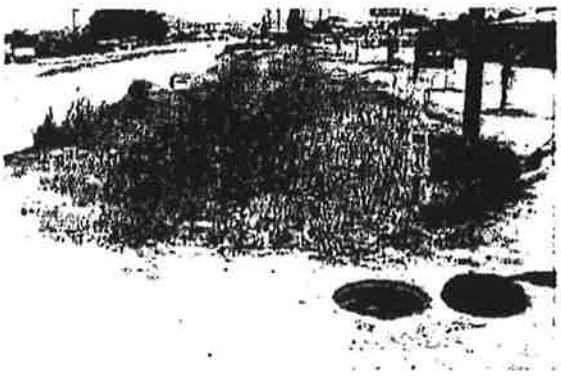
Activity	Frequency	Unit	Cost per Unit ($2005)	Number of Units	Annual Cost ($2005)
Annual System Flushing	1/7 of System Annually	LF	$1	5,000	$5,000
Televising Coll. System	1/7 of System Annually	LF	$1	5,000	$5,000
Raise Manholes for Paving	15 MHs Every 5 Years	EA	$500	15	$7,500
Locate/Expose Manholes	¼ of Unpaved System Annually	EA	$100	15	$1,500
Manhole Replacement (Emergency or Planned)	2 MHs Every 4 Years	EA	$8,000	2	$16,000
Pipeline Replacement (Emergency or Planned)	300 LF Every 4 Years	LF	$85	300	$25,500
Root Cutting, Grease Removal, Minor Repair	Annually	LS	$1,500	1	$1,500

Note: Excludes pump station at wastewater treatment facility

Table 4 shows the projected annual operations and maintenance costs for the collection system through FY2015. Note that some of these costs, specifically manhole and pipeline replacements, can be capitalized. This will reduce the frequency and magnitudes of spikes and dips in yearly operational expenses.

APPENDIX E

NOLTE 2006 WASTEWATER RATE STUDY



Wastewater Rate Study

DRAFT

Prepared for
Niland Sanitary District

Prepared by
Nolte Associates, Inc.

January 2006

NOLTE
BEYOND ENGINEERING

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Introduction

The Niland Sanitary District operates a wastewater collection and treatment facility that serves approximately 400 accounts in the Township of Niland. The collection system includes a lift station and about 6 miles of gravity pipelines. The wastewater treatment facility has a design capacity of 630,000-gallons per day, which discharges into an agricultural drain and eventually to the Salton Sea.

Niland is an unincorporated community located in Imperial County, 30 miles north of El Centro, and approximately 150 miles east of San Diego.

According to the Southern California Association of Governments, the population for the year 2000 was 1,143 habitants[1].

Purpose of Study

The purpose of the Wastewater Rate Study is to determine what changes if any to the current wastewater rates are required to maintain a positive balance in the District's finances and complete necessary improvements to the wastewater system. In 2004, the District completed a Preliminary Engineering Report that identified several deficiencies in the wastewater collection system, the lift station, and the wastewater treatment facility. This study identifies possible financing options for these improvements and determines the impact to the District's budget and future debt service requirements. Also, the current wastewater rates are compared to rates charged by nearby communities in the Imperial Valley area and other Southern California cities and districts. This study does not analyze the existing capacity or impact fees.

It is recommended that this study be updated every two years to reflect modifications to growth trends, Capital Improvements Program, and operational expenses.

Study Assumptions

Several assumptions were made for preparing this study. These assumptions include projections in the operating expenses and the growth in the number of users served by the District.

1. An annual growth of 1% was assumed for the customer base.
2. Interest income on cash reserves will be 2% of July 1 balance.
3. Utility costs will increase 10% annually.

---

[1] Preliminary Engineering Report, *Wastewater Collection and Treatment System*, Niland Sanitary District, CA, CDM.

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Introduction

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---

[1] Preliminary Engineering Report, *Wastewater Collection and Treatment System*, Niland Sanitary District, CA, CDM.

4. Other operating expenditures will increase 8% annually, including personnel costs, supplies and services, equipment, vehicles, and general and administrative costs. Professional Services expenses were assumed to increase 6% annually.
5. Salaries, Employee Retirement/Benefit, and Payroll Taxes will have a one-time increase of $5,000, $1,000, and $1,000, respectively in FY 2007.
6. USDA Loans were assumed at a 4.5% interest rate and 40-year term.
7. Capital Improvements for FY 2006 (collection system) were assumed to be financed 100% through a USDA grant.
8. Capital Improvements for the treatment facility and lift station improvements (FY 2007) were assumed to be 50% financed through USDA grant, and 50% USDA loan.
9. Payments for USDA loans were assumed to begin the year following the loan originating.

In reference to note 1 above, the District has received documentation from developers planning to construct a single family home development west of Highway 111. At the time this study was prepared, the timeline for when, if ever, this development will be constructed is unknown.

Background

The Niland Sanitary District was formed in 1945 to provide wastewater services to the Township of Niland. The District is managed by a Board of Directors with five members who serve four year terms. The District prepares the annual budget for approval by the Board. The budget is then filed with the County's Board of Supervisors.

The District's funds are deposited with the County Treasurer. The District then collects funds from the County to pay for expenses. The County groups the funds with other Districts funds where it is maintained in a pool of investments and deposits. Interest paid on the grouped funds is then distributed proportionately to the Districts.

List of References

The following documents were used as reference for preparing this study:P

1. Preliminary Engineering Report, *Wastewater Collection and Treatment System*, Niland Sanitary District, CA, CDM.
2. Niland Sanitary District, *Financial Report*, June 30, 2004, Hutchinson and Bloodgood LLP.
3. Niland Sanitary District, *Collection System Investigation*, June 2005, Nolte Associates, Inc.

Approved Wastewater Rates and Fees

The Board of Directors has approved wastewater rates through the year 2007. The rates are shown in Table 1 below. The District charges a flat fee to each customer class independent of water consumption. Water services are provided by the American States Water Company.

Table 1. Approved Monthly Wastewater Rates

Section	Customer Class	July 2004	July 2005	July 2006	July 2007
212.1	House/Mobile Home	$21.45	$24.45	$26.45	$28.45
212.2	Motel Per Unit	$13.77	$16.77	$18.77	$20.77
212.3	Court Per Dwelling	$16.90	$19.90	$21.90	$23.90
212.4	Trailer Park Per Space	$14.82	$17.82	$19.82	$21.82
212.5	Office/Small Business, Recreation Building	$20.27	$23.27	$25.27	$27.27
212.6	Bars, Cafes, Service Stations, Markets, Large Day Cares	$40.85	$43.85	$45.85	$47.85
212.7	Specified Business, Packing Shed, Garages, Churches, Small Day Care	$35.32	$38.32	$40.32	$42.32
212.8	School Per Student & Personnel	$1.52	$1.73	$1.87	$2.01
212.9	**Out Of District**				
212.9.1	Triple Fees On Houses & Mobile Homes	$64.35	$72.35	$79.35	$85.35

The District charges a capacity fee to new users that connect to the wastewater system. Table 2 presents the approved capacity fees.

Table 2. Existing Capacity Fees

Section	Customer Class	July 2004
212.1	Hook-Up Fees	
212.10.1	Within The District	$1,800.00
212.10.2	Rv Trailers In Park Less Than 400 Square Feet	$195.00
212.10.3	New Hook-Up Outside The District	$5,400.00
	Inspection Fees Per Inspection	$50.00

Operating Expenses

Operating expenses for FY 2005 were budgeted at $207,540, excluding debt payments[2]. Based on the FY 2005 budget, operating expenses were projected through FY 2010, as shown in Table 3. As described above, operating costs will increase 8% annually, except for utilities which will increase 10% annually. Additional expenses for professional services and replacement of short lived assets were included in FY 2006 through FY 2010.

Operating Revenue

Projected operating revenues were determined assuming a 1% growth and the approved wastewater rates through FY 2007. Projections show that the District would maintain a positive Operating Income through FY 2008, without considering existing Debt Service or Small Capital Expenditures.

The fund balance declines slightly with the approved rate increases through FY 2007. However, from FY 2009 through FY 2010 it is projected that the District will have operating losses that will reduce the fund balance to a negative by FY 2009, assuming FY 2007 rates remain unchanged. In addition, the existing income/debt service ratio will be reduced to less than 1.2. These projections do not account for any new debt service required to fund improvements to the wastewater system in the next 5 years.

[2] Niland Sanitary District, *Financial Report*, June 30, 2004, Hutchinson and Bloodgood LLP

Table 3. Projected Budget with Existing Approved Rates

Fiscal Year	2005	2006	2007	2008	2009	2010
Operating Revenues						
Treatment Charges	$ 233,284	$ 255,421	$ 277,977	$ 280,757	$ 283,564	$ 286,400
Connection Fees		14,706	14,853	15,002	15,152	15,303
Interest	1,100	1,432	1,398	1,273	760	(183)
Other						
Total Operating Revenues	234,384	271,558	294,228	297,031	299,476	301,520
Operating Expenses						
Salaries	45,000	48,600	57,488	62,087	67,054	72,418
Employee Retirement/Benefit	12,000	12,960	14,997	16,197	17,492	18,892
Payroll Taxes	16,000	17,280	19,662	21,235	22,934	24,769
Property and Liability Insurance	5,000	5,400	5,832	6,299	6,802	7,347
Facility Oper. and Maint.						
Facility Operation	20,000	21,600	23,328	25,194	27,210	31,291
Chemicals	25,000	27,500	30,250	33,275	36,603	42,093
Fuel	5,000	5,500	6,050	6,655	7,321	8,419
Site Upkeep/Maintenance	10,000	11,000	12,100	13,310	14,641	16,837
Utilities	30,000	33,000	36,300	39,930	43,923	48,315
Budget Transfers	4,620	-	-	-	-	-
Equipment	33,330	-	-	-	-	-
Prof. Services (Annual Audit)	-	10,000	10,600	11,236	11,910	12,625
Professional Services (Eng.)	-	10,000	10,600	11,236	11,910	12,625
Professional Services (Legal)	-	4,000	4,240	4,494	4,764	5,050
Short Lived Assets						
1-5 Years	-	2,000	2,160	2,333	2,519	2,721
6-10 Years	-	5,000	5,400	5,832	6,299	6,802
11-15 Years	-	3,500	3,780	4,082	4,409	4,762
Collection System O&M	1,590	13,000	13,780	14,607	15,483	16,412
Total Operating Expenses	$ 207,540	$ 230,340	$ 256,567	$ 278,002	$ 301,274	$ 331,378
Operating Income (Loss)	26,844	41,218	37,661	19,029	(1,798)	(29,857)
Small Capital Expenditures		10,000	10,800	11,664	12,597	13,605
Existing Debt Service						
1993 Series	33,305	32,885	33,150	32,993	32,756	32,483
Existing Debt Service Total	33,305	32,885	33,150	32,993	32,756	32,483
Net Debt Service	33,305	32,885	33,150	32,993	32,756	32,483
Oper. Income/Net Debt Service	0.81	1.25	1.14	0.58	-0.05	-0.92
Fund Balance - July 1	$ 78,048	$ 71,587	$ 69,920	$ 63,632	$ 38,003	$ (9,148)
Fund Balance - June 30	$ 71,587	$ 69,920	$ 63,632	$ 38,003	$ (9,148)	$ (85,093)

Personnel Additions

No personnel additions are anticipated in the near future. The budgeted capital improvements are to replace existing infrastructure and not to expand the wastewater system. Therefore, no additional personnel should be necessary.

Existing Debt Service

The District issued $545,100 in revenue bonds in 1993, with an interest rate of 5.25%. The bonds are to be paid off in 40 years, and were purchased by the Farmers Home Administration. The existing debt service schedule through 2033 is shown in Table 4.

Table 4. Existing Debt Service Schedule

Fiscal Year	1993 Series
2005	$ 33,305
2006	$ 32,885
2007	$ 33,160
2008	$ 32,993
2009	$ 32,756
2010-2014	$ 162,413
2015-2019	$ 162,190
2020-2024	$ 163,225
2025-2029	$ 157,914
2030-2033	$ 124,128

Capital Improvements

The District has identified capital improvements required to maintain the wastewater system in good operating condition. Several improvements to the collection system and wastewater treatment facility are required in the next 4 years. The proposed improvements and the year of implementation are shown in Table 5. The estimated cost for each improvement was determined in 2006 dollars. The estimate was increased 10% annually to the year of implementation to account for inflation and recent trends in the price of construction materials and labor.

Table 5 also shows anticipated grants to be received by the District for improvements to the collection system and wastewater treatment facility. Grants are shown as a separate line item and the estimated engineering and construction costs were reduced to determine the net capital expenditure each year.

Projected improvements for FY 2007 total $669,900 assuming the District receives 50% USDA grant funds for the Wastewater Treatment Facility and Lift Station improvements. USDA may finance the

FY 2007 improvements entirely by grant, however a more conservative approach was assumed in this study.

The proposed year of implementation of each of the capital improvements was determined with input from District personnel.

Table 5. Proposed Capital Improvement Schedule

Wastewater System Project	2006 Estimated Price	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010
Collection System						
Engineering	$80,000	$80,000				
Construction	$800,000	$800,000				
USDA Grant	($800,000)	($800,000)				
County Grant	($80,000)	($80,000)				
Sludge Removal						
Construction	$48,000		$52,800			
Sewer Lines/Manholes Maintenance						
Pipe and Manhole Replacement	$41,000		$45,100			
Raising Manholes for Paving	$7,500				$9,983	
Disinfection System	$40,000		$44,000			
Lift Station						
Construction	$392,000		$431,200			
USDA Grant (50%)	($196,000)		($215,600)			
Treatment Plant Improvements						
Construction	$568,000		$624,800			
USDA Grant (50%)	($284,000)		($312,400)			
Bridge Replacement						
Construction	$137,500				$183,013	
Potable Water Line						
Construction	$181,000			$219,010		
Rate Study						
Study	$15,000	$15,000				
County Grant	($15,000)	($15,000)				
USDA Application						
Application	$5,000	$5,000				
County Grant	($5,000)	($5,000)				
Total Estimated Cost	**$935,000**	**$0**	**$669,900**	**$219,010**	**$192,995**	**$0**

Capital Improvements Financing

As shown in Table 5, the District anticipates capital improvements for Fiscal Years 2007, 2008, and 2009. It is assumed that these improvements will be financed through USDA loans. Capital funding requirements for these three years total $1,082,000. Table 6 presents the estimated annual debt service requirements through FY 2010 assuming a 4.5% interest rate and a 40 year term. Annual payments are assumed to begin the year following loan closing.

Table 6. Proposed New Debt Schedule

	Loan Amount	2007	2008	2009	2010
2007 USDA Loan	$669,900	-	$36,404	$36,404	$36,404
2007 USDA Loan	$219,010	-	-	$11,902	$11,902
2007 USDA Loan	$192,995	-	-	-	$10,488
Total		-	$36,404	$48,306	$58,794

Development and Recommendation of Rate Changes

This section outlines recommendations for adjusting wastewater rates to meet projected expenses and debt requirements through the year 2010. Rates increases were minimized to reduce the impacts to customers.

Wastewater rate modifications have been approved through FY 2007 (see Table 1). Required rate modifications were determined for FY 2007 through FY 2010. Rates were increased to maintain the cash fund balance every year after 2006 and an income to debt service ration of 1.15. Table 7 shows the proposed rates: FY 2007, a 3% increase above the approved rate; FY 2008 a 19 % increase is required to maintain the cash fund balance from FY 2007 approximately $71,000. A rate increase of 9% and 10% is required for FY 2009 and 2010 respectively.

The proposed wastewater rates assume the capacity fees will remain at $1,800 per connection. In the future, if significant growth is expected from a subdivision connecting to the sewer system requiring expansion of the collection lines or treatment facility, the capacity fee should be analyzed and possibly increased to cover those costs. Capacity fees were not analyzed as part of this study.

The proposed rate increases are anticipated to generate sufficient revenue to cover projected expenses and debt requirements. As mentioned above, projected improvements part of the CIP will be partly funded by USDA Loans and Grants. The loan portion will be covered by the District's revenue from user charges. If significant growth occurs within the District, the District should reexamine the

projected operating revenue and expenses. Growth projections are one of the most important factors in budget projections.

Table 7. Recommended Monthly Wastewater Rates

	2007	2008	2009	2010
House/Mobile Home	$ 29.30	$ 34.87	$ 38.01	$ 41.81
Motel Per Unit	$ 21.39	$ 25.45	$ 27.74	$ 30.52
Court Per Dwelling	$ 24.62	$ 29.29	$ 31.93	$ 35.12
Trailer Park Per Space	$ 22.47	$ 26.74	$ 29.15	$ 32.07
Office/Small Business, Recreation Building	$ 28.08	$ 33.42	$ 36.43	$ 40.07
Bars, Cafes, Service Stations, Markets, Large Day Cares	$ 49.28	$ 58.64	$ 63.92	$ 70.31
Specified Business, Packing Shed, Garages, Churches, Small Day Care	$ 43.59	$ 51.87	$ 56.54	$ 62.20
School Per Student & Personnel	$ 2.07	$ 2.46	$ 2.69	$ 2.95
Out Of District				
Triple Fees On Houses & Mobile Homes	$ 87.91	$ 104.61	$ 114.03	$ 125.43

User Rate Comparison

Approved wastewater rates were compared to rates charged by nearby communities and Districts. The rates are summarized in Table 8 and a comparison chart shown in Figure 1. The Niland Sanitary District wastewater rates for FY 2005 are lower than most communities in the Imperial Valley. Typically, small communities require higher wastewater rates than larger communities to generate sufficient revenue to cover operation and maintenance costs, and rehabilitation of facilities.

Table 8. Wastewater User Rate Comparison

Community	Monthly Sewer Bill
Yuma	$ 17.36
San Bernardino Municipal WD	$ 17.95
Vallecitos WD	$ 18.65
Coachella Valley WD	$ 19.40
Niland Sanitary District	$ 24.45
Heber	$ 27.85
Brawley**	$ 27.94
Seeley Co. WD	$ 28.00
Imperial	$ 28.65
Westmorland*	$ 31.85
Holtville	$ 32.62
El Centro (Existing FY2005)	$ 33.00

Values based on 20,000 gallon water usage for a single family home

*Based on inside city limit rate
**Based on front footage less than 50 feet

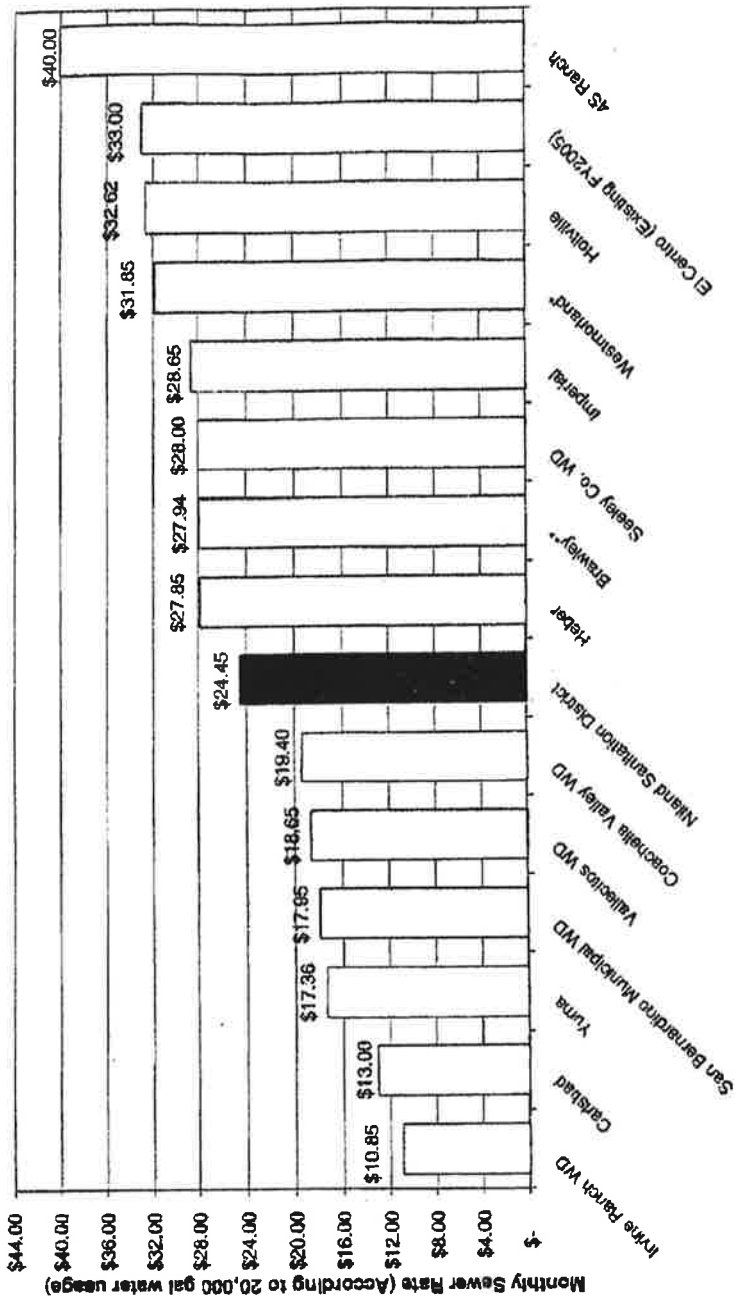

Figure 1. Wastewater Rate Comparison

Information on wastewater capacity fees for nearby communities was also collected for informational purposes only. Capacity fees for 13 communities are presented in Table 9, and a comparison chart shown in Figure 2. Niland capacity fees are below the median of the surveyed communities.

Table 9. Wastewater Capacity Fee Comparison

Community	Capacity Fee
Seeley Co. WD	$ 1,400
Westmorland*	$ 1,500
Imperial	$ 1,639
Niland Sanitary District	**$ 1,800**
Yuma	$ 2,594
Brawley**	$ 2,794
Coachella	$ 2,991
Heber	$ 3,500
San Bernardino Municipal WD	$ 3,500
El Centro	$ 4,200
Holtville	$ 5,007

*Based on inside city limit rate

**Based on front footage less than 50 feet

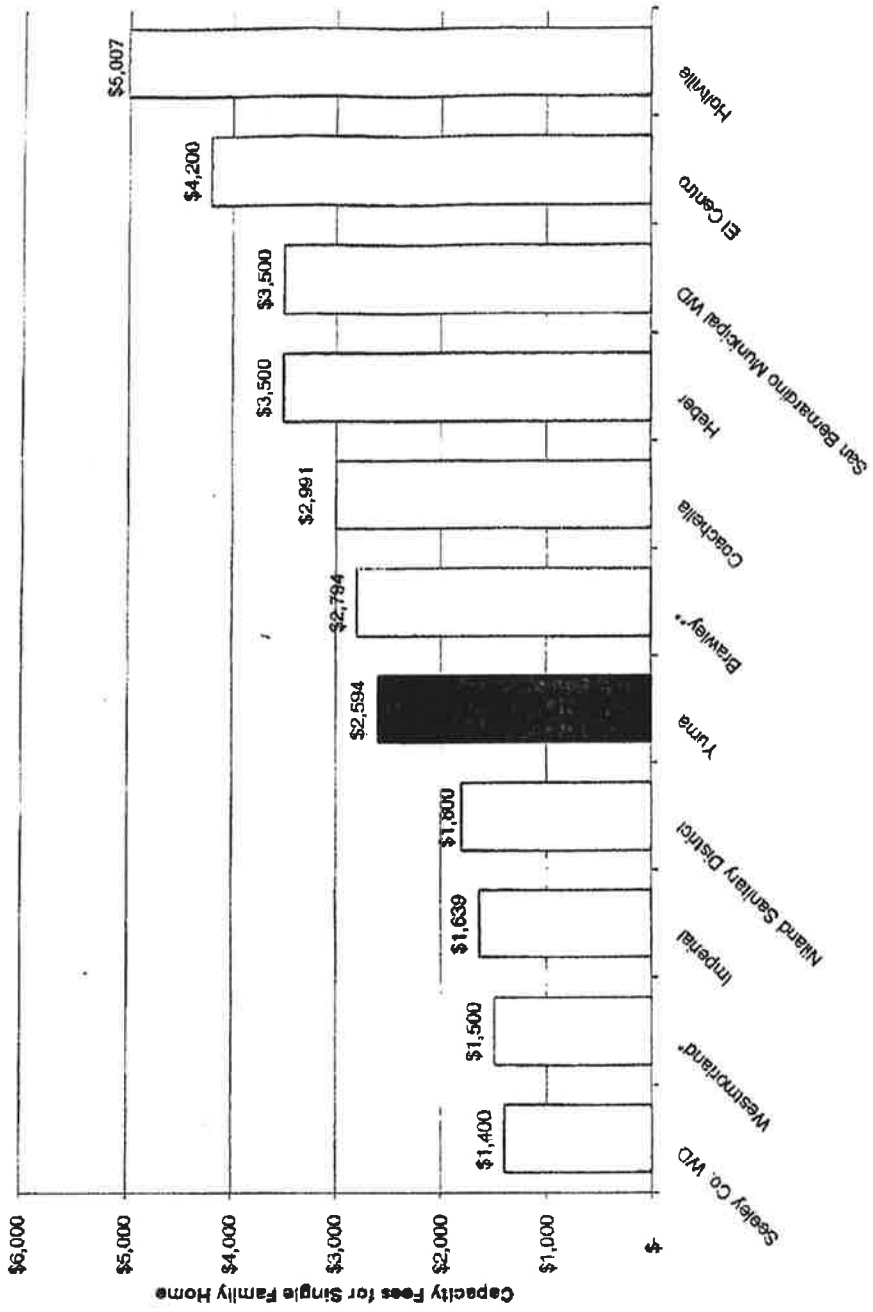

Figure 2. Wastewater Capacity Fee Comparison

Projected Operation and Revenue Budget

A projected Operation and Revenue budget was prepared for FY 2006 through FY 2010. This budget considers the approved and proposed wastewater rates, new debt service, and projected expenses and revenues. The results are shown on Table 10.

As mentioned above, wastewater rates were increased to maintain the cash fund balance at approximately $71,000 through FY 2010 and an operating income to debt service ratio of 1.15. If significant customer growth should occur, the District should consider increasing its cash reserve.

Table 10. Projected Operating Budget with Proposed Wastewater Rates

Fiscal Year	2005	2006	2007	2008	2009	2010
Operating Revenues						
Treatment Charges	$ 233,284	$ 255,421	$286,316	$344,124	$378,846	$420,898
Connection Fees		14,706	14,853	15,002	15,152	15,303
Interest	1,100	716	692	705	713	711
Other						
Total Operating Revenues	234,384	270,843	301,861	359,831	394,710	436,912
Operating Expenses						
Salaries	45,000	48,600	57,488	62,087	67,054	72,418
Employee Retirement/Benefit	12,000	12,960	14,997	16,197	17,492	18,892
Payroll Taxes	16,000	17,280	19,662	21,235	22,934	24,769
Property and Liability Insurance	5,000	5,400	5,832	6,299	6,802	7,347
Facility Oper. and Maint.						
Facility Operation	20,000	21,600	23,328	25,194	27,210	31,291
Chemicals	25,000	27,500	30,250	33,275	36,603	42,093
Fuel	5,000	5,500	6,050	6,655	7,321	8,419
Site Upkeep/Maintenance	10,000	11,000	12,100	13,310	14,641	16,837
Utilities	30,000	33,000	36,300	39,930	43,923	48,315
Budget Transfers	4,620	-	-	-	-	-
Equipment	33,330	-	-	-	-	-
Prof. Services (Annual Audit)	-	10,000	10,600	11,236	11,910	12,625
Professional Services (Eng.)	-	10,000	10,600	11,236	11,910	12,625
Professional Services (Legal)	-	4,000	4,240	4,494	4,764	5,050
Short Lived Assets						
1-5 Years	-	2,000	2,160	2,333	2,519	2,721
6-10 Years	-	5,000	5,400	5,832	6,299	6,802
11-15 Years	-	3,500	3,780	4,082	4,409	4,762
Collection System O&M	1,590	13,000	13,780	14,607	15,483	16,412
Total Operating Expenses	$ 207,540	$ 230,340	$ 256,567	$ 278,002	$ 301,274	$ 331,378
Operating Income (Loss)	26,844	40,503	45,294	81,829	93,436	105,534
Small Capital Expenditures		10,000	10,600	11,664	12,597	13,605
New Debt Service						
FY 2007 USDA Loan				$36,404	$36,404	$36,404
FY 2008 USDA Loan					$11,902	$11,902
FY 2009 USDA Loan						$10,488
New Debt Service Total	-	-	-	$36,404	$48,306	$58,794
Existing Debt Service						
1993 Series	33,305	32,885	33,150	32,993	32,756	32,483
Existing Debt Service Total	33,305	32,885	33,150	32,993	32,756	32,483
Net Debt Service	33,305	32,885	33,150	69,397	81,062	91,277
Operating Income/Net Debt Service	0.81	1.23	1.37	1.18	1.15	1.16
Fund Balance - July 1	$ 78,048	$ 71,587	$ 69,204	$ 70,549	$ 71,316	$ 71,092
Fund Balance - June 30	$ 71,587	$ 69,204	$ 70,549	$ 71,316	$ 71,092	$ 71,745

Depreciation

Depreciation expenses were calculated on the proposed improvements. Straight line depreciation was used based on the service life and estimated price the implementation year. Table 10 summarizes the depreciation expense for each of the improvements through FY 2010.

Table 11. Depreciation Expense for Proposed Improvements

Wastewater System Project	2006 Estimated Price	Service Life	FY 2006	FY 2007	FY 2008	FY 2009
Collection System	$880,000	50 years				
Depreciation			$17,600	$17,600	$17,600	$17,600
Disinfection System	$44,000	20 years				
Depreciation				$2,200	$2,200	$2,200
Lift Station	$431,200	20 years				
Depreciation				$21,560	$21,560	$21,560
Treatment Plant Improvements	$624,800	20 years				
Depreciation				$31,240	$31,240	$31,240
Bridge Replacement	$183,013	50 years				
Depreciation						$3,660
Potable Water Line	$219,010	50 years				
Depreciation					$4,380	$4,380

Disclosure Statement

This rate study was prepared with numerous assumptions to determine projections on expenses, revenues, and debt requirements as stated throughout the document. Several factors can impact projected revenue, expenses, and debt, which include interest rate, inflation, utility and permitting costs, future regulations, availability of funding for improvements and growth. This study should be used as a planning tool only. Nolte is not liable for the accuracy of the financial projections presented.

APPENDIX F

SEWER RATES AND BOARD MEMBERS

NILAND SANITARY DISTRICT
P.O. Box 40
NILAND CA 92257

SEWER RATES
Effective July 1, 2005

THE BOARD OF DIRECTORS OF THE NILAND SANITARY DISTRICT ORDAINS AS FOLLOWS. ORDIANCE NUMBER 100 SECTION 212 REVENUE SEWER RATES AMENDED AS FOLLOWS.

		Per Month	Per Year
212.1	HOUSE/MOBILE HOME	$ 24.45	$ 293.40
212.2	MOTEL PER UNIT	$ 16.77	$ 201.20
212.3	COURT PER DWELLING	$ 19.90	$ 238.80
212.4	TRAILER PARK PER SPACE	$ 17.82	$ 213.84
212.5	OFFICE/SMALL BUSINESS RECREATION BUILDING	$ 23.26	$ 279.20
212.6	BARS, CAFES, SERVICE STATIONS MARKETS, LARGE DAY CARES	$ 43.84	$ 526.15
212.7	SPECIFIED BUSINESS, PACKING SHED GARAGES, CHURCHES, SMALL DAY CARE	$ 38.32	$ 459.85
212.8	SCHOOL PER STUDENT & PERSONNEL EXAMPLE: 20.76 X 314 STUDENTS=$6,518.64	$ 1.73	$ 20.76
212.9	**OUT OF DISTRICT**		
	ALL FEES TRIPLE for sections 212.1 through 212.8		
212.10	HOOK-UP FEES		
212.10.1	WITHIN THE DISTRICT		$2,052.00
212.10.2	RV TRAILERS IN PARK LESS THAN 400 SQUARE FEET		$ 222.30
212.10.3	NEW HOOK-UP OUTSIDE THE DISTRICT		$6,156.00
	INSPECTION FEES PER INSPECTION		$ 57.00

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Effective July 1, 2006

THE BOARD OF DIRECTORS OF THE NILAND SANITARY DISTRICT ORDAINS AS FOLLOWS. ORDIANCE NUMBER 100 SECTION 212 REVENUE SEWER RATES AMENDED AS FOLLOWS.

		Per Month	Per Year
212.1	HOUSE/MOBILE HOME	$ 26.45	$ 317.40
212.2	MOTEL PER UNIT	$ 18.77	$ 225.20
212.3	COURT PER DWELLING	$ 21.90	$ 262.80
212.4	TRAILER PARK PER SPACE	$ 19.82	$ 237.84
212.5	OFFICE/SMALL BUSINESS RECREATION BUILDING	$ 25.26	$ 303.20
212.6	BARS, CAFES, SERVICE STATIONS MARKETS, LARGE DAY CARES	$ 45.84	$ 550.15
212.7	SPECIFIED BUSINESS, PACKING SHED GARAGES, CHURCHES, SMALL DAY CARE	$ 40.32	$ 483.85
212.8	SCHOOL PER STUDENT & PERSONNEL EXAMPLE: 20.76 X 314 STUDENTS=$7,046.16	$ 1.87	$ 22.44
212.9	**OUT OF DISTRICT**		
	ALL FEES TRIPLE for sections 212.1 through 212.8		
212.10	HOOK-UP FEES		
212.10.1	WITHIN THE DISTRICT		$2,216.16
212.10.2	RV TRAILERS IN PARK LESS THAN 400 SQUARE FEET		$ 240.00
212.10.3	NEW HOOK-UP OUTSIDE THE DISTRICT		$6,648.50
	INSPECTION FEES PER INSPECTION		$ 61.55

NILAND SANITARY DISTRICT
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NILAND CA 92257

SEWER RATES
Effective July 1, 2007

THE BOARD OF DIRECTORS OF THE NILAND SANITARY DISTRICT ORDAINS AS FOLLOWS. ORDIANCE NUMBER 100 SECTION 212 REVENUE SEWER RATES AMENDED AS FOLLOWS.

		Per Month	Per Year
212.1	HOUSE/MOBILE HOME	$ 28.45	$ 341.40
212.2	MOTEL PER UNIT	$ 20.77	$ 249.20
212.3	COURT PER DWELLING	$ 23.90	$ 286.80
212.4	TRAILER PARK PER SPACE	$ 21.82	$ 261.84
212.5	OFFICE/SMALL BUSINESS RECREATION BUILDING	$ 27.26	$ 327.20
212.6	BARS, CAFES, SERVICE STATIONS MARKETS, LARGE DAY CARES	$ 47.84	$ 574.15
212.7	SPECIFIED BUSINESS, PACKING SHED GARAGES, CHURCHES, SMALL DAY CARE	$ 42.32	$ 507.85
212.8	SCHOOL PER STUDENT & PERSONNEL EXAMPLE: 20.76 X 314 STUDENTS=$7,573.68	$ 2.01	$ 24.12
212.9	**OUT OF DISTRICT**		
	ALL FEES TRIPLE for sections 212.1 through 212.8		
212.10	HOOK-UP FEES		
212.10.1	WITHIN THE DISTRICT		$ 2,382.40
212.10.2	RV TRAILERS IN PARK LESS THAN 400 SQUARE FEET		$ 258.10
212.10.3	NEW HOOK-UP OUTSIDE THE DISTRICT		$7,147.10
	INSPECTION FEES PER INSPECTION		$ 66.20

Niland Sanitation Board Members

Robert Huxley	Term expires in 2007
Mike Alexsick	Term expires in 2009
Betty Raceles	Term expires in 2007
Tom Carumbas	Term expires in 2009
Julius Agulpos	Term expires in 2009

Niland Sanitation District is staffed with one Grade I Wastewater Treatment Plant operator and one Operator-in-Training. There are positions for two Grade two operators as they progress.