DEPARTMENT OF WASTEWATER MANAGEMENT
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET
HONOLULU, HAWAII 96813

FRANK F. FASI
MAYOR

KENNETH M. RAPPOLT
DIRECTOR

FELIX B. LIMTIACO
DEPUTY DIRECTOR

WEP 93-385

August 19, 1993

Mr. Brian J. J. Choy, Director
Office of Environmental Quality Control
220 South King Street, 4th Floor
Honolulu, Hawaii 96813

Dear Mr. Choy:

Subject: Final Environmental Assessment (EA) in Anticipation of a Negative Declaration for the Proposed Septage Handling Facilities at the Sand Island Wastewater Treatment Plant (WWTP)
Honolulu, Hawaii, Tax Map Key: 1-5-41:5

This letter constitutes a notice of determination by this department after the potential impacts of the proposed project have been assessed according to Title 11, Chapter 200, Environmental Impact Statement Rules, and Chapter 343, of the Hawaii Revised Statues relating to Environmental Impact Statements. The determination has been made that an environmental impact statement is not required based on the environmental assessment prepared by our consultants, Parametrix, Inc.

Based on our determination, we are filing a Final EA in anticipation of a Negative Declaration. The department is submitting with this transmittal, four copies of the Final EA and an OEQC publication form for this project.

We are requesting publication in your OEQC Bulletin of September 8, 1993.

Should there be any questions, please have your staff contact Mr. Robert Ishida at 527-5847.

Very truly yours,

for KENNETH M. RAPPOLT
Director

Attachments

137

1993-09-08-OA-FEA-Sand Island Wastewater Treatment Plant Septic Handling Facilities

FILE COPY

Final Environmental Assessment
This Environmental Assessment prepared pursuant
to Chapter 343, Hawaii Revised Statutes (HRS)

For The

Septage Facilities on Oahu

Sand Island WWTP Tributary Area

TMK: 1-5-41: 5
Honolulu, Hawaii

Proposing Agency:
Department of Wastewater Management
City and County of Honolulu
650 S. King Street
Honolulu, HI 96813

Responsible Official: for Kenneth M. Rappolt, Director — Date: 8/18/93

Prepared For:

Department of Wastewater Management
City & County of Honolulu

Prepared By:
Parametrix, Inc.

TABLE OF CONTENTS

LIST OF FIGURES

I. SUMMARY

CHAPTER 343, HRS
ENVIRONMENTAL ASSESSMENT (EA)

Proposing Agency:	Department of Public Works City & County of Honolulu
Action:	Agency
Project Name:	Sand Island Septage Handling Facilities
Project Description:	The Sand Island Waste Water Treatment Plant (WWTP) is being evaluated to determine the potential impacts that septage handling and processing will have on the long range operations of the facility at Sand Island. Also, the corollary objectives include specific evaluation of alternative grease handling methods, assessment of DOH regulations on waste volumes and characteristics, and development of modifications to the septage handling facilities required. Proposed improvements will include the following: Two septage receiving stations which will include a coarse bar screen, a small sump for removing heavy objects, and quick disconnect receiving hose connections; Submersible septage pumps; Grease handling facilities consisting of a heated grease hopper, a duplex pump station and macerators and heated piping from the pump station to the existing sludge holding tanks; Odor control system using modular packaged single stage chemical oxidant odor scrubbing equipment; and Septage flow monitoring and sampling equipment.
Project Location:	Sand Island WWTP, Sand Island, Oahu (See Figure 1)
Tax Map Key:	1-5-41: 5
Area:	29,150 square feet
State Land Use Designation:	Urban

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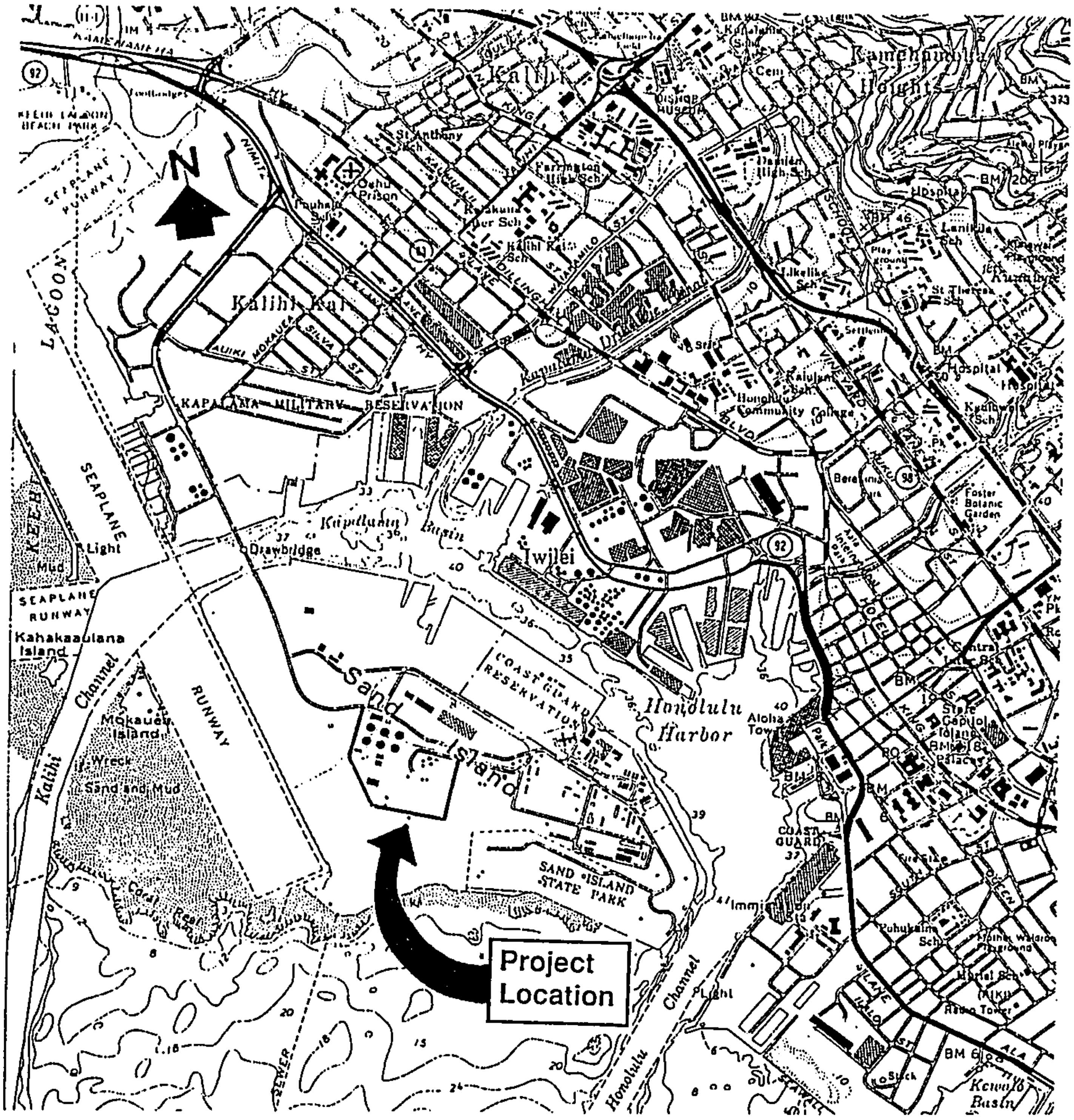


Parametrix, Inc.

Septage Facilities on Oahu, Sand Island

Location Map

PMX 22-2096-03

Figure 1
Page 2

Primary Urban Center Development Plan Land Use Map Designation:	Public Facility
County Zoning Designation:	I-3
Landowner:	City & County of Honolulu
Contact:	F. J. Rodriguez **c/o Parametrix, Inc.** 1164 Bishop Street, Suite 1600 Honolulu, Hawaii 96813 Tel. (808) 524-0594

II. PROJECT DESCRIPTION

A. Technical Characteristics

1. The septage wastes generated within the Honolulu service area are primarily cesspool septage, shipboard waste, chemical toilet waste, and grease trap waste. The Hawaii Kai WWTP which is the only private treatment plant located within the service area, does not have a preloader and is scheduled to expand its solids handling facilities. Therefore no preloader wastes or waste activated sludge from private plants are expected to be discharged to the proposed septage handling facility except during emergency situations at the Hawaii Kai WWTP. Individually, each type of waste exhibits different characteristics; in general, however, the wastes are highly variable, anaerobic, high strength wastes.

2. Septage handling and treatment fall into three general categories: land disposal; independent treatment facilities; and handling at wastewater treatment plants. In a City & County conducted study, *"Septage Facilities on Oahu, Sand Island WWTP Tributary Area, Parametrix, Inc., December, 1992"*, it was concluded that handling septage at the existing WWTP was the most economically cost effective and environmentally sound alternative. With the exception of grease trap waste, the treatment of septage at the existing WWTP is the preferred approach. The physical handling characteristics of grease trap waste place increased operating and maintenance burdens on the existing WWTP facility. This is due almost entirely to the typical characteristics of grease trap waste such as the formation of floating mats of putrescible substances. This leads to a reduction of the plant's treatment capacity, removal efficiency, and contributes to the increased operation and maintenance requirements. A highly concentrated wastewater, septage is traditionally treated by processes used at WWTPs. The treatment of septage however is markedly different from domestic sewage and requires special consideration for proper design of receiving and handling facilities. Considerations in treating septage at the WWTP include:

   a. Ability of the plant to accommodate septage

   b. Addition to liquid and solid waste handling stream

   c. Mode of waste input

   d. Receiving station
      Waste discharge station

   e. Odor Control

3. Septage is a typically high organic strength, high solids content waste. Addition of a highly concentrated waste such as septage in relatively small quantities can substantially increase the organic and solids loading at a WWTP. The volume of septage that can be handled is generally dependent on three major factors:

   a. The volume and nature of the waste flow

   b. Biological oxidation capacity of the plant

   c. Solids handling capacity of the plant

   Because the Sand Island WWTP is a primary treatment facility, the ability to accommodate septage wastes is primarily determined by the volume and nature of the waste flow and the solids handling capacity of the plant. In addition to the high strength of the septage, the manner of receiving the various wastes into the WWTP requires consideration. These wastes are likely to be brought into the facility individually, i.e. a tank load of cesspool waste, a load of chemical toilet or shipboard toilet waste, or a grease trap load of septage. This is typical rather than the blend of the various wastes that comprise septage as defined for this project.

4. There are two methods of handling septage at a WWTP:

   a. Addition to the liquid treatment stream

   b. Addition to the solids handling stream

   In general, septage input into the headworks of a treatment plant is desirable since the majority of the solids can be removed with the primary sludge. This is particularly true at plants with primary clarification. This is the method of septage handling at the SIWWTP.

   At secondary treatment plants without primary sedimentation, addition of septage to the liquid stream can overload biological processes resulting in major process upsets and poor effluent quality. At these secondary treatment plants, addition to the solids handling stream would be desirable.

B. Social and Economic Characteristics

   Septage as a category of liquid waste is considered a high strength contributor to the total liquid waste stream of the City & County of Honolulu. In the metropolitan area of the City, the preponderance of commercial oriented sources of liquid waste are still:

   - commercial toilet waste;

- shipboard bilge and wastewater;
- and grease trap wastes.

Estimated septage quantity generated within the Honolulu service area through the year 2010 and the corresponding mass loading to the Sand Island WWTP were estimated as follows:

Septage Volume:	**971,000 gallons per month**
Biochemical oxygen demand (5 day):	**5500 lbs/month**
Suspended Solids:	**5800 lbs./month**

Cesspool pumpage in metropolitan Honolulu is not as prevalent as it is on the North Shore or the windward side of Oahu, where cesspools are still in active use. The elimination of cesspool wastes are still a goal and objective of both the State Department of Health and also the Division of Wastewater Management, Department of Public Works and City & County of Honolulu. However, there will always be a need for septage handling and processing for chemical toilet use and grease trap pumpage.

C. Septage Characteristics

The total estimated septage flow of 971,000 gallons per month is equivalent to a flow of 0.032 MGD. This septage volume corresponds to approximately 0.04% of the design average daily flow of 82 MGD, and is an order of magnitude lower than the recommended limitation of 0.45 percent of plant design flow. The estimated mass BOD5 and suspended solids loading are also very small compared to the design loading for the WWTP. The plant influent characteristics would essentially remain unchanged by the addition of septage.

Based on the above considerations, controlled/uncontrolled discharge of septage wastes into the Sand Island WWTP is expected to have no significant impact to the performance of the treatment plant. A discharge station would be needed to facilitate waste transfer and to minimize release of odors, but additional pre-treatment of the wastes can be accomplished by the existing facilities at the WWTP. However, with past problems experienced with the handling of grease and other floating materials, special consideration must be given to grease trap wastes and floatable fractions of grease contained in other septage wastes.

III.AFFECTED ENVIRONMENT

A. Geographical Characteristics

1. Topography

The proposed Septage Handling Facility at the Sand Island WWTP is planned for the north-east corner of the plant site. At the present time, the planned expansion will consist of approximately 29,150 square feet of structural improvements. (See Figure 2)

2. Soils

Sand Island is considered as Fill Lands Mixed (FL), "a land type that occurs mostly near Pearl Harbor and in Honolulu, adjacent to the ocean. It consists of areas filled with materials dredged from the ocean or hauled from nearby areas, garbage, and general material from other sources." **USDA/SCS 8/72 Soil Survey of Islands of Kauai, Oahu, Molokai, and Lanai, State of Hawaii.**

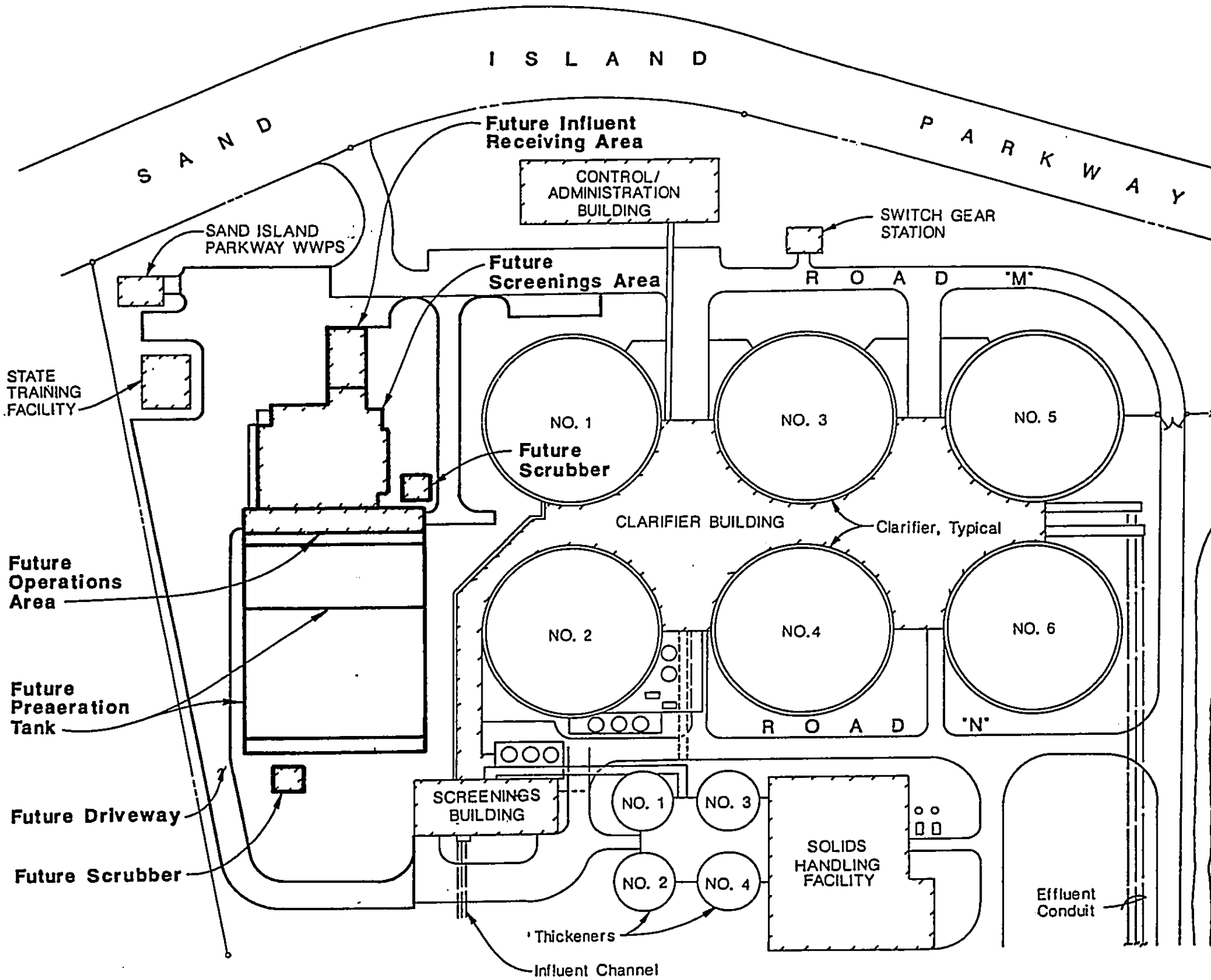
3. Vegetation

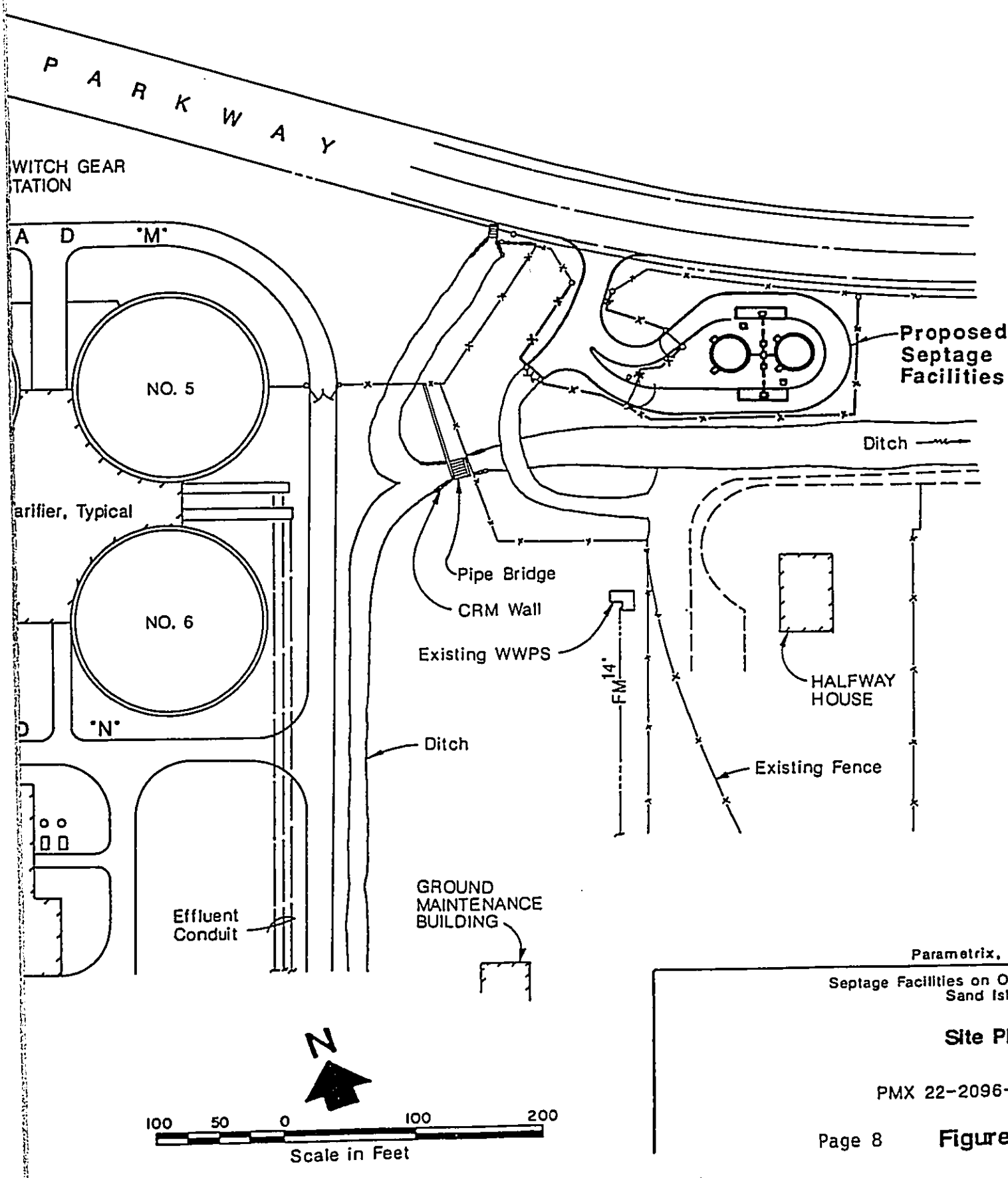
At the proposed location for the septage handling facility improvements, there are no significant varieties of vegetation as the Sand Island WWTP is an existing industrial facility. There are introduced species of plant material on the total parcel, but not at the septage handling facility location.

B. Hydrological Characteristics

1. Drainage

Onsite drainage will be provided with the existing system of drainage. The proposed improvements to provide septage handling will not increase drainage loading on the existing drainage system. In the event of accidental spills of the septage material, there are operational procedures that will mitigate the spillage and minimize the impacts into the adjacent coastal zone. All septage material that accidentally spills will be contained and returned to the wastewater collection/treatment system. Compliance with the Flood Insurance Rate map criteria for construction improvements will be a responsibility of the site design engineering firm and also the structural design engineer. The FIRM maps are for all existing and proposed land use impacts, and the Sand Island WWTP is in compliance with the FIRM maps.


I S L A N D
S A N D
P A R K W A Y
Future Influent Receiving Area
CONTROL/ ADMINISTRATION BUILDING
SWITCH GEAR STATION
SAND ISLAND PARKWAY WWPS
Future Screenings Area
R O A D "M"
STATE TRAINING FACILITY
NO. 1
NO. 3
NO. 5
Future Scrubber
CLARIFIER BUILDING
Clarifier, Typical
Future Operations Area
NO. 2
NO.4
NO. 6
Future Preaeration Tank
R O A D
"N"
Future Driveway
SCREENINGS BUILDING
NO. 1
NO. 3
Future Scrubber
SOLIDS HANDLING FACILITY
NO. 2
NO. 4
Effluent Conduit
Thickeners
Influent Channel
N
100 50 0
Scale in



Parametrix, Inc.

Septage Facilities on Oahu
Sand Island

Site Plan

PMX 22-2096-03

Figure 2

2. Coastal Zone Management Program/City & County of Honolulu Special Management Area (SMA) Use Permit

   The proposed project is located in the Special Management Area Boundary (See **Figure 3**). A Special Management Area Permit (SMP) will be prepared and processed with the City Department of Land Utilization. Compliance with the Coastal Zone Management Act is under the review jurisdiction of the Office of State Planning, who will review this document as a routine evaluation.

C. Biological Characteristics

The location of the proposed Septage Handling Facilities at the Sand Island Waste Water Treatment Plant is on fully improved and previously disturbed lands. There will be little if any impacts to the existing biota due to this proposed project. Plant and animal species prevalent at the Sand Island WWTP are exotic or introduced species and will not be affected by this project.

D. Historic and Archaeological Characteristics

The previously disturbed nature of the proposed Septage Handling Facility site and the fact that the Sand Island WWTP is on Fill Land precludes the possibility of uncovering sites with historic or archaeological significance. In the event that sites are uncovered, construction work will be halted and the State Historic Preservation Division, Department of Land and Natural Resources will be advised.

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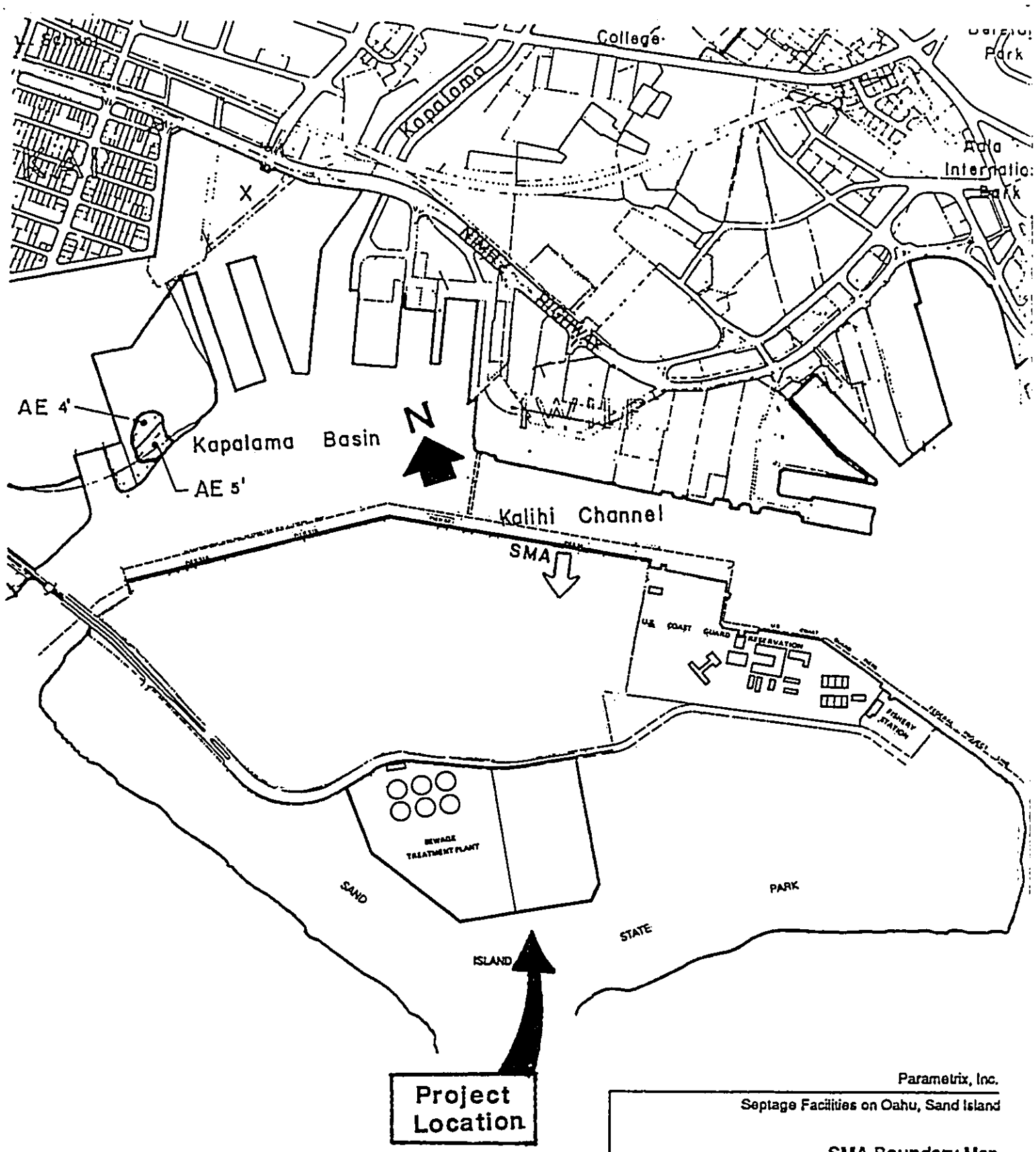


Parametrix, Inc.

Septage Facilities on Oahu, Sand Island

SMA Boundary Map

PMX 22-2096-03

 Figure 3

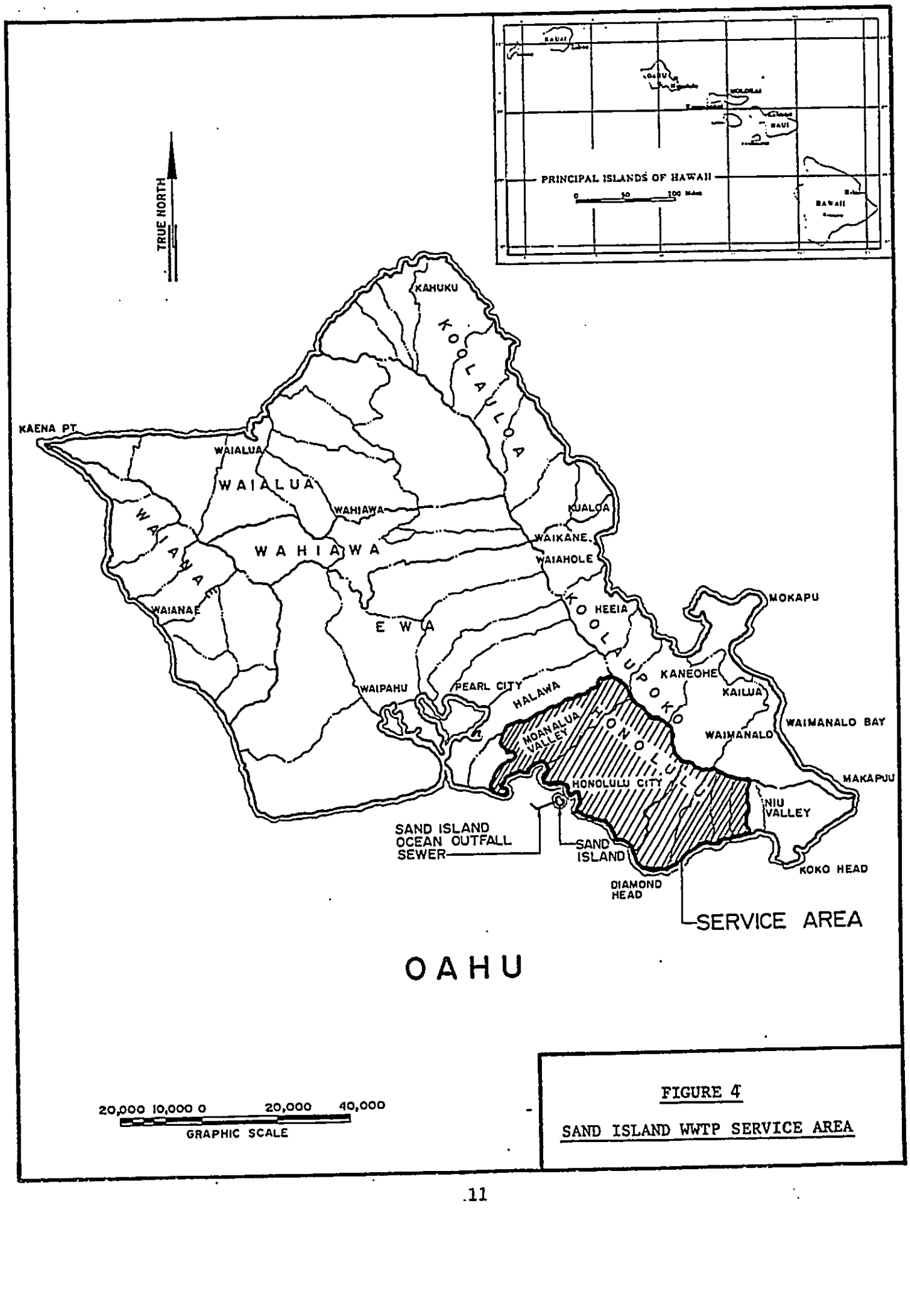
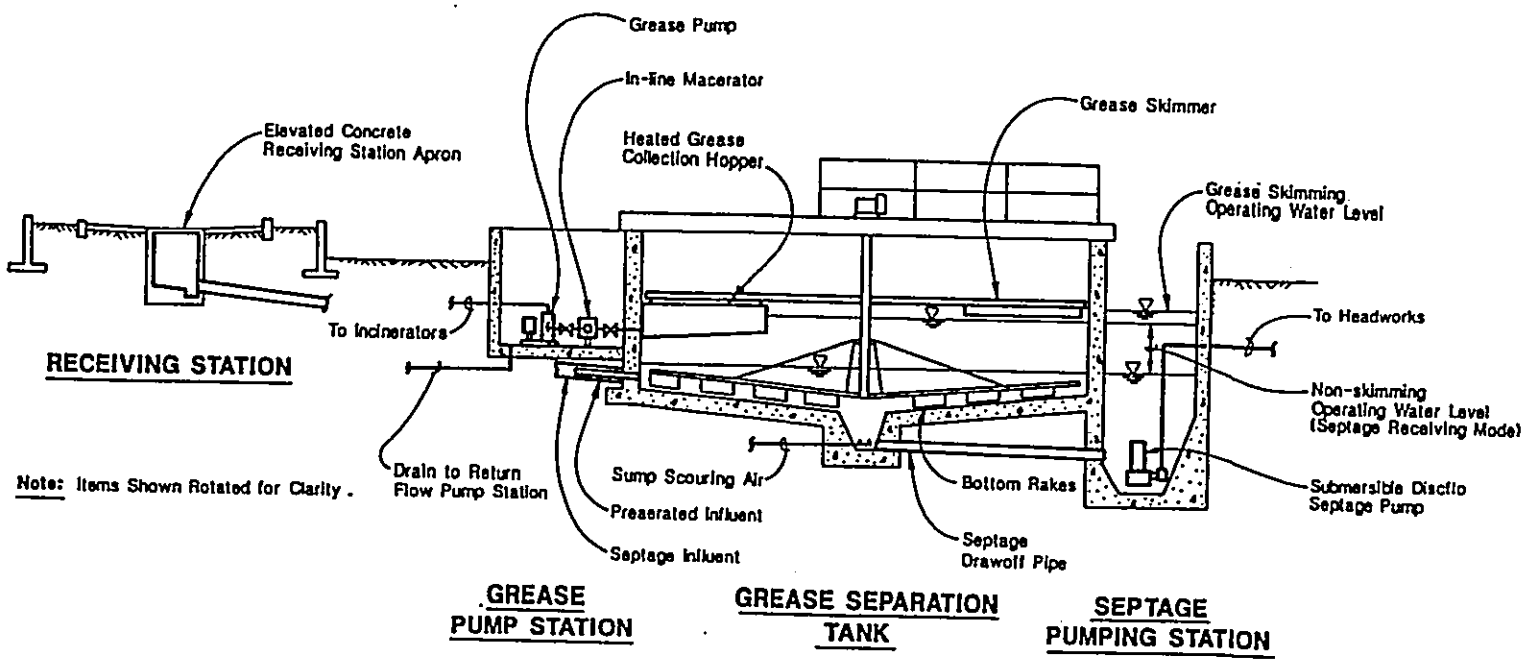


FIGURE 4

SAND ISLAND WWTP SERVICE AREA



Note: Items Shown Rotated for Clarity.

FIGURE 5

Parametrix, Inc.

Septage Facilities on Oahu
Sand Island

Proposed Septage Facilities

IV. SUMMARY OF MAJOR IMPACTS AND MITIGATIVE MEASURES

A. Impacts

Impacts due to the implementation of the proposed project improvements can be viewed in two areas: short and long term. Short term impacts, beneficial and adverse, generally result from construction related activities. These are consequently of short duration and are related and limited to the construction phase of site improvements, i.e. on site and structural. Topographic alterations will result from the onsite grading necessary to provide an even and stable building platform for the structural improvements. Other onsite improvements will be to:

- provide ready access for the septage vehicles to reach the unloading ports;
- the connection of the utilities;
- the onsite drainage improvements to tie in with the drainage system;
- and the perimeter fencing to secure the facilities since the project location is adjacent to the Sand Island Parkway Road.

Long term impacts result from the implementation and operation of the proposed project.

These include the following:

- Increased commercial and municipal pump truck traffic;
- Odor Control due to the increased septage quantities to be handled at the Sand Island WWTP;
- and increased electrical consumption due to increased waste loading and treatment.

B. Mitigative Measures

Short term or construction related impacts will be the responsibility of the contractor to adhere to the State Department of Health Regulations on Community Noise for Oahu. This will be done by avoiding the "gunning" of equipment; working only during the normal operating hours of 7:00 a.m. to 3:30 p.m.; and installing appropriate muffler noise abatement devices on all construction equipment. Fugitive Dust will be abated by adhering to the State Department of Health Regulations on Air Quality. Frequent street watering; lay on of dust control materials; and exposing only a minimum of earth at a time. Fortunately, the prevailing zoning is I-3 and there are no residential districts

V. ALTERNATIVES CONSIDERED

Alternatives

The selected site location took into consideration the existing operations at Sand Island WWTP. The decision to place the Septage Handling Facilities at the designated north-east corner was based on ready ingress and egress for septage vehicles. Other areas were evaluated and discarded due to the conflict with plant operations at those locations, and the distance for pumping grease to the sludge holding tanks was too far.

The continued practice of discharging septage into Sewer Manhole located near the Coast Guard Station was reviewed and ultimately rejected for primarily cost reasons.

Other Sand Island WWTP locations included a site on the east side of the Facility, but this was also rejected since future expansion of the Sand Island WWTP for secondary treatment of wastewater would require additional space.

A location near the Solids Handling Facility was also considered and rejected for cost benefit reasons and less than satisfactory traffic considerations.

The "No Action" alternative would have resulted in the selected site remaining unused and the volume of septage continuing to be a problem for treatment and disposal.

VI. DETERMINATION, FINDINGS, AND REASONS SUPPORTING DETERMINATION

After completing an assessment of the potential environmental effects of the proposed action, and consulting with other government agencies, it has been determined that a Notice of Negative Declaration can be anticipated. This will be completed after the pre-agency consultation period and Draft Environmental Assessment has been posted in the OEQC Bulletin. The policies, guidelines, and provisions of Chapters 342, 343, and 344 Hawaii Revised Statutes were consulted in the evaluation process.

1. The proposed project will not adversely affect the physical and social environment. There may be minor discomfort and annoyances to the Sand Island Parkway Road traffic during construction, but these will be mitigated by adherence to applicable City traffic control ordinances. Increased operational traffic once the Septage handling Facility is completed will also result.

2. There will be no permanent degradation of the existing ambient air quality and community noise levels. During the construction phase, the air and noise standards will be temporarily affected, but these effects will be temporary and short term in nature. Odor control will be managed by operational and maintenance staff.

3. No residences or businesses will be disrupted by the project. The site is part of the Sand Island WWTP and the Septage Facility is a consistent use and compatible with the overall WWTP.

4. There are no endangered plant species on the project site, and the prevailing flora and fauna are exotic or introduced species.

5. There are no known natural, historic, or archaeological sites within the project's metes and bounds.

6. The project will be consistent with the prevailing Land Use District Urban designation; the Development Plan Facilities Map; and the Zoning designation of I-3.

7. There are no significant adverse secondary effects on population, future development, and public facilities due to this project.

VII. LIST OF PREPARERS

Parametrix, Inc.

Hawaii Pacific Engineers, Inc.

VIII. FUNDING AND PHASING

This Project will be funded entirely by the applicant, the Department of Public Works, Division of Waste Water Management, City & County of Honolulu. All improvements will be designed and built to County Building code standards. Construction will commence after all required permits have been processed and completed. Construction costs are estimated to be $1,770,000.00 and the work will be completed in one phase. Funding will be solely from the City & County of Honolulu.

IX. LIST OF AGENCIES CONSULTED DURING THE PREPARATION OF THE ENVIRONMENTAL ASSESSMENT

ORGANIZATIONS AND AGENCIES:

Agency	Date of Consultation	Date Comment Received
State of Hawaii		
Mr. Harold Masumoto, Director Office of State Planning		5-3-93
Mr. Keith W. Ahue, Chair State Dept. of Land & Natural Resources		5-5-93
Dr. Bruce Anderson, Dep. Director State Dept. of Health		
Mr. T. Harano, Chief Highways Division State Dept. of Transportation		4-14-93
Mr. Mufi Hanneman, Director Department of Business & Economic Development		4-27-93
City & County of Honolulu		
Mr. Robin Foster Dept. of General Planning		4-30-93
Mr. Donald A. Clegg, Director Dept. of Land Utilization		
Mr. C. Michael Street, Ch. Engr. Dept. of Public Works		
Mr. Joseph N. Magaldi, Director Dept. of Trans. Services		
Mr. Michael S. Nakamura, Chief Honolulu Police Department		4-19-93
Mr. Donald Chang, Chief Honolulu Fire Department		4-14-93

Agency	Date of Consultation	Date Comment Received
Mr. Kazu Hayashida, Manager Board of Water Supply		4-27-93
Mr. Gary Gill City Council		
Kalihi-Palama Neighborhood Board #15		

JOHN WAIHEE
GOVERNOR

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

REED JOHNSON
DIRECTOR

DEPUTY DIRECTORS
JOYCE T. OMINE
AL PANG
JEANNE K. SCHULTZ
CALVIN M. TSUDA

IN REPLY REFER TO
STP 8.5142

April 14, 1993

RECEIVED
APR 16 1993
PARAMETRIX, INC.
HONOLULU

Mr. F. J. Rodriguez
Parametrix, Inc.
1164 Bishop Street, Suite 1600
Honolulu, Hawaii 96813

Dear Mr. Rodriguez:

Subject: Environmental Assessment Pre-Agency Review
Sand Island Septage Handling Facilities
PMX Project No.: 22-2096-03

While we have no objections to the proposed expansion to the Sand Island Waste Water Treatment Plant, the developer should coordinate the access for the Septage facility area with our department. Construction plans for any work within the Sand Island Parkway right-of-way must be submitted for our review and approval. All cost for roadway improvements will be borne by the developer.

Thank you for the opportunity to provide comments.

Sincerely,

Rex D. Johnson
Director of Transportation

DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET
HONOLULU, HAWAII 96813

FRANK F. FASI
MAYOR

C. MICHAEL STREET
DIRECTOR AND CHIEF ENGINEER

FELIX B. LIMTIACO
DEPUTY DIRECTOR

WEP 93-132

April 21, 1993

Mr. Rex D. Johnson, Director
State of Hawaii
Department of Transportation
869 Punchbowl Street
Honolulu, Hawaii 96813

Dear Mr. Johnson:

Subject: Environmental Assessment Pre-Agency Review for the Sand Island Septage Handling Facilities
Sand Island Oahu, Hawaii TMK: 1-5-41: 5

We have received your agency comments dated April 14, 1993 on the pre-agency draft Environmental Assessment for the above subject project and respond as follows:

1. The existing ingress and egress will be utilized for this facility operation. If any modifications to the existing access are necessary, we will coordinate our work with your department.

2. The construction plans will be provided to the State Highways Division, Department of Transportation, for review and approval.

Thank you for your timely comments and continuing cooperation.

Very truly yours,

C. MICHAEL STREET
Director and Chief Engineer

FIRE DEPARTMENT

CITY AND COUNTY OF HONOLULU

3375 KOAPAKA STREET, SUITE H425
HONOLULU, HAWAII 96819-1869

RECEIVED
APR 19 1993
PARAMETRIX, INC.

FRANK F. FASI
MAYOR

[illegible]
FIRE CHIEF

RICHARD R. SETO-NOOK
DEPUTY FIRE CHIEF

April 14, 1993

Mr. F. J. Rodriguez
Parametrix, Inc.
1164 Bishop Street, Suite 1600
Honolulu, Hawaii 96813

Dear Mr. Rodriguez:

SUBJECT: **SAND ISLAND SEPTAGE HANDLNG FACILITIES**
Environmental Assessment Pre-Agency Review
PMC Project No.: 22-2095-03

We have reviewed the subject material provided and foresee no adverse impact in Fire Department facilities or services.

Access for fire apparatus, water supply and building construction shall be in conformance to existing codes and standards.

Should you have any questions, please call Assistant Chief Attilio Leonardi of our Administrative Services Bureau at 831-7775.

Very truly yours,

[illegible]
DONALD S. M. CHANG
Fire Chief

AKL:ny

DEPARTMENT OF PUBLIC WORKS

CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET
HONOLULU, HAWAII 96813

FRANK F. FASI
MAYOR

C. MICHAEL STREET
DIRECTOR AND CHIEF ENGINEER

FELIX B. LIMTIACO
DEPUTY DIRECTOR

WEP 93-133

April 22, 1993

<u>MEMORANDUM</u>

TO: MR. DONALD S.M. CHANG, CHIEF
FIRE DEPARTMENT

FROM: C. MICHAEL STREET, DIRECTOR AND CHIEF ENGINEER
DEPARTMENT OF PUBLIC WORKS

SUBJECT: ENVIRONMENTAL ASSESSMENTS PRE-AGENCY REVIEW FOR
<u>SAND ISLAND SEPTAGE HANDLING FACILITIES</u>

We have received your department comments dated April 14, 1993 for the subject project and respond as follows:

1. All access for fire apparatus, water supply, and building construction shall be in conformance with existing codes and standards.

2. The department position of no adverse impact in Fire Department facilities or services is duly noted.

Thank you for your timely comments and continuing cooperation.

C. Michael Street
C. MICHAEL STREET
Director and Chief Engineer

POLICE DEPARTMENT
CITY AND COUNTY OF HONOLULU
801 SOUTH BERETANIA STREET
HONOLULU, HAWAII 96813 • AREA CODE (808) 529-3111

FRANK F. FASI
MAYOR

MICHAEL S. NAKAMURA
CHIEF

HAROLD M. KAWASAKI
DEPUTY CHIEF

OUR REFERENCE BS-LK

April 19, 1993

Mr. F. J. Rodriguez
Parametrix, Inc.
1164 Bishop Street, Suite 1600
Honolulu, Hawaii 96813

Dear Mr. Rodriguez:

This is in response to your letter of March 30, 1993 about septage facilities at the Sand Island Waste Water Treatment Plant.

The Honolulu Police Department notes that mitigative measures will be employed to minimize dust, noise, odor, and traffic problems, which would be our major concerns. We have no other comments at this time.

Thank you for the opportunity to review this document.

Sincerely,

MICHAEL S. NAKAMURA
Chief of Police

By Eugene Uemura
EUGENE UEMURA
Assistant Chief of Police
Administrative Bureau

DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET
HONOLULU, HAWAII 96813

FRANK F. FASI
MAYOR

C. MICHAEL STREET
DIRECTOR AND CHIEF ENGINEER

FELIX B. LIMTIACO
DEPUTY DIRECTOR

WEP 93-138

April 23, 1993

MEMORANDUM

TO: MICHAEL S. NAKAMURA, CHIEF OF POLICE
HONOLULU POLICE DEPARTMENT

FROM: C. MICHAEL STREET
DIRECTOR AND CHIEF ENGINEER

SUBJECT: ENVIRONMENTAL ASSESSMENTS PRE-AGENCY REVIEW FOR SAND ISLAND SEPTAGE HANDLING FACILITIES

We have received your department comments dated April 19, 1993 on the above project and respond as follows:

Mitigative measures will be employed to minimize dust, noise, odor and traffic problems.

Thank you for your timely comments and continuing cooperation.

C. Michael Street
C. MICHAEL STREET
Director and Chief Engineer

PLANNING DEPARTMENT
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET
HONOLULU HAWAII 96813

FRANK F. FASI
MAYOR

RECEIVED
APR 30 1993
PARAMETRIX, INC.
HONOLULU

ROBIN FOSTER
CHIEF PLANNING OFFICER
ROLAND D. LIBBY, JR.
DEPUTY CHIEF PLANNING OFFICER

MM 3/93-865

April 28, 1993

Mr. F. J. Rodriguez
Parametrix, Inc.
1164 Bishop Street, Suite 1600
Honolulu, Hawaii 96813

Dear Mr. Rodriguez:

Preliminary Draft Environmental Assessment
for the Septage Handling Facilities
at the Sand Island Waste Water Treatment Plant
Tax Map Key: 1-5-41: 5

The Planning Department has reviewed the subject document and offers the following comments:

1. The proposed project is designated "Public Facility" on the Primary Urban Center Development Plan (DP) Land Use Map. This designation should be included in the "Summary" section of the proposed project.

2. The Primary Urban Center Development Plan (DP) Public Facilities Map designates the subject site for Sewage Treatment Plant modification, within six years.

Thank you for the opportunity to comment. Should you have any questions, please contact Mel Murakami of our staff at 527-6020.

ROBIN FOSTER
Chief Planning Officer

RF:ft

DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET
HONOLULU HAWAII 96813

FRANK F. FASI
MAYOR

C. MICHAEL STREET
DIRECTOR AND CHIEF ENGINEER
FELIX B. LIMTIACO
DEPUTY DIRECTOR

WEP 93-162

May 7, 1993

MEMORANDUM

TO: MR. ROBIN FOSTER, CHIEF PLANNING OFFICER
PLANNING DEPARTMENT

FROM: C. MICHAEL STREET, DIRECTOR AND CHIEF ENGINEER
DEPARTMENT OF PUBLIC WORKS

SUBJECT: PRE-AGENCY ENVIRONMENTAL ASSESSMENT FOR THE PROPOSED SEPTAGE HANDLING FACILITIES AT SAND ISLAND WASTEWATER TREATMENT PLANT, TAX MAP KEY: 1-5-41: 5

We have received your department comments dated April 28, 1993 and we respond as follows:

Inclusion of the Development Plan Land Use map indicating "Public Facility" has been made in the Summary section of the E.A. document. We have attached a copy for your files.

Thank you for your timely comments and continuing cooperation.

C. MICHAEL STREET
Director and Chief Engineer

Attachments

BOARD OF WATER SUPPLY
CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU HAWAII 96843

RECEIVED
APR 27 1993
PARAMETRIX, INC.
HONOLULU

April 21, 1993

FRANK F FASI Mayor
WALTER D WATSON JR Chairman
MAURICE H YAMASATO Vice Chairman
SISTER M DAYILYN AH CHOCK O S F
JOHN W ANDERSON JR
REX D JOHNSON
MELISSA FJ LUM
C MICHAEL STREET
KAZU HAYASHIDA
Manager and Chief Engineer

Mr. F.J. Rodriguez
Parametrix, Inc.
1164 Bishop Street, Suite 1600
Honolulu, Hawaii 96813

Dear Mr. Rodriguez:

Subject: Your Letter of March 30, 1993 Regarding the Environmental Assessment Pre-Agency Review for the Sand Island Septage Handling Facilities at the Sand Island Wastewater Treatment Plant (WWTP), PMX Project No. 22-2096-03, Honolulu, Oahu, TMK: 1-5-41: 05

Thank you for the opportunity to review and comment on the proposed project to construct septage handling facilities at the WWTP.

We have no objections to the proposed project and anticipate no adverse impacts to our water system facilities in the area.

If you have any questions, please contact Roy Doi at 527-5121.

Very truly yours,

KAZU HAYASHIDA
Manager and Chief Engineer

cc: Robert Ishida
(Department of Public Works)

Pure Water . man's greatest need . use it wisely

DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
630 SOUTH KING STREET
HONOLULU HAWAII 96813

FRANK F FASI
MAYOR
C MICHAEL STREET
DIRECTOR AND CHIEF ENGINEER
FELIX B LIMTIACO
DEPUTY DIRECTOR

May 6, 1993

WEP 93-154

MEMORANDUM

TO: MR. KAZU HAYASHIDA, MANAGER AND CHIEF ENGINEER
BOARD OF WATER SUPPLY

FROM: C. MICHAEL STREET, DIRECTOR AND CHIEF ENGINEER
DEPARTMENT OF PUBLIC WORKS

SUBJECT: SEPTAGE HANDLING FACILITIES ON OAHU:
SAND ISLAND WASTEWATER TREATMENT PLANT

We have received your agency comments dated April 21, 1993 on the above proposed project and respond as follows:

We acknowledge the BWS position that states "The proposed project will have no adverse impacts to the BWS water system facilities, and there are no objections to the project."

Thank you for your timely comments and continuing cooperation.

for C. MICHAEL STREET
Director and Chief Engineer

OFFICE OF STATE PLANNING

Office of the Governor

MAILING ADDRESS: P.O. BOX 3540, HONOLULU, HAWAII 96811-3540
STREET ADDRESS: 250 SOUTH HOTEL STREET, 4TH FLOOR
TELEPHONE: (808) 587-2846, 587-2800
FAX: Director's Office 587-2848
Planning Division 587-2824

Ref. No. C-8

April 29, 1993

RECEIVED
MAY 3 1993
PARAMETRIX, INC.
HONOLULU

Parametrix, Inc.
1164 Bishop Street, Suite 1600
Honolulu, Hawaii 96813

Attn: F.J. Rodriguez

Dear Mr. Rodriguez:

We received your three letters of March 30, 1993, soliciting comments and concerns regarding the draft Environmental Assessments (EA) for the proposed Septage Facilities at the Kahuku, Paalaa-Kai, and Sand Island Waste Water Treatment Plants (WWTP), and we have the following response.

The draft EAs correctly state all three WWTPs are located within the Special Management Area (SMA) of Oahu, and thus will require permits processed by the Department of Land Utilization. However, the Office of State Planning, as lead agency for Hawaii's Coastal Zone Management Program, and not the Department of Business, Economic Development, and Tourism as stated in the draft EAs, routinely monitors the processing of SMA permits by the various counties. Finally, involvement of Federal funds, as stated in the draft EAs, is not the sole determinant of whether this project must comply with the Coastal Zone Management Act. The federal Coastal Zone Management Act of 1972, as amended, provides that many federal actions, such as the granting of federal permits and licenses, must comply with the approved Coastal Zone Management program of the respective state.

If you have any questions, please contact our Coastal Zone Management Program at 587-2876.

Sincerely,

Harold S. Masumoto
Director

DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET
HONOLULU, HAWAII 96813

FRANK F. FASI
MAYOR

C. MICHAEL STREET
DIRECTOR AND CHIEF ENGINEER

FELIX B. LIMTIACO
DEPUTY DIRECTOR

May 6, 1993

WEP 93-157

Mr. Harold S. Masumoto, Director
Office of State Planning
P. O. Box 3540
Honolulu, Hawaii 96811-3540

Dear Mr. Masumoto:

Subject: Pre-Agency Comments on Septage Handling Facilities at Sand Island Wastewater Treatment Plant

We have received your agency comments dated April 29, 1993 on the above proposed project and we respond as follows:

1. Revisions to the Draft E.A. document will be made to correct the incorrect reference to the Coastal Zone Management Act review jurisdiction. We direct you to the revisions which are attached.

Thank you for your timely response and continuing cooperation.

Very truly yours,

C. MICHAEL STREET
for Director and Chief Engineer

Attachments

DEPARTMENT OF BUSINESS,
ECONOMIC DEVELOPMENT & TOURISM

JOHN WAIHEE
Governor

MUFI HANNEMANN
Director

BARBARA KIM STANTON
Deputy Director

RICK EGGED
Deputy Director

TAKESHI YOSHIHARA
Deputy Director

Central Pacific Plaza 220 South King Street 9th Floor Honolulu, Hawaii
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804 Telephone: (808) 586-2406 Fax: (808) 586-2377

RECEIVED
APR 27 1993
PARAMETRIX, INC
HONOLULU

April 16, 1993

Mr. F. J. Rodriguez
Parametrix, Inc.
1164 Bishop Street, Suite 1600
Honolulu, Hawaii 96813

Dear Mr. Rodriguez:

The Department of Business, Economic Development & Tourism is pleased to submit the enclosed comments on the Draft Environmental Assessment for Septage Facilities on Oahu: Kahuku Septage Handling Facilities, Paalaa-Kai Septage Handling Facilities, and Sand Island Septage Handling Facilities.

The comments were provided by the Land Use Commission. Questions regarding these comments may be directed to Esther Ueda, LUC Executive Officer at 587-3826.

Thank you for the opportunity to comment.

Sincerely,

Mufi Hannemann

Enclosure

JOHN WAIHEE
GOVERNOR

ESTHER UEDA
EXECUTIVE OFFICER

STATE OF HAWAII
DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM
LAND USE COMMISSION
Room 104, Old Federal Building
335 Merchant Street
Honolulu, Hawaii 96813
Telephone: 587-3822

April 13, 1993

SUBJECT: Director's Referral No. 93-101-N
Draft Environmental Assessment for Septage Facilities on Oahu: (Kahuku Septage Handling Facilities, Paalaa-Kai Septage Handling Facilities, Sand Island Septage Handling Facilities)

We have reviewed the subject draft environmental assessments and have the following comments to offer:

Kahuku Septage Handling Facilities

1) The tax map key identification on page 1 of the Draft EA is in error. The current tax map key should read TMK: 5-6-2: por. 24.

2) We confirm that the project location is within the State Land Use Agricultural District.

3) The existing sewage treatment plant was the subject of SP78-317/City and County of Honolulu, Department of Public Works, approved by the LUC on January 11, 1979.

4) Based on Figure 2 of the respective Draft EA, it appears that the proposed septage handling facility involves TMK: 5-6-2: por. 1 (east of TMK: 5-6-2: 24). This should be clarified in the Final EA and amendments made accordingly. We also note that if expansion into TMK: 5-6-2: por. 1 is proposed, another Special Permit or amendment to SP78-317 is needed.

5) The project site is nearby to an area recommended for reclassification from the Agricultural District to the Conservation District under the Draft State Land Use District Boundary Review - Oahu, currently being conducted by the Office of State Planning. Specifically, the Kii Unit of the James Campbell National Wildlife Preserve is a Priority 2 recommendation.

Paalaa-Kai Septage Handling Facilities

1) We confirm that the project location, identified as TMK: 6-6-34: 33 & 34, is within the State Land Use Urban District and not the Agricultural District as stated on page 1 of the respective Draft EA.

2) Review of Figure 2 of the respective Draft EA indicates that proposed improvements are within TMK: 6-6-34: por. 33 and por. 35. It appears that no improvements are proposed within 6-6-34: 34. This should be clarified in the Final EA and references amended accordingly.

Sand Island Septage Handling Facilities

1) We wish to note that because the proposed septage handling facility will not involve the total parcel, the TMK identification should read as TMK: 1-5-41: por. 5.

2) We confirm that the project location, identified as TMK: 1-5-41: por. 5, is within the State Land Use Urban District.

We have no further comments to offer at this time.

EU:LRA:th

DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET
HONOLULU, HAWAII 96813

FRANK F. FASI
MAYOR

C. MICHAEL STREET
DIRECTOR AND CHIEF ENGINEER

FELIX B. LIMTIACO
DEPUTY DIRECTOR

WEP 93-159

May 12, 1993

Mr. Hufi Hanneman, Director
Department of Business,
Economic Development & Tourism
P. O. Box 2359
Honolulu, Hawaii 96804

Dear Mr. Hanneman:

Subject: Pre-Agency Comments on Septage Facilities at Sand Island Wastewater Treatment Plant

We have received your department comments dated April 16, 1993 on the proposed facilities and we respond as follows:

1. We acknowledge that the correct TMK designation is 1-5-41: 5.

2. We acknowledge your confirmation of the Sand Island Wastewater Treatment Plant being in the Urban District.

Thank you for your timely comments and continuing cooperation.

Very truly yours,

for C. MICHAEL STREET
Director and Chief Engineer

JOHN WAIHEE
GOVERNOR OF HAWAII

KEITH W. AHUE, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

DEPUTIES
JOHN P. KEPPELER, II
DONA L. HANAIKE

AQUACULTURE DEVELOPMENT PROGRAM
AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
CONSERVATION AND ENVIRONMENTAL AFFAIRS
CONSERVATION AND RESOURCES ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
P. O. BOX 621
HONOLULU, HAWAII 96809

REF:OCEA:SKK

FILE NO.: 93-525
DOC. NO.: 2710

MAY 4 1993

Mr. Fred Rodriguez
Parametrix, Inc.
1164 Bishop Street, Suite 1600
Honolulu, Hawaii 96813

Dear Mr. Rodriguez:

SUBJECT: Draft Environmental Assessment (DEA): Septage Facilities at the Sand Island Wastewater Treatment Plant, Honolulu, Oahu, TMK: 1-5-41: por. 5

We have reviewed the DEA information for the subject project transmitted by your letter dated March 30, 1993, and have the following comments:

Division of Aquatic Resources

The Division of Aquatic Resources comments that insufficient information was provided to determine the potential impacts that the proposed project could have on the marine environment. For example, the Final EA should address, whether the proposed plant improvements will be able to handle commercial, industrial, and agricultural wastes, and if not, what mitigative measures are planned to handle such wastes should they be accidentally or purposefully introduced.

Historic Preservation Division

The Historic Preservation Division (HPD) comments that a review of their records shows that there are no known historic sites at the proposed project location. The proposed project is located at the established wastewater treatment facility which was built on fill lands. HPD believes that it is unlikely that historic sites will be found in this situation. Therefore, HPD believes that this project will have "no effect" on historic sites.

We have no other comments to offer at this time. Thank you for the opportunity to comment on this matter.

Please feel free to contact Steve Tagawa at our Office of Conservation and Environmental Affairs, at 587-0377, should you have any questions.

Very truly yours,

KEITH W. AHUE

DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET
HONOLULU, HAWAII 96813

FRANK F. FASI
MAYOR

C. MICHAEL STREET
DIRECTOR AND CHIEF ENGINEER

FELIX B. LIMTIACO
DEPUTY DIRECTOR

WEP 93-169

May 11, 1993

Mr. Keith W. Ahue, Chair
Department of Land and Natural Resources
P. O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Ahue:

Subject: Pre-Agency Comments on the Proposed Septage Handling Facilities at the Sand Island Wastewater Treatment Plant (WWTP), Honolulu, Oahu, TMK: 1-5-41: por. 5

We have received your comments dated May 4, 1993, and we respond as follows:

1. The proposed improvements at the Sand Island WWTP are to be designed solely for the accepting, processing, and disposing of septage wastes as part of the total WWTP operations. The proposed plant improvement will be capable of handling wastes as described in the Environmental Assessment. Furthermore, acceptance of wastes at the facilities is regulated by the City Ordinances. All procedures in the correct processing of septage wastes at the Sand Island WWTP will be reviewed and approved by the State Department of Health. The facilities are required to meet the regulations that govern the protection of the coastal zone marine biota and environment.

2. The "no effect" comment from the Historic Preservation Division is duly noted.

Thank you for your continued cooperation.

Very truly yours,

C. MICHAEL STREET
Director and Chief Engineer

DEPARTMENT OF LAND UTILIZATION
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET
HONOLULU, HAWAII 96813 • (808) 523-4432

FRANK F. FASI
MAYOR

DONALD A. CLEGG
DIRECTOR

LORETTA K.C. CHEE
DEPUTY DIRECTOR

93-02123(ASK)

July 29, 1993

Mr. F.J. Rodriguez
Parametrix, Inc.
1164 Bishop Street, Suite 1600
Honolulu, Hawaii 96813

Dear Mr. Rodriguez:

We have reviewed the preliminary Draft Environmental Assessment (DEA) for the Sand Island Septage Handling Facility. As noted in that document, the project is within the Special Management Area, and will require a Special Management Area Use Permit (SMP) from the City Council. If the Final Environmental Assessment, prepared pursuant to Chapter 343, HRS, is intended to meet application requirements of the Special Management Area Use Permit application, it must address the following, which are not included in the preliminary DEA:

General Clarification

- Provide a description or map identifying the service area.
- Explain the current method used for septage disposal. Define "preloader waste" discussed on page 5 of the preliminary EA.
- Clarify whether the discharge station noted on page 5 of the preliminary EA is part of the proposed project. This facility does not appear to be identified in your project description described on page one.
- Describe the generation and disposal of solid waste that will be generated by the processing of the septage at the Sand Island Wastewater Treatment Plant (SIWWTP).
- Identify the location and point of discharge for the on-site drainage system.

- Clarify what is meant by long term impacts of "increased commercial and municipal pump truck traffic" and "Odor Control" found on page 8 of the preliminary EA. The EA should distinguish between increased pump truck traffic at the SIWWTP relative to general increases. Please clarify whether odor or odor control is a long term impact resulting from the project.

Water Quality

- Describe impacts to water quality. Although not stated, we assume that the treatment of .032 million gallons per day (MGD) of septage at the SIWWTP may increase effluent volumes. If so, identify the anticipated increase.
- Explain the "operational procedures", Page 6 of the preliminary EA, that will be used to control accidental spills. Is structural containment of spills also being considered?

Septage Processing

- Describe the proposed septage treatment process. A schematic diagram relating the proposed equipment or structure to the process that it performs, and further identifying the direction of flows, inputs and outputs would be helpful for agencies and the public who are reviewing this project.
- The second paragraph found on Page 9 of the preliminary EA indicates that the SIWWTP will be expanded to a secondary treatment facility. Page 4 indicates that septage processing is different at primary and secondary plants. You should describe the processing of septage, when SIWWTP is upgraded to a secondary facility.
- Describe the proposed grease trap treatment process.

An explanation of the purpose and need for the project would make the document more comprehensible.

Our department has recently processed an SMP for the Interim Chemical Treatment Facility at the SIWWTP. We anticipate preparation of this preliminary EA precedes an SMP application for the septage facility, and are aware that there are future plans to upgrade and possibly expand the SIWWTP, construction of which will also require an SMP.

Chapter 25 ROH specifies that the evaluation of project impacts include "potential cumulative impacts of individual developments". While we recognize that these improvements may represent "separate" projects for your department, a comprehensive review is called for under Chapter 25. As such, we urge that to the extent possible, improvements and expansion of the SIWWTP be submitted under a single SMP application.

Should you have questions regarding the above, you may contact Ardis Shaw-Kim of our staff at 527-5349.

Very truly yours,

Donald Clegg

DONALD A. CLEGG
Director of Land Utilization

DAC:ask
cc:Robert Ishida, DPW

G:fred.ask
A:fred.as5

DEPARTMENT OF WASTEWATER MANAGEMENT
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET
HONOLULU, HAWAII 96813

FRANK F. FASI
MAYOR

KENNETH M. RAPPOLT
DIRECTOR

FELIX B. LIMTIACO
DEPUTY DIRECTOR

August 27, 1993

WEP 93-393

MEMORANDUM

TO: MR. DONALD A. CLEGG, DIRECTOR
DEPARTMENT OF LAND UTILIZATION

FROM: KENNETH M. RAPPOLT, DIRECTOR
DEPARTMENT OF WASTEWATER MANAGEMENT

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT (EA) FOR THE PROPOSED SEPTAGE FACILITIES ON OAHU AT THE SAND ISLAND WASTEWATER TREATMENT PLANT (SIWWTP), 1-5-41:5

We have received your Department's comments dated July 29, 1993 on the above project and we respond as follows:

1. A service area map will be included in the Final EA document. (See Figure 4).

2. Under the current method for septage disposal, septage waste is combined and treated with domestic sewage flows at existing treatment plant. There is no separate or dedicated septage handling system.

3. Preloader waste is the material initially separated by settling and floating in a private treatment system.

4. Depending on which side of the Receiving Station you are on, the terminology for waste discharge/receiving is essentially the same. Trucks discharge septage where septage is received for the septage handling facilities. We are providing your Department with a schematic diagram of the proposed septage facilities.

5. Septage is generated from septic tanks, cesspools, grease traps, shipboard waste systems, and chemical toilets. Once the septage is collected and hauled by pumpers to be discharged into the receiving station at the septage handling facility, grease will be skimmed from the liquid. The liquid will be combined with the plant influent and grease will be combined with the plant sludge. The end product (the "solid waste") is in a form of sludge either to be incinerated and its ash hauled to a landfill or to be hauled directly to a landfill.

6. The finished grade will be kept as close as to that of the existing conditions and the surface drainage pattern will not change. There will be no additional on-site drainage loading due to the proposed septage facilities.

7. The previous practice of septage discharge via sewer manholes will be replaced by the septage facilities upon project completion. All manhole discharge/receiving points will be discontinued. This will increase the commercial truck traffic at SIWWTP, but it will reduce or eliminate septage hauling to the sewer manholes designated for sepatge discharge.

8. A long term impact of the odor control system is that it requires operation and maintenance. However, having the sewer manhole discharge eliminated by the septage handling facilities, odor problems will be dramatically reduced.

9. Section C on page 6 on the Draft EA describes the identified 0.032 MGD as corresponding to approximately 0.04% of the design average daily flow of 82 MGD. Impacts to water quality from the increase in flow is not expected because of the small quantity.

10. Please refer to the schematic diagram (See Figure 5) which depicts the proposed septage facilities of the Receiving Station. A typical scenario would have the truck discharge valve (located at the bottom of the truck tank) centered over the opening in the elevated concrete receiving station apron before it is opened to discharge the septage. Spill containment will be provided in the receiving station's apron area. Spillage will be hosed into the sump in the apron.

11. Again, the septage process is explained via the schematic diagram of the proposed septage facilities.

12. If the SIWWTP is expanded to provide secondary treatment, the septage processing and handling will not change. See Item 5.

13. Grease trap wastes are handled in the same way as all the other septage. See Item 5.

14. We recognize the intent and purpose of Chapter 25, ROH which requires the full discussion of anticipated impacts on a cumulative basis. At the present time, the East Mamala Bay Facility Plan and the SIWWTP Master Plan are being prepared. When these planning documents are completed, they will comprise the Department policy guide for future planned improvements at the SIWWTP. At that time, a single Master Plan SMP could be prepared and processed in compliance with Chapter 25.

Thank you for your comments on the subject project and you will be pleased to note that in the 30 day review ending August 8, 1993, your comments were the only submittals received.

KENNETH H. RAPPOLT
Director

Attachment

cc: Parametrix (F. Rodriguez)

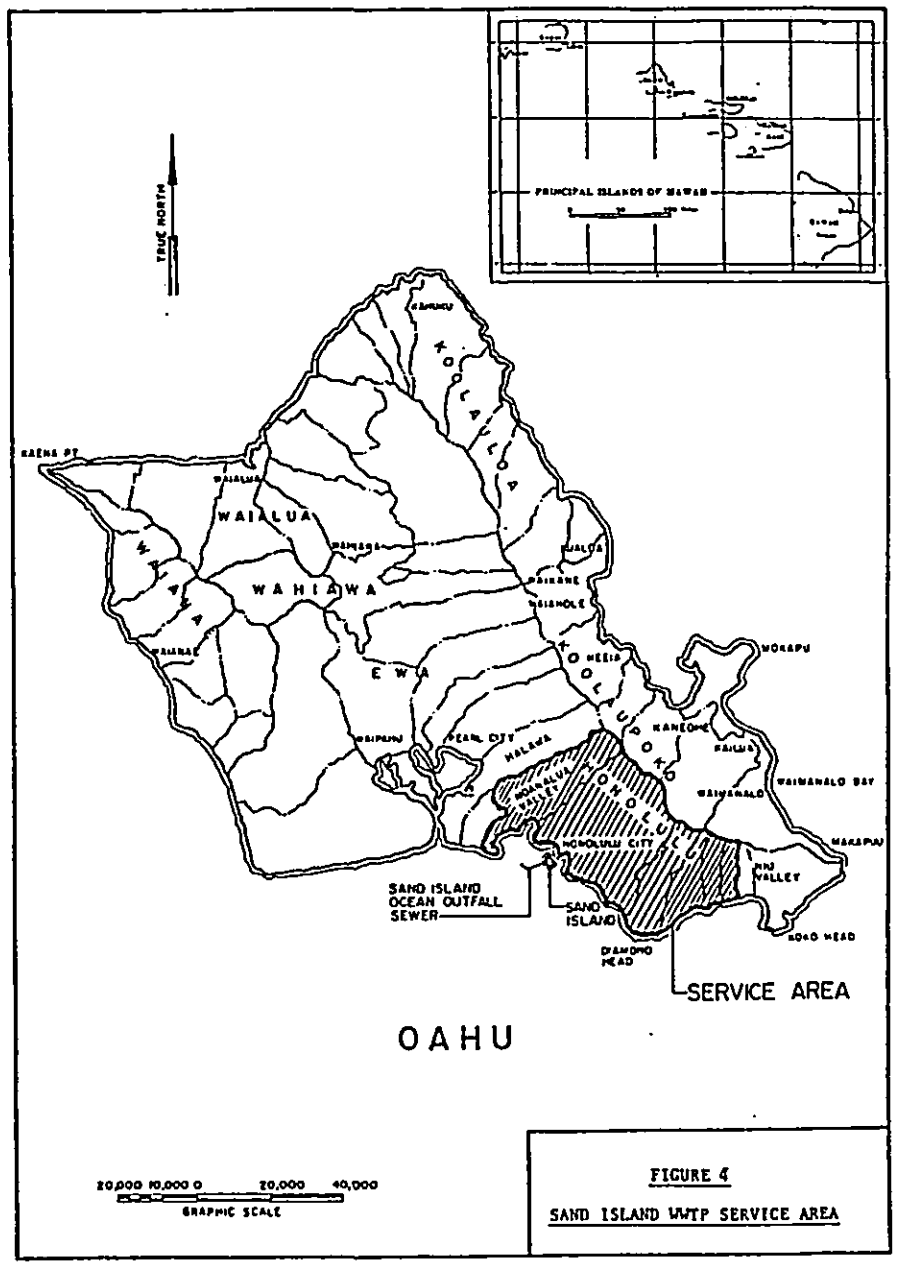
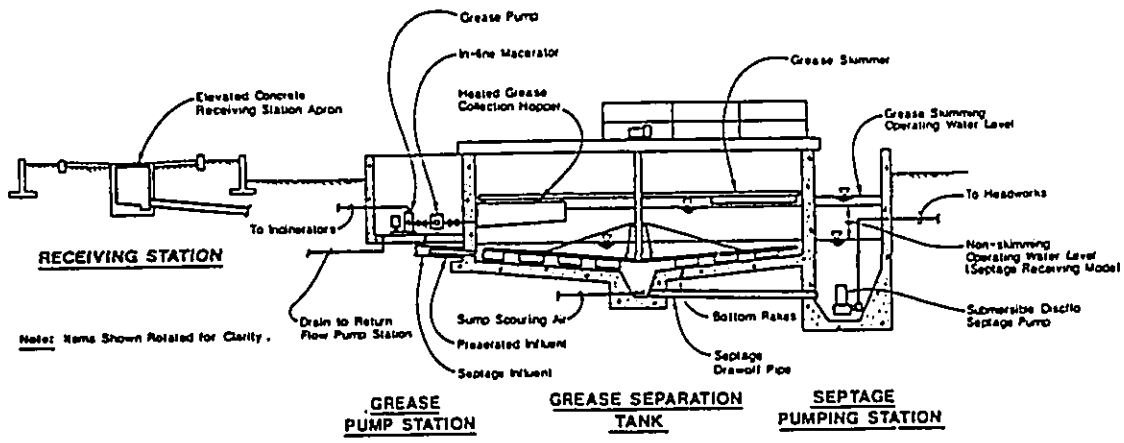


FIGURE 4

SAND ISLAND WWTP SERVICE AREA



Parsons, Inc.

Septage Facilities on Oahu
Sand Island

Proposed Septage Facilities

Figure 5