State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

Interoffice Memorandum

FOR ROUTING TO OTHER THAN THE ADDRESSEE

To: _____ Locin: _____
To: _____ Locin: _____
To: _____ Locin: _____
From: _____ Date: _____

DER
NOV 25 1987
BAQM

TO: Power Plant Siting Review Committee

FROM: Hamilton S. Oven HSO

DATE: November 24, 1987

SUBJECT: Pasco County Resource Recovery Facility PA 87-23

Attached please find a revision to the Pasco County Resource Recovery Facility power plant siting application.

HSO/mkr
cc: All parties
cc: Pradeep Raval
Barry Andrews
Jon Rogers
CTHF/BT
} 11/25/87

LOT7C.4/75
11/19/87

PASCO COUNTY, FLORIDA
SOLID WASTE RESOURCE RECOVERY FACILITY
APPLICATION FOR
POWER PLANT SITE CERTIFICATION
VOLUME III - AIR QUALITY

ERRATA

Page 6-42, Table 6-15, Footnote a: Sixty-six should be sixty-five.

Page 6-43, Table 6-16, for 1972, 3-hour, Total Impact: 13.12 should be 13.42.

File Copy

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

Interoffice Memorandum

For Routing To Other Than The Addressee
To: Clair Fancy Location: BAQM
To: _____ Location: _____
To: _____ Location: _____
From: _____ Date: _____

DER
NOV 19 1987
BAQM

TO: Power Plant Siting Review Committee

FROM: Buck Oven HSO

DATE: November 18, 1987

SUBJECT: Pasco County Resource Recovery Facility
PA 87-23

Pasco County has requested that their power plant siting application be processed in an expedited fashion. A copy of their request is attached. If we agree to the attached schedule, the Department must arrive at its final recommendations by February 10, 1988. Will your Unit's work schedule allow you to complete your portion of the review, forward to me your assessment, recommendations and conditions of certification by early February? If not, when could you finish your portion of the review?

HSOjr/jb
Attachment
cc: Rick Garrity
Richard Donelan
Clair Fancy
Larry Olsen
Jim McNeal
John Reese

Copied: CHF/BT
Pradeep Raval
Barry Andrews
Jam Rogers
} 11/24/87

M E M O R A N D U M

TO: Buck Oven

FROM: Daniel E. Strobridge, CDM
David S. Dee, Carlton, Fields, et al.

SUBJECT: Proposed Review Schedule for the Pasco County County Resource Recovery Facility

DATE: November 17, 1987

Pasco County wants to enter into an agreement with DER and the other agencies that will review Pasco County's application for site certification for a resource recovery facility. Specifically, Pasco County wants to obtain site certification by July 31, 1988. To meet this deadline, the review process under the Power Plant Siting Act (PPSA) must be expedited.

There are several reasons for expediting the review process, including: (1) a shortage of existing landfill disposal capacity in the County; (2) the increased consumption of disposal capacity which would result from delaying implementation of the resource recovery facility; and (3) the County's schedule for selecting a full-service contractor and commencing construction of the proposed solid waste facility. Each of these issues is more fully discussed below.

Shortage of Landfill Disposal Capacity

Pasco County, with the recent expansion of the existing East Pasco Landfill (EPLF), has only an estimated 2.5 years of remaining disposal capacity. Delays in permitting the resource recovery facility and associated landfill/ashfill will exacerbate the problem. The County will be forced to purchase additional land adjacent to the EPLF to provide disposal capacity until the resource recovery facility is completed.

Increased Consumption of Disposal Capacity

Pasco County currently generates about 660 tons of solid waste per day. Nearly 500 tpd are delivered to the landfill and this consumes 1,500 cubic yards of landfill capacity daily. With resource recovery, only 375 cubic yards of capacity will be used per day--a savings of some 1,125 cubic yards per day.

A delay of only six (6) months in implementation of resource recovery will cost Pasco County over 200,000 cubic yards of

valuable landfill capacity at today's solid waste generation volumes. Since the continued landfilling will occur in the future (1991), the lost (consumed) disposal capacity will be approximately 250,000 cubic yards.

Resource Recovery Implementation Schedule

Pasco County has already prequalified 7 vendors through an RFQ process that was completed in September, 1987.

The following is the remainder of the implementation schedule:

January 7, 1988	RFP released to vendors.
March 30, 1988	Proposals received from vendors.
April 29, 1988	Proposal evaluation complete. Vendor recommended to Pasco BOCC.
May 3, 1988	Negotiations authorized by BOCC.
June 22, 1988	Vendor contract negotiations complete.
August 1, 1988	Bonds are issued.

To finanace the facility, the site certification must be secured prior to the issuance of the bonds. Accordingly, Pasco County wants to coordinate the PPSA review schedule with the County's implementation schedule.

Proposed Review Schedule for PPSA Application

Pasco County would like to enter into a stipulation with the other parties to the PPSA process. This stipulation would establish the following timetable for the review of Pasco County's application.

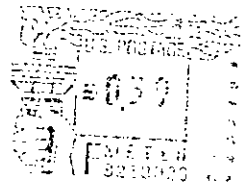
1. Pasco County files PPSA application --On or before November 17, 1987

2. Agencies finish completeness review --On or before December 1, 1987 (10 working days)

3.	Agencies finish sufficiency review	--On or before December 22, 1987 (35 days)
4.	DER publishes notice of land use hearing	--Before January 15, 1988 (45 days before hearing)
5.	DCA and SWFWMD submit preliminary reports to DER	--January 17, 1988 (60 days)
6.	Agencies submit final reports to DER	--February 17, 1988 (90 days)
7.	DER issues consolidated agency report	--March 2, 1988
8.	Land use hearing	--March 10, 1988
9.	DER publishes notice of site certification hearing	--Before March 10, 1988 (30 days before hearing)
10.	File Proposed Order with Hearing Officer concerning Land Use Hearing	--March 31, 1988
11.	Site Certification Hearing	--April 11-15, 1988
12.	Hearing Officer issues Recommended Order concerning Land Use Hearing	--April 28, 1988
13.	File proposed Order with Hearing Officer concerning site certification	--May 20, 1988
14.	Siting Board considers land use issues	--June 1, 1988
15.	Hearing Officer issues recommended order for site certification	--June 20, 1988
16.	Siting Board considers site certification	--July 26, 1988

Of course, Pasco County recognizes that this timetable may change if Pasco County fails to promptly supply the additional information requested by the agencies during the sufficiency review process.

DSD/vc:Pasco-10



First Class Mail

CDM

Raymond C. Porter
CAMP DRESSER & McKEE INC.

One Center Plaza
Boston, Massachusetts 02108

6104-2-PT-AIRP #50

Mr. Bill Thomas
Department of Environmental Regulations
Bureau of Air Quality Management
2600 Blair Stone Road
Twin Towers Office Building
Tallahassee, FL 32301

PSD PL-127

1887 PASCO COUNTY FLORIDA 1987

★CENTENNIAL★

Pasco County Utilities Division
7536 State Street
New Port Richey, Florida 33553
(813) 847-8145

November 6, 1987

State of Florida
Department of Environmental Regulation
Division of Environmental Permitting
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32301

ATTN: Mr. Hamilton Oven, P.E.
Power Plant Siting Section

RE: Application for Power Plant Site Certification
Pasco County Resource Recovery Facility

Dear Mr. Oven:

Enclosed is Pasco County's application for an Electrical Power Plant Siting Certification submitted pursuant to Florida Department of Environmental Regulation Chapter 17-17 FAC and FDER Form 17-1.211(1).

Pasco County and its engineering consultant, Camp Dresser & McKee Inc., look forward to working with you, your staff, and other agencies with review responsibility.

We anticipate that the information contained herein provides all that is necessary to allow a thorough evaluation of our application. However, if you find that additional data or clarification is required, do not hesitate to contact us at your earliest convenience.

Also enclosed is our check for $25,000.00 to cover the application fee.

Sincerely,

George Ellsworth

George Ellsworth
Resource Recovery Manager

dmc
PAS7C.6/18

PASCO COUNTY, FLORIDA

SOLID WASTE RESOURCE RECOVERY FACILITY

APPLICATION FOR

POWER PLANT SITE CERTIFICATION

VOLUME I - APPLICATION

SUBMITTED BY
THE PASCO COUNTY
BOARD OF COUNTY COMMISSIONERS

NOVEMBER 1987

PREPARED BY
CAMP DRESSER & McKEE INC.

ENGINEER SUBMITTING APPLICATION: Louis R. Tortora

FLORIDA REGISTRATION NUMBER: 0032073

LOUIS RICHARD TORTORA
CERTIFICATE
No. 32073
STATE OF FLORIDA
REGISTERED ENGINEER

WARRANT PAYABLE AT
First Union National Bank of Florida
Dade City, Florida

BOARD OF COUNTY COMMISSIONERS
PASCO COUNTY DADE CITY, FLORIDA
PAYING ACCOUNT

63-579
631

CHECK NO.
00160627
160627

VOID IF NOT CASHED
WITHIN 90 DAYS

TWENTY-FIVE THOUSAND DOLLARS NO CENTS

PAY TO THE ORDER OF
FLORIDA DEPARTMENT OF
ENVIRONMENTAL REGULATION
3900 COMMONWEALTH BLVD
TALLAHASSEE, FL 32303

DATE 11-10-87

CHECK AMOUNT ****25,000.00

CLERK CIRCUIT COURT EX-OFFICIO CLERK
OF THE BOARD OF COUNTY COMMISSIONERS

CHAIRMAN OF THE BOARD OF COUNTY COMMISSIONERS

⑈160627⑈ ⑆063105793⑆1800190010⑆

APPLICANT INFORMATION

Applicant's Official Name:	Pasco County
Address:	Pasco County Government Center 7530 Little Road New Port Richey, Florida 33553
Business Entity: Name and Title of Business Head:	County Government Ann Hildebrand, Chairman Pasco County Board of County Commissioners
Name, Title and Address of Representative Responsible for Obtaining Certification:	George Ellsworth, Manager Resource Recovery Project
Site Location:	County - Pasco Nearest Incorporated City - Port Richey Latitude and Longitude: 28°22'05"N 82°33'30"W Township and Range: T24S, R17E; Sections 24, 25, and 26
Nameplate Generating Capacity of Proposed Facility:	22 megawatts initially 29 megawatts ultimate

REMARKS: The sole purpose of the proposed resource recovery facility is to dispose of solid waste and recover energy and possibly materials. This proposed facility will afford Pasco County a method of solid waste disposal which will substitute for the present landfilling operations. Pasco County does not operate, maintain or construct facilities for the purpose of electric generation; and does not distribute electrical energy generated at facilities operated by others.

Key: Sections kept for Air Permit Files

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ABBREVIATIONS

AADT	Average Annual Daily Traffic
ADT	Average Daily Traffic
BOD	Biological Oxygen Demand
CEC	Cation Exchange Capacity
CLU	Critical Level Volume
COD	Chemical Oxygen Demand
CY	Cubic Yards
dBA	Decibels (A-Weighted Scale)
FGD	Flue Gas Desulfurization
GPD	Gallons Per Day
GPM	Gallons Per Minute
KWH	Kilowatt Hour
LOS	Level of Service
MGD	Million Gallons Per Day
MSL	Mean Sea Level
MSW	Municipal Solid Waste
PFU	Plaque Forming Units
PPM	Parts Per Million
PVC	Polyvinyl Chloride
SPT	Standard Penetration Test Boring
TPD	Tons Per Day
VPD	Vehicles Per Day
WWTP	Wastewater Treatment Plant
BEBR	Bureau of Economic and Business Research
CUP	Consumptive Use Permit
DER	Department of Environmental Regulation
DRI	Development of Regional Impact
EPA	Environmental Protection Agency
FAA	Federal Aviation Administration
FAC	Florida Administration Code
FDOT	Florida Department of Transportation
FEMA	Federal Emergency Management Agency
FGFWFC	Florida Game and Freshwater Fish Commission

ABBREVIATIONS
(Continued)

FNAI	Florida National Areas Inventory
FPC	Florida Power Corporation
FWS	U.S. Fish and Wildlife Services
NPDES	National Pollution Discharge Elimination System
PCBOCC	Pasco County Board of County Commissioners
PSD	Prevention of Significant Deterioration
SCS	Soil Conservation Service
SR	State Road
SWFMWD	Southwest Florida Water Management District
USDA	United States Department of Agriculture
USGS	United States Geological Survey

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

For nearly seven years, Pasco County has been investigating alternative methods for long-term solid waste disposal. The county began its investigation in 1980, after the State of Florida enacted legislation (Chapter 403.706 Florida Statutes) requiring the county to submit resource recovery and management plans. The current solid waste disposal method—sanitary landfilling—is becoming inadequate as a primary disposal method, due to environmental and siting constraints. Land areas in the county which are environmentally and economically suitable for sanitary landfilling are quickly diminishing, and ground and surface water resources are threatened by sanitary landfilling of solid waste. There has been much interest in the resource recovery concept of solid waste disposal, because this method can: (1) reduce the volume of solid waste which must be landfilled, (2) reduce the threat of contamination of water resources, and (3) allow the recovery of energy and recyclable materials. Studies commissioned by the county since 1980 have concluded that a mass-burn, resource recovery system is the most prudent long-term primary solid waste disposal method for Pasco County.

SITE LOCATION

Site selection was made by the county in the fall of 1985, after review of a detailed study prepared by the county's consulting engineers. The site is located in northwest Pasco County, near the county's waste generation centroid. The site consists of 751 acres on Hays Road, approximately 2.5 miles north of SR 52, on land owned by the county. Existing Florida Power Corporation transmission lines cross the site.

PURPOSE OF THE PROPOSED FACILITY

The primary purpose of the facility is to dispose of the municipal solid waste generated within Pasco County. Noncombustibles and inert ash residue from the plant's combustion process will be disposed of at a co-located sanitary landfill/ashfill. The power derived from the combustion of refuse

will be sold to Florida Power Corporation. The revenues from the sale of energy will help offset the operating costs of the facility. The proposed project has received an affirmative determination of need from the Florida Public Service Commission.

FACILITY DESCRIPTION

The proposed project will be a mass-burn resource recovery facility with an initial continuous design rated processing capacity of 900 tons per day of municipal solid waste. In anticipation of future disposal needs, Pasco County is seeking certification for an ultimate site electrical generating capacity of approximately 29 megawatts (gross), fueled by 1,200 tons per day of municipal solid waste. Pasco County will contract with a full-service vendor to design, construct, and operate the plant for 20 years.

APPLICATION OVERVIEW

Pursuant to Section 403.505, Florida Statutes, Pasco County is applying for certification of a solid waste energy recovery facility. This application has been prepared in accordance with the Florida Department of Environmental Regulation (FDER) Chapter 17-17 Rules and follows the format prescribed in FDER Form 17-1.211(1), FAC (Instruction Guide for Certification Application: Electrical Power Plant Site, Associated Facilities, and Associated Transmission Lines).

The application encompasses four volumes:

Volume I (Application) - contains the Applicant Information sheet, Sections 1.0 through 9.0 of the application, and the list of references.

Volume II (Appendices) - contains Section 10.0, the appendices of the application. In addition to the appendices required by the FDER Instruction Guide, seven other appendices are included to supplement Volume I.

Volume III (Air Quality) - contains information concerning the Prevention of Significant Deterioration (PSD) determination and the Best Available Control Technology (BACT) determination.

Volume IV (Landfill/Ashfill) - contains information concerning the construction/operations of the landfill/ashfill, and the geotechnical investigation report.

PRINCIPAL FINDINGS

The proposed facility will be designed and operated to meet all applicable federal, state and county standards. As planned, the facility will have a minimal impact on the surrounding environment. The analyses in this application support the following conclusions:

- Air Quality - As discussed in Volume III - Air Quality, the combustion process for the facility will be environmentally sound. As required by the PSD permitting process, an air pollution control technology evaluation and air quality impact assessment were conducted. The control technology evaluation considered energy, environmental and economic criteria and proposed a dry scrubber and baghouse as the Best Available Control Technology for the Pasco County resource recovery facility. The air quality impacts assessment compared the predicted air quality impacts from the proposed facility to the Florida and National Ambient Air Quality Standards and the PSD Class I and Class II increments. These analyses demonstrated that the predicted impacts of the proposed facility are at less than significant levels and will not cause or contribute to an excedance of the air quality standards or increments.

- Surface Water and Groundwater - As discussed in Sections 4.2 and 5.1.4, all plant process water will be drawn from the Hudson Subregional Wastewater Treatment Plant, and all

wastewater discharged from the solid waste resource recovery facility will go directly to this wastewater treatment plant. Potable water will be used in small quantities in the personnel areas of the plant and for boiler make-up purposes. All plant water will be recycled, with no discharge to surface or groundwater. Runoff from vegetated areas, paved areas, and rooftops will be collected in onsite stormwater retention/detention basins. Refuse storage and ash/residue handling operations will be covered, to protect them from precipitation and runoff. As discussed in Section 4.3, there will be no influence on groundwater quality as a result of the planned construction dewatering activity.

- Noise - As discussed in Section 5.7, noise levels at the closest residence will increase by only 1.0 to 3.0 dBA above existing and modeled noise levels during operation of the resource recovery facility. This increase is not perceptible to the human ear.

- Plant and Animal Communities - During more than 50 observer hours of site surveying, there were no direct observations or other evidence of species listed as threatened or endangered by the U.S. Fish and Wildlife Service (FWS) or the Florida Game and Fresh Water Fish Commission (FGFWFC). There are no National Wildlife Refuges or critical habitats located within 5 miles of the project site, according to the FWS. The Florida Natural Areas Inventory stated that currently there are no occurrences of special elements (i.e., plants and animals) for this site. A population of Gopher Tortoises has been found on the site. As a Species of Special Concern with FGFWFC, the welfare and future survival of Gopher Tortoises on this property will be given careful attention. See Section 4.4.1 for more information on this issue.

- Archaeological Sites and Historic Preservation Areas - As discussed in Section 5.10, there are no known historic or

prehistoric resources within the project site boundaries, according to the Division of Historical Resources. As it is planned, the project will not impact any historic or prehistoric cultural resources.

- Soil and Foundation Conditions - As discussed in Section 2.3.1, preliminary subsurface data indicate that certain surface conditions at the project will require specific site preparation and subsurface foundation design. These subsurface conditions are considered typical of those normally encountered in the immediate area, and the appropriate preparation and design will performed.

- Traffic - As discussed in Section 5.9.4, the solid waste resource recovery facility will increase daily traffic by approximately 1 percent on SR 52 and 24 percent on Hays Road. The high percentage increase on Hays Road is a result of the very low current traffic volumes on Hays Road. The traffic analysis shows that no capacity problems will be caused by this additional traffic. Current levels of service on these roads will not change as a result of expected traffic increases.

- Land Use and Zoning - On December 19, 1986, the Pasco County Zoning Administration determined that the selected site for the resource recovery facility and landfill/ashfill is exempt from the provisions of the county's zoning ordinance, Ordinance No. 75-21, as amended. The project is considered an acceptable development, undertaken for the promotion of the public health, safety, and general welfare, and is therefore exempt. After reviewing the goals and objectives of the Solid Waste and Resource Recovery Element, the Pasco County Planning Director has determined that the proposed resource recovery facility is consistent with the goals and objectives of the Pasco County Comprehensive Land Use Plan.

- Aesthetics - As discussed in Section 3.2, there will be some visual impact associated with the facility. The design of the facility will be aesthetically pleasing and architecturally compatible with the surrounding area. Due to the natural buffer surrounding the site, the major portion of the facility will be obscured from view from most offsite vantage points.

1.0 NEED FOR POWER AND THE PROPOSED FACILITIES

1.0 NEED FOR POWER AND THE PROPOSED FACILITIES

1.1 LOCAL/REGIONAL BENEFITS

The purpose of the proposed resource recovery facility is to dispose of the solid waste generated within Pasco County. The decision to build a resource recovery facility was made after several years of investigation by the county of alternatives to landfilling of solid waste. Landfilling of municipal solid waste in Pasco County is inadequate for two primary reasons: (1) there is a shortage of land which is suitable for landfilling, and (2) the landfilling of putrescible garbage poses a potential long-term threat to the quality of the area's groundwater. Water quality is a significant concern, since three major well fields in Pasco County (Cross Bar Ranch, Cypress Creek, and Starkey) supply water to major metropolitan areas in Pinellas County, Hillsborough County, and Pasco County.

After evaluating the alternatives, the county determined that the best alternative for disposal of municipal solid waste in Pasco County is combustion of the waste in a resource recovery facility, followed by landfilling of the ash residue. Combustion of municipal solid waste in Pasco County will reduce the volume of waste which must be landfilled by up to 70 percent. This reduced volume will extend the life of the co-located landfill/ashfill by 3 times. The ash from the combustion process will require less landfill space than noncombusted waste, and will generate no methane gas. Thus, by disposing of its solid waste through combustion and landfilling, Pasco County will conserve land, preserve the natural environment, and protect water quality.

Combustion of solid waste has the secondary benefit of electricity generation. The electric power which may be derived from combustion of Pasco County's solid waste can stabilize, or possibly reduce the rapidly escalating cost of solid waste disposal. The electricity generated by combustion of 900 tons per day of municipal solid waste--the initial

capacity of the proposed facility--can eliminate the need for 352,000 barrels of oil per year for electric energy generation.

1.2 BENEFITS TO THE STATE

In Chapter 84-198, Laws of Florida (1984), the Florida Legislature has declared that "It is critical to encourage energy conservation in order to protect the health, prosperity, and general welfare of this State and its citizens." The Legislature has further declared that the "combustion of solid waste by small power production facilities for the production of electricity not only represents conservation efforts well-directed towards that goal, but also represents an environmentally preferred alternative to conventional solid waste disposal in this State." In Section 403.702 of the Florida Statutes, the Florida Resource Recovery and Management Act declares that "the purpose of this act is to promote the application of resource recovery systems which preserve and enhance the quality of air, water and land resources."

In a letter inviting local officials to attend a workshop on the topic of resource recovery in Florida (1985), former Governor and current U.S. Senator Bob Graham wrote: "Programs which result in the substitution of resource recovery alternatives to direct landfilling are vital to the protection of Florida's fragile environment. The utilization of municipal solid waste as a safe and abundant renewable energy resource represents a positive economic opportunity for many Florida communities.... Recent technological advances have made resource recovery a viable option for small, growing populations as well as large urban areas. Experience in Florida indicates that resource recovery can reduce landfill area requirements by up to 70 percent, and at the same time produce valuable electricity and thermal energy for use or sale."

Pasco County's proposed solid waste disposal program pursues the state's policy of resource recovery as a long-term solid waste disposal solution. The proven mass-burn technology will provide a reliable and economical solution for Pasco County's long-term solid waste disposal needs.

The county's proposed system is also consistent with the Florida State Comprehensive Plan (FS, 1985). The plan states the following goals and policies regarding energy and waste:

Energy Goal:

> #12 Florida shall reduce its energy requirements through enhanced conservation and efficiency measures in all end-use sectors, while at the same time promoting an increased use of renewable energy resources.

Policies (Objectives):

> #5 Reduce the need for new power plants by encouraging end-use efficiency, reducing peak demand, and using cost-effective alternatives.
>
> #9 Promote the use and development of renewable energy resources.

Waste Management Goal:

> All solid waste, including hazardous waste, wastewater and all hazardous materials, shall be properly managed, and the use of landfills shall be eventually eliminated.

Policies (Objectives):

> #1 By 1995, reduce the volume of nonhazardous solid waste disposed of in landfills to 55 percent of the 1985 volume.
>
> #7 Encourage the research, development, and implementation of recycling, resource recovery, energy recovery, and other methods of using garbage, trash, sewage, slime, sludge, hazardous waste, and other waste.

1.3 FEDERAL ENERGY REGULATORY COMMISSION ORDER

On September 26, 1986, the Pasco County Board of County Commissioners filed an application with the Federal Energy Regulatory Commission (FERC) for certification of its proposed resource recovery facility as a small power production facility pursuant to Section 292.207 of the commission's regulations and Section 201 of the Public Utility Regulatory Policy Act of 1978 (PURPA). Notice of the application was published in the Federal Register on October 16, 1986. On December 4, 1986, FERC granted the county's application for certification of its resource recovery project as a qualifying small power production facility. A copy of the final order is included in Appendix 10.1.7.

1.4 PUBLIC SERVICE COMMISSION ORDER

On February 24, 1987, the Pasco County Board of County Commissioners filed a petition with the Florida Public Service Commission (PSC) for a determination of need for a 29-megawatt solid waste fired cogeneration power plant. The PSC determined that Pasco County's proposed facility meets the relevant criteria for a determination of need under Section 403.519, Florida Statutes. Although it is a small facility, the Public Service Commission concluded that the 29-megawatt plant will contribute to the electric system reliability and integrity in peninsular Florida. A copy of the final order is included in Appendix 10.1.7.

2.0 SITE AND VICINITY CHARACTERIZATION

2.0 SITE AND VICINITY CHARACTERIZATION

2.1 SITE AND ASSOCIATED FACILITIES DELINEATION

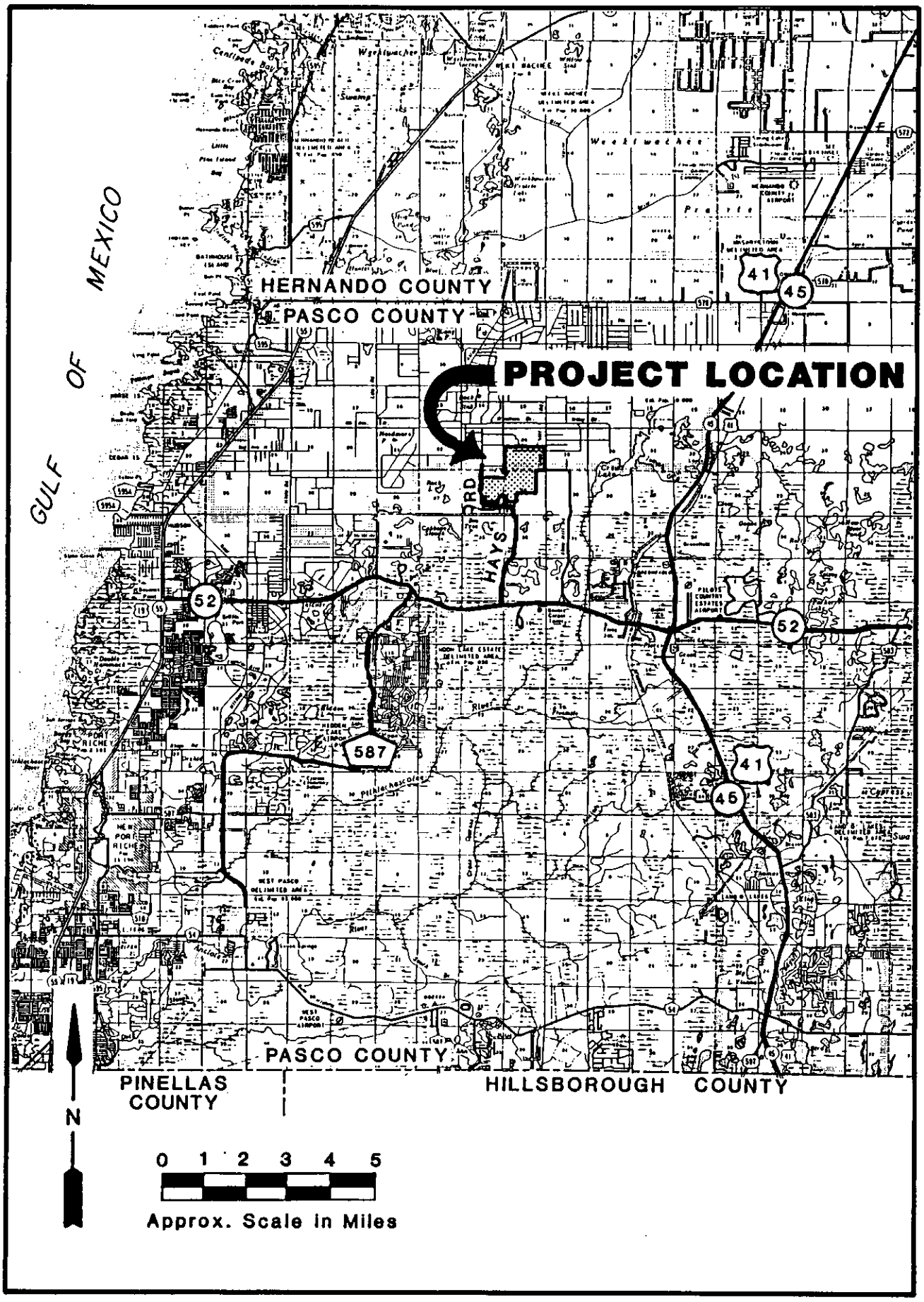
2.1.1 SITE LOCATION

The project site is located on a 751-acre tract owned by Pasco County, Florida, in the northwestern portion of the county (see Figure 2-1). The site, shown on Figure 2-2, is bounded on the west and south by Hays Road, on the east by Shady Hills Road, and on the north by Bluebird Lane. The property is bisected by a 295-foot wide Florida Power Corporation transmission line easement and right-of-way which runs roughly north/south through the site. The boundary survey is shown on Figure 2-3, and the legal description, deed and condemnation notice are provided in Appendix 10.6.

2.1.2 EXISTING USES

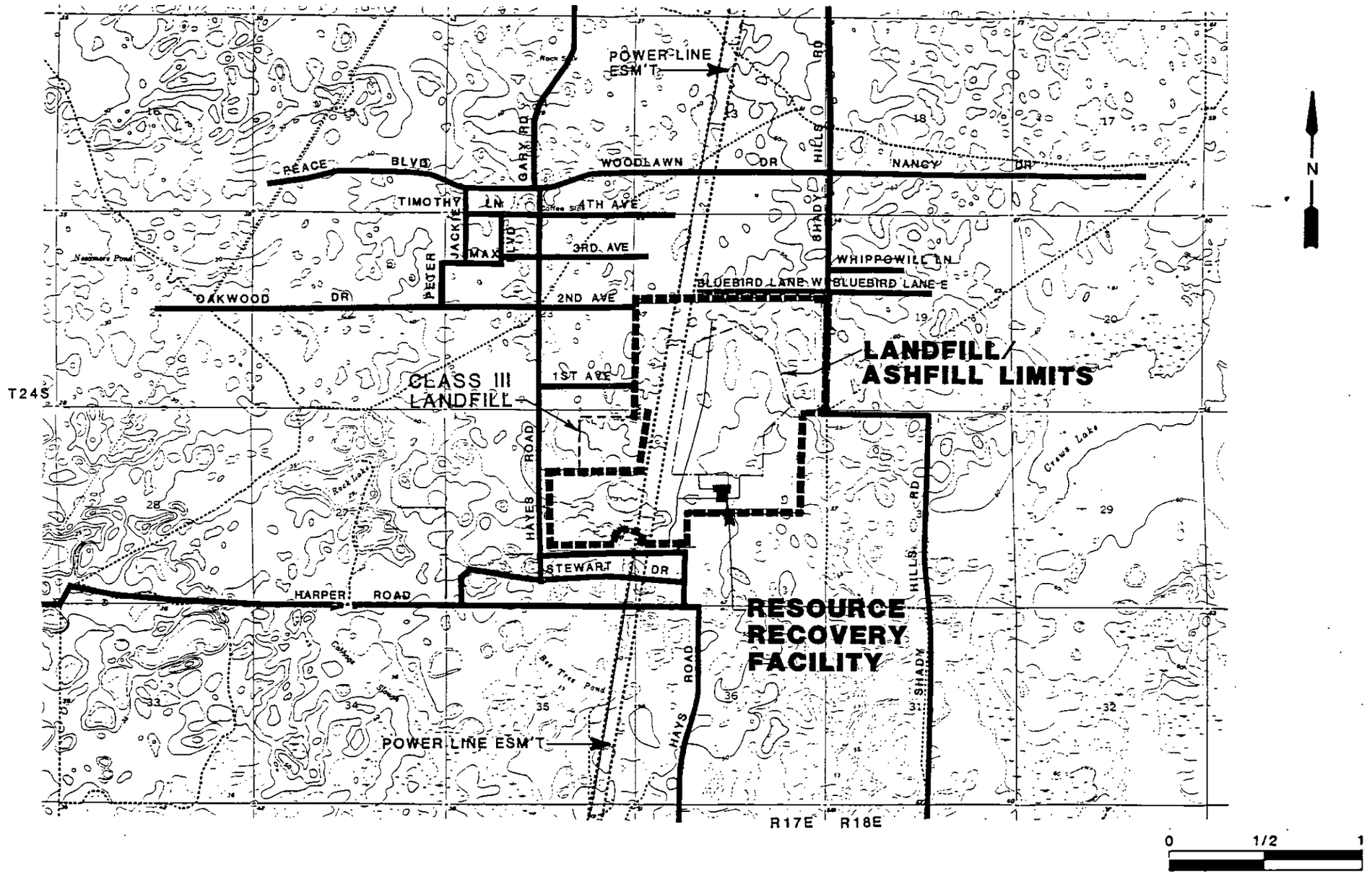
Abutting and adjacent properties are shown in Figure 2-4. All land abutting the site is under private ownership. Abutting properties east and west of the site consist primarily of vacant grassland and small cattle farms. A portion of the west boundary abutts the county-owned site for a proposed Class III landfill. To the north and south, abutting properties are rural areas containing pockets of low density, residential areas. Properties abutting to the southeast were once tree farms, but are no longer managed. Florida Power Corporation's Hudson substation occupies 6.24 acres of land abutting the south property line and the Florida Power Corporation easement. A complete list of landowners with property abutting the project site may be found in Appendix 10.6.

The project site encompasses unimproved grassland, planted pine areas, and isolated ponds. Wooded areas are scattered throughout the site, while wetland areas are found mainly in the southwest section of the property. There are no buildings on the property. Figure 2-5 illustrates the existing condition of the site and surrounding area.



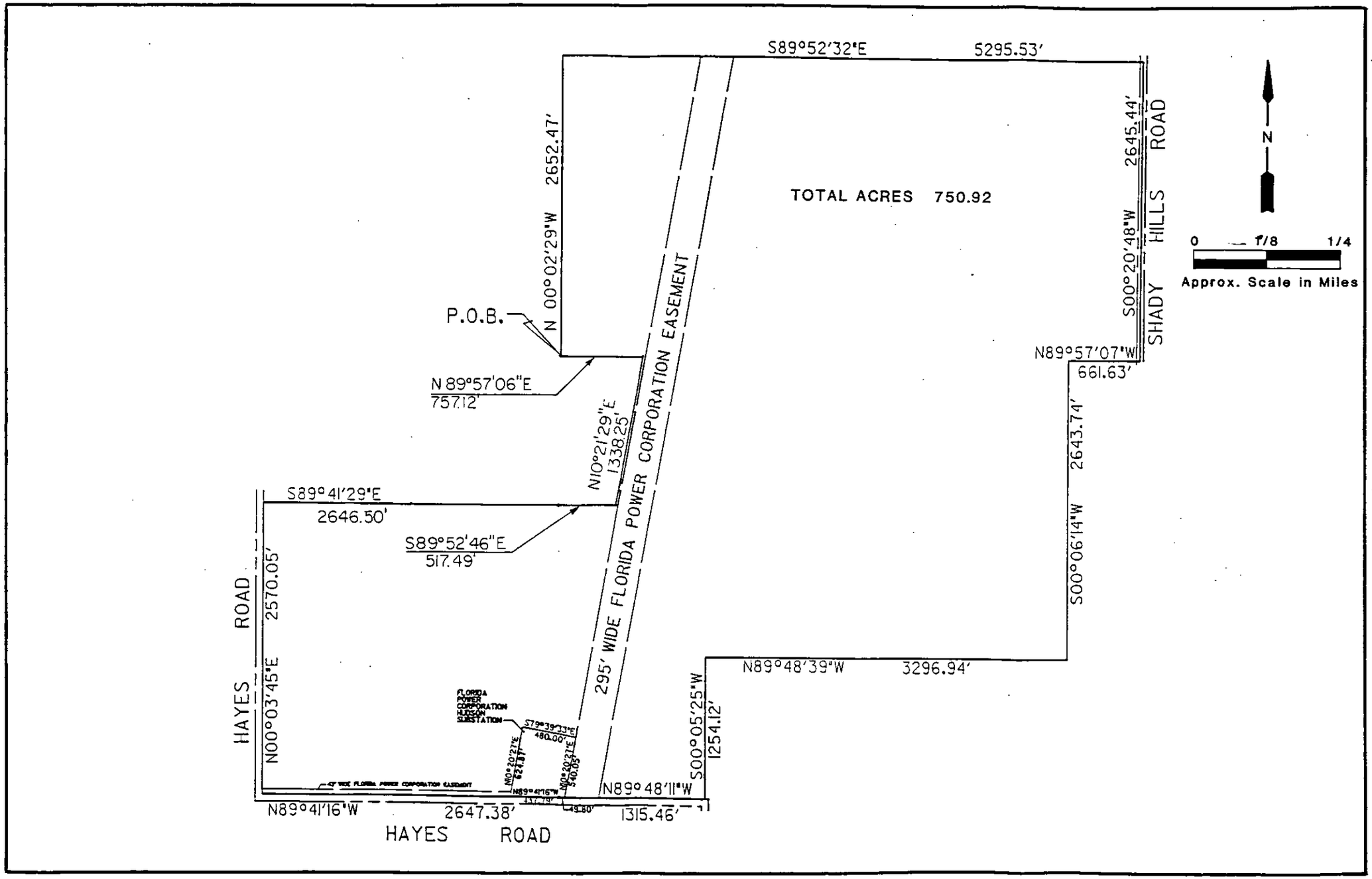
Pasco County Resource Recovery Program
General Location Map

FIGURE 2-1



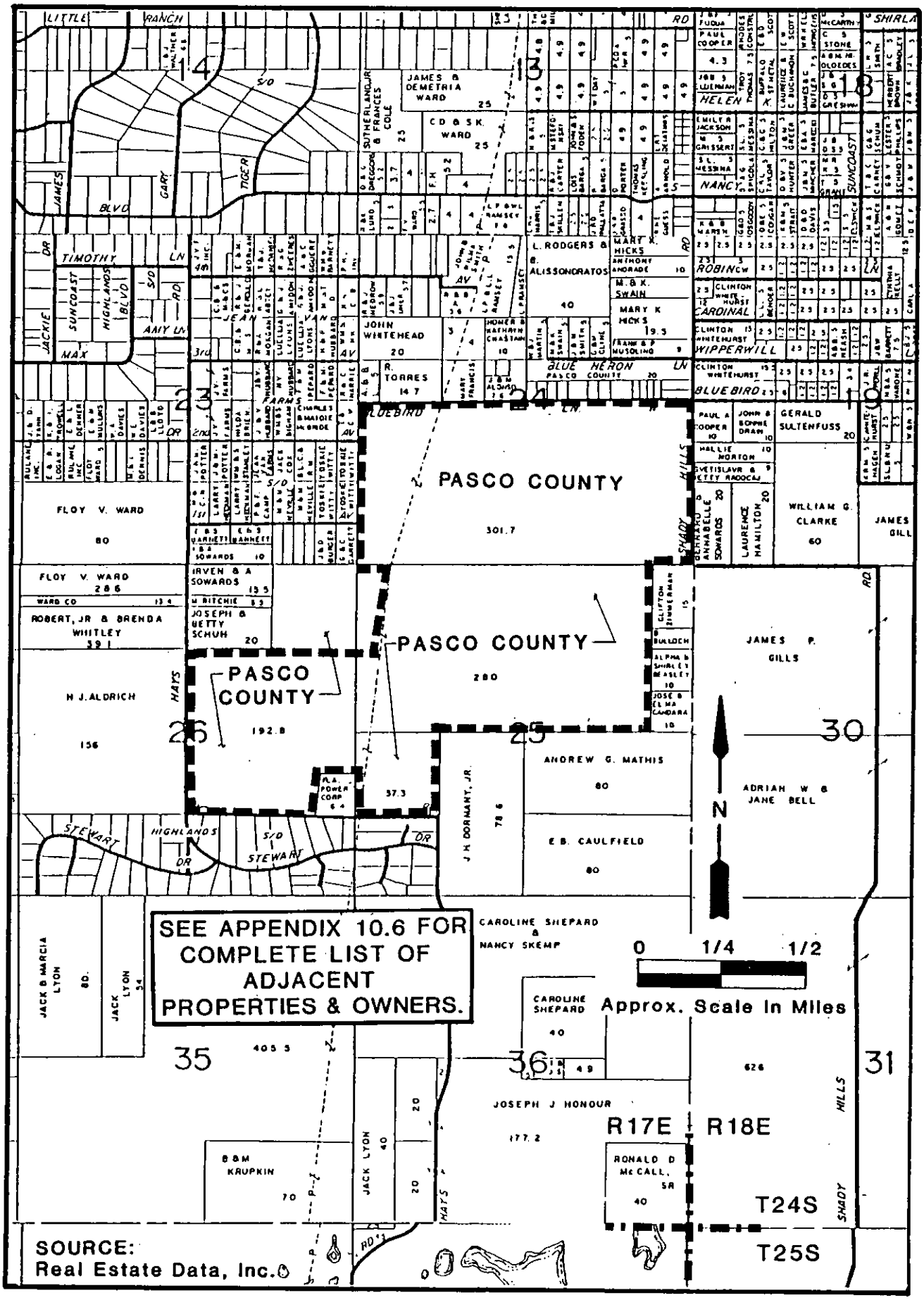
Pasco County Resource Recovery Program
Site Location

FIGURE 2-2



Pasco County Resource Recovery Program
Boundary Survey

FIGURE 2-3



Pasco County Resource Recovery Program
Abutting & Adjacent Properties

FIGURE 2-4

2.1.3 SITE MODIFICATION

As presented in the General Site Development Plan (Figure 2-6), the resource recovery facility has been situated in the southeast corner of the site. The site layout provides a short entrance from Hays Road, but a sufficient vegetation buffer zone to block the view of the facility from the road.

The facility structures will account for less than 0.5 percent of the site acreage. The ashfill/landfill will use 26 percent of the site. Over 60 percent of the site will remain unused. Table 2-1 summarizes the proposed land uses.

2.1.4 100-YEAR FLOOD ZONE

A very small portion of the project site is within the flood zone, however, no portion of the site to be used as a landfill/ashfill or resource recovery facility is located in the 100-year flood zone as defined by the Federal Emergency Management Agency. The 100-year flood zone in the vicinity of the project site is shown on Figure 2-7.

2.2 SOCIO-POLITICAL ENVIRONMENT

2.2.1 GOVERNMENTAL JURISDICTIONS

Within a 5-mile radius of the proposed facility, the area is unincorporated. The nearest incorporated areas, Port Richey and Weeki Wachee, are located 10 miles from the site.

In order to identify local, regional, state and federal areas of concern, the agencies listed in Table 2-2 were contacted. Information provided by each agency is summarized in the table.

The Florida Natural Areas Inventory provided a list of special plants and animals. A special element is any component of the natural environment, such as an animal or plant species, that is limited in abundance, range or habitat. Known occurrences of special elements have been recorded in the

Measurement Programs

Plant species were surveyed using aerial photographs and a series of onsite visits. These surveys were conducted from October 1986 to March 1987. For each plant community type identified, an onsite visit was made. Random walking surveys were taken, specimens collected, and a species list compiled. Dominance was estimated visually. Total observer hours for this survey exceeded 50 hours. The manuals used as ecological and taxonomic guides are listed in the reference section at the end of this permit application.

Wildlife surveys were also conducted between October 1986 and March 1987. Observations were made on foot and from vehicles. Random walkover surveys were made of all habitat types on the site. Species were identified by direct observation, song or call, scats, tracks, burrows or nest sites, and skeletal remains. More than 50 observer hours were spent completing this study. The manuals used as ecological and taxonomic guides are listed in the reference section at the end of this permit application.

2.3.7 METEOROLOGY AND AMBIENT AIR QUALITY

Meteorology

The Pasco County resource recovery facility will be located in Pasco County, on the west coast of south central Florida. The climate of this region is influenced by the surrounding waters, since no part of Florida is more than 70 miles from salt water. Interior topography ranges from 100 to 200 feet above msl. Summers are long, warm and relatively humid. Summer temperatures are similar throughout the state. Winters are mild, punctuated by periods of cool to cold air. Temperatures in the northern part of the state average 13°F cooler than in the south. The winds are influenced by the easterly winds, particularly in the south. Elsewhere land/sea breeze effects and convectional forces inland make prevailing winds erratic. Rainfall is distributed throughout the year with the 4-month period from June to September receiving slightly more rain. Precipitation is usually in the form of local showers and thundershowers.

Occasionally, tropical storms produce substantial amounts of rain over large areas. Climatological data from the Tampa International Airport is presented in Table 2-21.

Atmospheric Dispersion

Atmospheric factors which aggravate pollution rarely occur at any specific location in Florida. Air is usually sufficiently unstable to disperse pollutants, as demonstrated by the frequent convective development. The easterly winds sweep across the peninsula, particularly in the south. Five years of sequential meteorological data were used (1970 to 1974) for the air quality model analysis contained in the PSD permit application (see Volume III - Air Quality). The parameters which describe the dispersion characteristics are wind speed, wind direction, atmospheric stability, and mixing heights.

Wind speed data for the 5-year period have been organized into 6 wind speed categories, distributed over the 16 wind direction sectors, and displayed in a wind rose plot showing average, seasonal, and diurnal variations. The frequency of occurrence of a particular wind speed class in a particular wind direction as plotted on the wind rose is proportional to the size of the telescope segment. As shown in Figure 2-26, the prevailing wind direction is from the east. Wind speeds of 1 to 5 miles per second (2 to 11 miles per hour) occur most frequently from this direction. Other wind direction maxima are the east/northeast and the west. Wind speeds in the 5 to 8 miles per second (11 to 18 miles per hour) class most frequently come from the west. Figure 2-27 shows the location of the site and prevailing wind direction relative to surrounding communities. Seasonal wind patterns are displayed on Figure 2-28. Spring and summer seasons are strongly influenced by winds from the east and west, with lighter winds more likely from the east, and stronger winds more likely from the west. During the summer, winds are more likely to come from the southeastern quadrant than any other quadrant. During the fall and winter seasons, westerly winds diminish significantly. Winds from the northeastern quadrant dominate in the fall. The distribution of wind speeds in the winter is more uniform, but a strong easterly component in the wind direction is apparent.

TABLE 2-21

NORMALS MEANS AND EXTREMES
TAMPA INTERNATIONAL AIRPORT

TAMPA, FL **INTERNATIONAL AIRPORT** **EASTERN** **27° 58′ N** **82° 32′ W** **19 FT**

Month	Temperatures °F: Normal: Daily maximum	Daily minimum	Monthly	Extremes: Record highest	Year	Record lowest	Year	Normal Degree days Base 65 °F: Heating	Cooling	Precipitation in inches: Water equivalent: Normal	Maximum monthly	Year	Minimum monthly	Year	Maximum in 24 hrs.	Year	Snow, ice pellets: Maximum monthly	Year	Maximum in 24 hrs.	Year	Relative humidity pct: Hour (Local time) 01	07	13	19	Wind: Mean speed m.p.h.	Prevailing direction	Fastest mile: Speed mi/h	Direction	Year	Pct. of possible sunshine	Mean sky cover (tenths): Sunrise to sunset	Sunrise to sunset: Clear	Partly cloudy	Cloudy	Mean number of days: Precipitation .01 inch or more	Snow, ice pellets 1.0 inch or more	Thunderstorms	Heavy fog, visibility ¼ mile or less	Temperatures °F: Max. (b) 90° and above	32° and below	Min 32° and below	0° and below	Average station pressure mb: Elev. 33 feet m.s.l.
(a)				37		37					37		37		37		37		37		20	23	20	20	37	14	31	31		36	37	37	37	37	37	37	37	37	20	20	20	20	10
J	70.0	49.5	59.8	84	1975	27	1981	228	66	2.17	8.02	1948	1	1950	3.29	1953	0.2	1977	0.2	1977	85	86	59	73	8.8	N	35	29	1959	65	5.6	10	10	11	6	0	1	6	0	0	2	0	1019.9
F	73.0	52.4	60.8	88	1973	29	1958	186	68	3.04	7.95	1963	0.21	1950	3.66	1981	T	1951	T	1951	83	86	56	69	9.4	E	50	32	1954	66	5.5	9	9	10	7	0	2	3	0	0	1	0	1019.1
M	76.2	56.1	66.2	91	1949	29	1980	67	124	3.46	12.64	1959	0.06	1956	5.20	1960	T	1980	T	1980	83	86	55	67	9.7	S	43	29	1956	73	5.5	10	10	11	7	0	3	5	0	0	*	0	1017.5
A	81.6	61.1	71.6	93	1975	40	1971	0	202	1.82	6.59	1957	T	1981	3.75	1951	0.0		0.0		82	87	51	61	9.5	ENE	37	29	1961	75	5.0	11	11	8	5	0	3	1	0	0	0	0	1017.2
M	87.1	67.2	77.1	98	1975	49	1971	0	375	3.38	17.64	1979	0.17	1973	11.64	1979	0.0		0.0		82	86	53	62	8.9	E	46	36	1958	75	5.2	10	12	9	6	0	6	1	7	0	0	0	1015.5
J	89.5	72.3	80.9	98	1977	61	1972	0	477	5.29	13.75	1974	1.86	1951	5.53	1974	0.0		0.0		84	87	60	69	8.2	E	47	31	1964	67	6.2	5	14	11	12	0	14	*	15	0	0	0	1016.1
J	90.0	74.2	82.2	97	1964	63	1970	0	533	7.55	20.59	1960	3.63	1981	22.11	1960	0.0		0.0		85	88	63	73	7.4	E	38	32	1963	62	6.7	2	16	13	16	0	21	*	20	0	0	0	1017.6
A	90.3	74.2	82.2	98	1975	67	1973	0	533	7.66	16.59	1949	2.35	1952	5.37	1949	0.0		0.0		87	91	65	76	7.2	ENE	36	11	1961	60	6.7	3	16	12	17	0	21	*	20	0	0	0	1017.3
S	88.5	72.8	80.9	96	1972	57	1981	0	477	6.23	13.98	1979	1.28	1972	6.67	1950	0.0		0.0		86	91	62	75	8.0	ENE	56	34	1960	60	6.5	4	14	12	13	0	12	*	14	0	0	0	1015.3
O	83.7	65.1	74.5	94	1959	40	1964	0	295	2.34	7.34	1952	0.16	1979	2.54	1968	0.0		0.0		85	88	57	71	8.7	NNE	38	02	1953	64	5.2	11	11	9	7	0	3	1	2	0	0	0	1016.6
N	76.9	56.4	66.7	90	1971	23	1970	65	116	1.87	6.12	1963	T	1960	4.22	1963	0.0		0.0		86	88	57	74	8.5	NNE	40	29	1963	65	5.0	12	9	9	5	0	1	3	*	0	*	0	1018.6
D	71.6	50.9	61.3	86	1978	18	1962	173	56	2.14	6.66	1950	0.21	1956	3.28	1969	0.0		0.0		85	88	59	74	8.7	N	45	36	1953	62	5.6	10	9	12	7	0	1	4	0	0	1	0	1019.8
YR	80.4	62.5	72.0	98	JUN 1977	18	DEC 1962	739	3324	46.73	20.59	JUL 1960	1	APR 1981	22.11	JUL 1960	0.2	JAN 1977	0.2	JAN 1977	84	88	58	70	8.6	E	47	31	JUN 1964	66	5.7	97	141	127	107	0	87	23	77	0	4	0	1017.5

NOTE: NORMAL COOLING DEGREE DATA PUBLISHED IN THE 1982 ANNUAL WERE FOR THE 1951-1960 PERIOD.

NORMALS, MEANS, AND EXTREMES TABLE NOTE(S):

(a) Length of record, years, through the current year unless otherwise noted, based on January data.
(b) 70° and above at Alaskan stations.
* Less than one half.
T Trace.
BLANK entries denote missing or unreported data.

NORMALS - Based on record for the 1951-1980 period.
MEANS - Length of record in (a) is for complete data years.
EXTREMES - Length of record in (a) may be for other than complete or consecutive data years. Date is the most recent in cases of multiple occurrence.
WIND DIRECTION - *Numerals indicate tens of degrees clockwise from true north. 00 indicates calm.*
FASTEST MILE WIND - Speed is fastest observed 1-minute value when direction is in tens of degrees.

Means and extremes above are from existing and comparable exposures. Annual extremes have been exceeded at other sites in the locality as follows:
Wind
Fastest Mile: 84 in Sep. 1935.

SOURCE: GALE Research Co., 1985, "Climate of the States", Detroit, MI

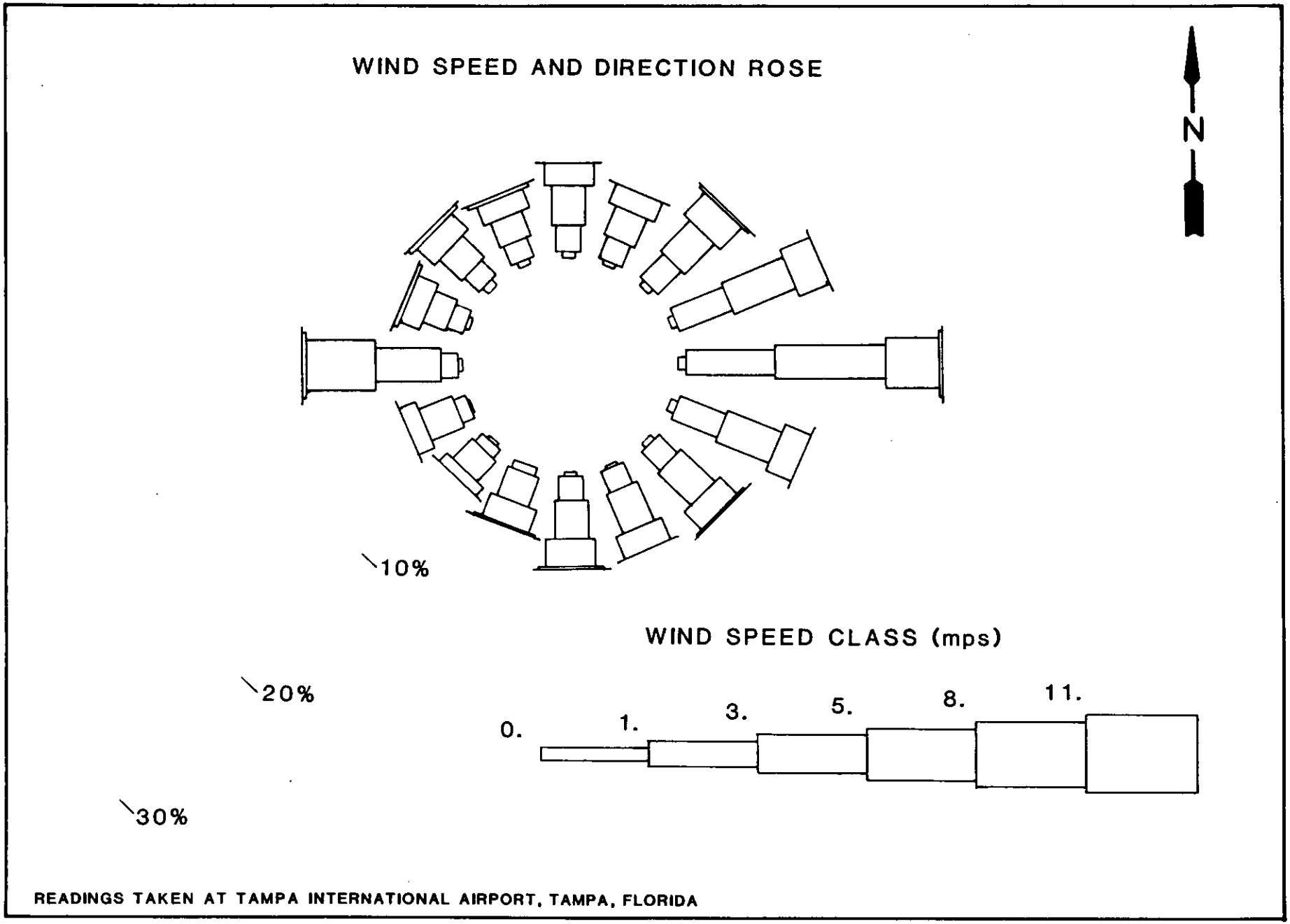
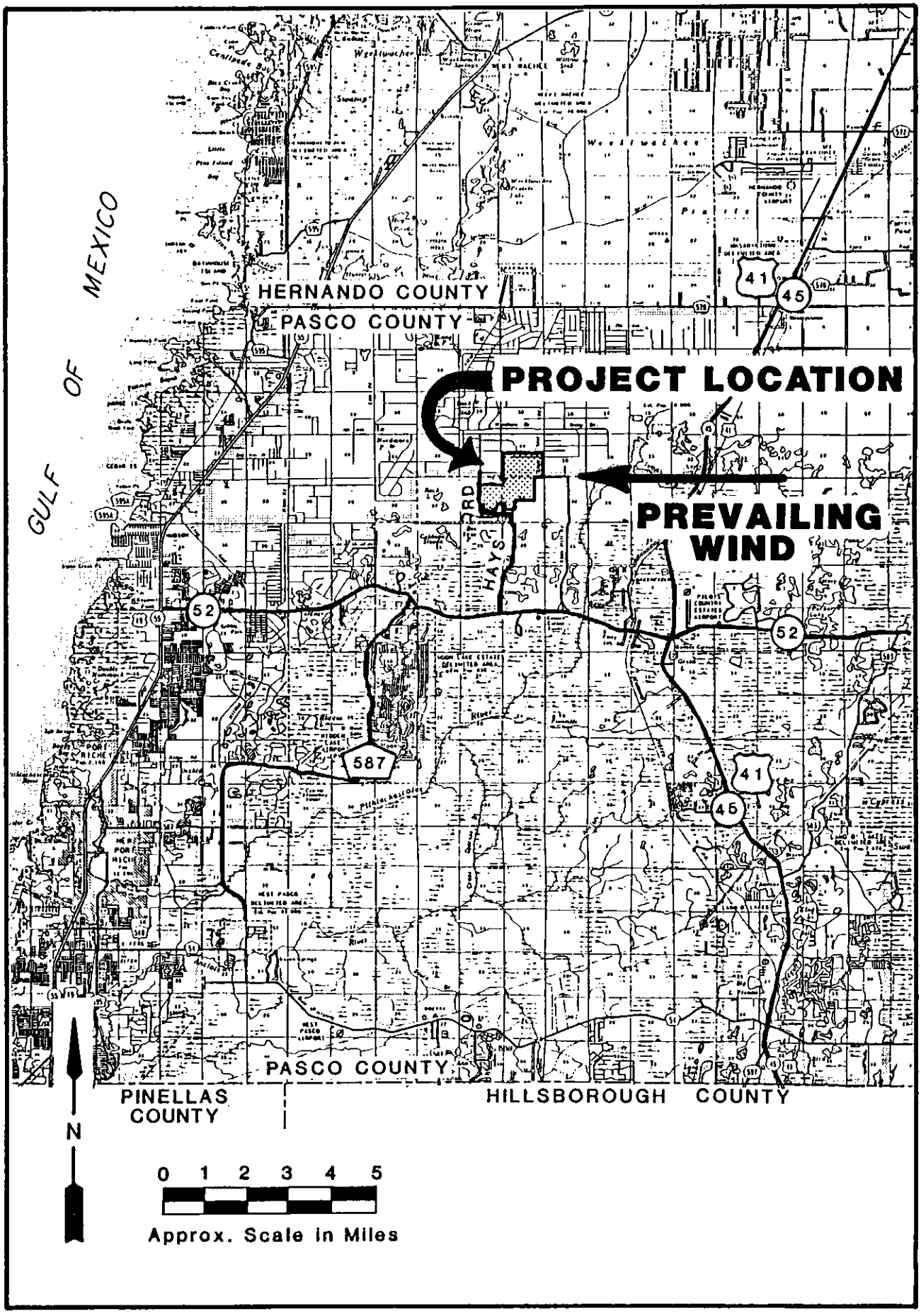


FIGURE 2-26

Pasco County Resource Recovery Program
Annual Wind Rose (1970-1974)



Pasco County Resource Recovery Program
Area Map With Prevailing Wind Direction
(1970-1974)

FIGURE 2-27

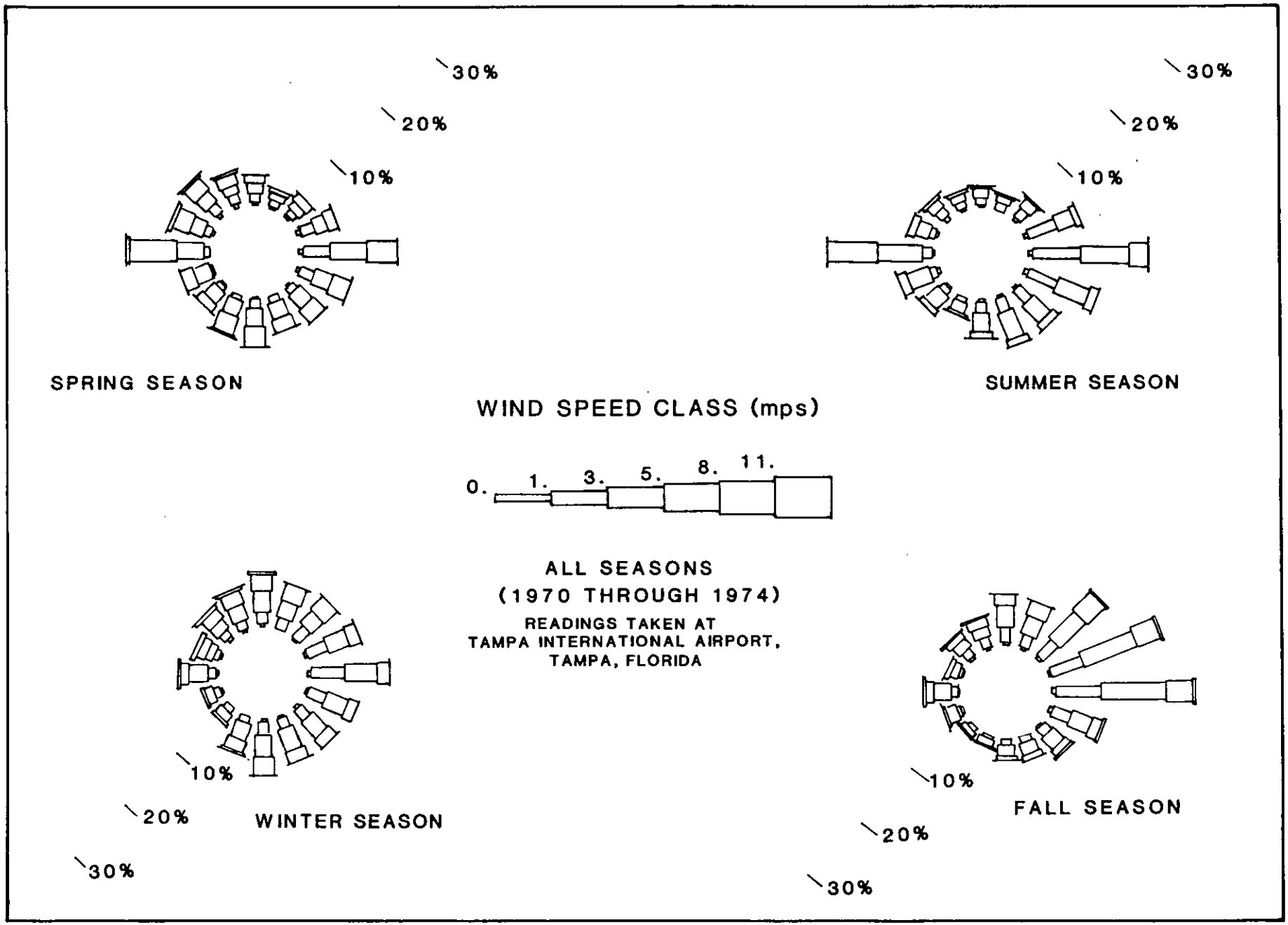


FIGURE 2-28

Pasco County Resource Recovery Program
Annual Wind Rose

Diurnal wind direction roses are presented in Attachment B of Volume III - Air Quality. In the combined diurnal wind direction distribution, the west direction and the south/southwest through west/southwest directions show a diurnal pattern. This pattern shows a maximum frequency of occurrence during the early afternoon and a minimum frequency during the early morning hours. The sectors to the south/southwest to west/southwest are influenced by Old Tampa Bay, located near the airport. The western sector shows the influence of the Gulf of Mexico, although the airport is several kilometers inland. Since the magnitude of the western sector is much larger than the southwestern sectors, the Gulf of Mexico influence has a greater effect than the Old Tampa Bay area on the regional wind pattern, although the bay is much closer.

The spring and summer diurnal wind roses show not only the daily land/sea breeze effects, but also the seasonal variation as the westerly direction exceeds 30 percent during the summer. The strong east/southeast to south sectors show the movement of warmer air northward across the state.

Virtually no land/sea breeze pattern is evident during the fall and winter. The fall is strongly influenced by winds coming from the northeast, as cool air begins to move southward. During the winter, no clear diurnal pattern is evident, but an easterly component to the general seasonal pattern is shown.

The wind speeds and directions for the 5 years of meteorological data are stratified by the stability Classes A through F in Attachment B of Volume III - Air Quality, where Class A stability is unstable, and Class F is stable. Classes A and B represent the most unstable categories. Each of these cases occurs approximately 5 percent of the time, since mixing is promoted which, in turn, promotes a more stable atmosphere. Class A stability occurs during the day when skies are clear and the incoming solar radiation is strong—conditions which are more likely during the summer. Tampa meteorological data show that Class A stability is strongly associated with light easterly winds. Class B stability occurs during the day when the incoming solar radiation is moderate, conditions typical of partly cloudy days, or during the fall when sunlight is less direct. Class

B conditions are more frequently associated with moderate westerly winds. During the day when the cloud cover is more complete or the incoming solar radiation is slight, Class C—slightly unstable—conditions occur. Winds associated with this case are most likely moderate to strong westerly winds. Neutral stability Class D occurs during overcast conditions during the day or night, or when speeds are strong and the stability category is most likely to occur. These conditions are most frequently associated with easterly and westerly winds. Classes E and F represent the slightly stable and stable conditions. These conditions occur at night when the sky is partly cloudly or clear. The slightly unstable case is associated with moderate easterly winds. The stable case is associated with light easterly winds.

Mixing height is the height above the surface through which vigorous vertical mixing occurs. Although the mixing height varies throughout the day, the morning and afternoon values presented in Table 2-22 represent the average minimum and maximum heights, respectively. Certain atmospheric conditions make the calculation of mixing height difficult. These conditions include periods of marked cold air advection, significant precipitation, and missing wind speed or temperature data. These periods were not included in the calculation of the average mixing heights presented.

Ambient Air Quality

Pollutants subject to Prevention of Significant Deterioration review (PSD), and emitted at "significant levels" are subject to ambient air quality monitoring [FAC 17-2.500(5)(f)], to define background concentrations. These ambient levels are then used as a basis for establishing whether the proposed emissions contribute to the violation of ambient air quality standards. The pollutants subject to this monitoring provision are the criteria pollutants for which ambient standards have been set by the Florida Department of Environmental Regulation, and other noncriteria pollutants subject to PSD. The significant emission levels and proposed emission levels for these pollutants are listed in Table 2-23.

TABLE 2-22

HOLTZWORTH MIXING HEIGHTS FOR THE TAMPA AREA

Period	Morning (meters)	Afternoon (meters)
Annual	493	1359
Spring	503	1523
Summer	656	1460
Fall	419	1401
Winter	394	1052

SOURCE: Holtzworth, G.C. January 1972. Mixing Heights, Wind Speeds, and Potential for Urban Air Pollution Throughout the Contiguous United States. U.S. Environmental Protection Agency AP-101.

TABLE 2-23

COMPARISON OF SIGNIFICANT EMISSION RATES
AND FACILITY POTENTIAL EMISSIONS

Pollutants	Significant[a] Emission Rates (tons/year)	Potential[b] to Emit (tons/year)
Particulate matter		
(Total suspended particulate)	25	68
(Inhalable particulate, PM_{10})	15	68
Carbon monoxide (Annual)	100	103
Nitrogen oxides	40	1,351
Sulfur dioxide	40	471
Ozone (VOCs)	40	44
Lead	0.6	3.4
Beryllium	0.0004	0.000285
Mercury	0.1	3.07
Inorganic Arsenic	--	1.91×10^{-2}
Fluorides	3	17
Sulfuric acid mist	7	75
Vinyl chloride	1	--[c]
Asbestos	0.007	--[c]
Total reduced sulfur (including H_2S)	10	--[c]
Reduced sulfur (including H_2S)	10	--[c]
Hydrogen sulfide	10	--[c]
Hydrogen chloride[d]	--	267
Dioxin (as 2,3,7,8 TCDD toxic equiv.)[d]	--	7.45×10^{-6}

[a] FAC 17.2 Part V Table 500.2 or 40 CFR 52.21 (b)(23)(i).

[b] Emission estimates at 100 percent system capacity and availability.

[c] Emissions of these pollutants are negligible.

[d] Not a PSD regulated pollutant.

Sources may be exempt from air quality monitoring if the impact of a given pollutant falls below the de minimis monitoring concentration [FAC 17-2.500(3)(e)]. The air quality impact analysis was done using sequential meteorological data. From this analysis, the highest, second-highest concentrations were compared to the appropriate de minimis concentration (Table 2-24). Less than de minimis levels were predicted for each of the PSD regulated pollutants emitted from the facility.

There are numerous State and Local Air Monitoring Stations (SLAMS) and National Air Monitoring Stations (NAMS) operating in counties abutting Pasco County. A majority of the monitors used to develop criteria pollutant background concentrations for the Pasco County site are located in Hillsborough and Pinellas Counties, toward the south and southeast. Background concentrations display an inherent conservatism due to urban emissions influencing these monitoring sites, but not the proposed site.

There are no ambient air monitoring stations within 10 kilometers of the Pasco County resource recovery facility site. The proposed site is an area generally free from impacts of other major point and area sources. The low density of industry within 25 kilometers of the proposed site suggests that there is an associated low probability of impact on air quality by such sources near the Pasco County site. Regional background concentrations for several pollutants were developed from available monitoring data from the surrounding counties (see Table 2-25). Most of the monitors for total suspended particulates and sulfur dioxide are sited near major electric utilities. Monitors for nitrogen dioxide, lead, and carbon monoxide are located in congested urban areas. Therefore, the estimates of background concentrations for the proposed site, as shown in Table 2-26, are conservative because they are based on monitors that are influenced by major point and area pollution sources. Additional information about the development of the background concentrations is presented in Section 5.0 of the PSD permit application (see Volume III - Air Quality).

TABLE 2-24

COMPARISON OF PREDICTED CONCENTRATIONS TO SIGNIFICANT IMPACT AND DE MINIMIS MONITORING LEVELS

(ug/m^3)

Pollutant Level	Averaging Time	Rank[b]	Maximum Predicted Concentration	Significant Impact Level	De Minimis Monitoring
Sulfur Dioxide	Annual	H	0.36	1	—
	24-hour	HSH	2.99	5	13
	3-hour	HSH	11.43	25	—
Particulate Matter	Annual	H	0.10	1	—
	24-hour	HSH	0.87	5	10
Nitrogen Dioxide	Annual	H	1.03	1	14
Carbon Monoxide	8-hour	HSH	7.75	500	575
	1-hour	HSH	20.0	2,000	—
Lead[a]	24-hour	HSH	0.09	—	0.1[a]
Mercury	24-hour	HSH	0.0225	—	0.25
Beryllium	24-hour	HSH	$2.9X10^{-6}$	—	$5.0X10^{-4}$
Fluoride	24-hour	HSH	0.0124	—	0.25

[a] The de minimis monitoring level for lead is a quarterly averaged value. The 24-hour average concentration was substituted as a conservative estimate of the quarterly value.

[b] Abbreviations: H = Highest concentration
HSH = Highest, second-highest concentration

TABLE 2-25

AMBIENT SULFUR DIOXIDE MONITORING DATA USED TO DERIVE BACKGROUND CONCENTRATIONS FOR PROPOSED PASCO COUNTY RESOURCE RECOVERY FACILITY DISPERSION MODELING STUDY

1984, 1985, 1986 Monitored Concentrations (ug/m^3)

County	Address	SAROAD No.	Monitor Reference Letter	3-Hour Avg. HSH	24-Hour Avg. HSH	Annual+ H	Monitoring Location Relative to Pasco RRF Site++ Distance (km)	Azimuth (degrees)
Hillsborough	Apollo Beach/Apollo Beach	1800084G02*	A	548,521,397	97,85,91	13,13,13	69.3	167.7
	5012 Causeway, Tampa	1800095G02	B	(456),376,360	(103),83,84	15,21,22	52.2	163.3
	Coast Grd. Sta., Davis Is.	4360035G02	C	393,287,350	82,67,77	19,14,20	50.3	168.8
	Ballast. Pt. Prk, Interbay Blvd.	4360053G02	D	383,265,340	69,69,84	16,15,20	54.3	172.5
	HCEPC OFC., Ybor City	4360052G01*	E	474,303,467	127,82,133	16,14,(26)	47.1	166.0
	Big Bend Road, Hillsb.	1800021G02*	F	437,637,475	82,134,99	13,15,16	67.2	163.5
Citrus	Crystal Rvr./Curtis Tool Co.	0580002F02	G	261,212,x	59,48,x	12,x,x	64.2	355.2
	Crystal Rvr./Twin Rvr. Marina	0580003J02	H	114,144,104	23,36,17	5,4,3	58.2	357.9
	East of FPC Plt./Crystal River	0580005J02	I	310,323,176	59,77,36	7,6,6	73.7	354.4
Pinellas	Pinellas Prk./11500 43rd Av.	3620002G05	J	266,258,202	71,61,75	10,10,11	57.5	193.7
	Derby Lane 10100 San Mar., St. Petersburg	3980023G02*	K	406,362,497	95,85,121	16,16,19	56.7	187.0
	303A Anclotte Rd., Tarpon Springs	4380001G02	L	96,92,122	28,30,28	5,6,6	31.2	223.6
	Brooker Creek Prk., Tarpon Springs	4380002G03	M	196,135,211	44,29,50	8,7,8	34.2	204.6

Data Source: Florida air quality statistical reports for 1984, 1985, and 1986 (Florida BAQM, Air Monitoring and Analysis Section)

Abbreviations:
H = Highest
HSH = Highest, Second-Highest

Symbols:
+ = Arithmetic mean
* = Monitor impacted by local industry/utilities; not representative of general air quality
x = Less than 75% annual data collection efficiency
( ) = Selected ambient background SO_2 concentration (for given averaging period) proposed for Pasco Site
++ = Pasco Site stack coordinates are approximately 347.12 UTM-East, 3139.23 UTM-North

TABLE 2-26

PROPOSED BACKGROUND CONCENTRATIONS OF CRITERIA POLLUTANTS FOR THE PASCO COUNTY RESOURCE RECOVERY FACILITY SITE*
(ug/m^3)

Pollutant	Averaging Periods					
	1-Hour	3-Hour	8-Hour	24-Hour	Quarterly	Annual
SO_2	—	456[a] (35%)	—	103[a] (28%)	—	26[b] (43%)
TSP	—	—	—	87[c] (58%)	—	43[c] (73%)
PM_{10}	—	—	—	87[g] (58%)	—	45[g] (90%)
NO_2	—	—	—	—	—	39[h] (39%)
Pb	—	—	—	—	0.4[e] (27%)	—
CO	5,153[f] (13%)	—	1,145[f] (11%)	—	—	—
O_3	222[h] (94%)	—	—	—	—	—

Symbols:

H = Highest concentration
HSH = Highest, second-highest concentration
( ) = Number in parentheses denotes percentage of FAAQS consumed. PM_{10} is compared to the NAAQS.

Superscripts:

*Selection based on 1984-1986 ambient monitoring data.

[a] HSH, SAROAD No. 1800-095-G02, 1984; 5012 Causeway, Tampa, Hillsborough County.

[b] Highest Arithmetic Mean, SAROAD No. 4360-052-G01, 1986; HCEPC OFC, Ybor City, Hillsborough County.

[c] See Table 5-6 in PSD permit application (Volume III - Air Quality).

[d] SAROAD No. 4360-052-G01 1986; HCEPC OFC, Ybor City, Hillsborough County; Highest annual arithmetic mean for a continuous monitor with >75% data capture for 1986.

[e] SAROAD No. 1800-082-G02, 1986; County Maintenance Barn #82, Orient Road, Hillsborough County; Highest 3-month average concentration for 1986.

[f] Assumed 4.5 ppm (1-hour) and 1 ppm (8-hour) backgrounds based on data from the Florida Indirect Source Modeling Interim Guideline.

[g] Assumed that the TSP background concentrations are entirely PM_{10}.

[h] SAROAD No. 4360-035-G02, 1986; Coast Guard Station, Davis Island, Tampa, Hillsborough County.

Measurement Programs

Florida has been monitoring air quality since 1962 when the Department of Health began monitoring particulate matter at Miami International Airport. In January 1972, Florida submitted a plan to the U.S. Environmental Protection Agency (EPA) for establishing an air quality surveillance system in accordance with EPA regulations published in Section 420.17 of 42 CFR Part 420. The surveillance system established as a result of that plan consists of 204 stations.

Sampler location is determined by the monitoring objectives and siting criteria contained in 40 CFR 58 Appendix D, Network Design for State and Local Air Monitoring Stations. Continuous samplers run 24 hours per day. Manual samplers run for 24 hours every 6th day. Missing values are carefully documented and makeup days may be required in manual networks to ensure that reporting requirements are met. The measurement method for each pollutant is listed in Table 2-27. Each sampler is calibrated on a regular basis. Calibration standards are referenced to the National Bureau of Standards - Standard Reference Materials (NBS-SRM). Calibrations are performed at least once each quarter to test the instrument over its full operating range. Final unadjusted calibrations are performed prior to maintenance, before instrument shutdown, when biweekly span checks exceed ±15 percent error, and after an air quality exceedance. Confidence limits of precision and accuracy are assigned to all measurements with federally approved reference or equivalent methods/monitors. EPA's audit covers facilities, equipment, procedures, documentation, and personnel.

2.3.8 NOISE

A technical noise analysis was performed for the proposed resource recovery facility. The noise study and related correspondence are contained in Appendix 10.12 (see Volume II). The study explains the methodologies used in estimating the operational impacts of the facility and the results of the analysis. Ambient noise levels were measured at four locations in the

TABLE 2-27

AIR POLLUTION MEASUREMENT METHODS

Parameter	Method or Reference
Carbon Monoxide	Title 40 Code of Federal Regulations (40 CFR), Part 50, Appendix C Beckman Model 866; EPA No. RFCA-0876-12
Dust (Microscopy)	EPC - Nikon Polarization Microscope
Dustfall	Journal of Air Pollution Control Association July 66, Vol. 16, No. 7
Nitrogen Dioxide:	
Bubbler	EPA No. EON-1277-026 page 62971 Federal Registry Vol. 42
Continuous	40 CFR, Part 50, Appendix F 1. Monitor Labs Model 8440; EPA No. RFNA-0677-021 2. Bendix Model 8101-B Analyzer
Ozone	40 CFR, Part 50 Appendix D 1. Bendix Model 30002; EPA No. RFOA-0176-007 2. Dasibi Model 1003 AH; EPA No. EQOA-0577-019
Sulfur Dioxide:	
Bubbler Continuous	40 CFR, Part 50, Appendix A 1. Thermo Electron Model 43; EPA No. QSA-0276-009 2. Philips Model PW9755; EPA No. EQSA-0676-010
Suspended Particulate:	
Total	40 CFR, Part 50, Appendix B
Sulfates	EPC - Turbidimetric Method
Lead	40 CFR, Part 50, Appendix G

SOURCE: Florida Department of Environmental Regulation. 1984. Florida National Air Monitoring Stations and State and Local Air Monitoring Station Network Description.

site vicinity to establish baseline conditions during day and night periods. The selection of the monitoring locations was based on the following criteria:

- Land use or zoning--specifically, an area with a significant residential population or commercial use;
- Local noise ordinances—governmental agencies have established local noise levels which may not be exceeded; and
- Sensitive receptors—concentrations of individuals who may be sensitive to an increase in noise level (i.e., hospitals, schools, nursing homes).

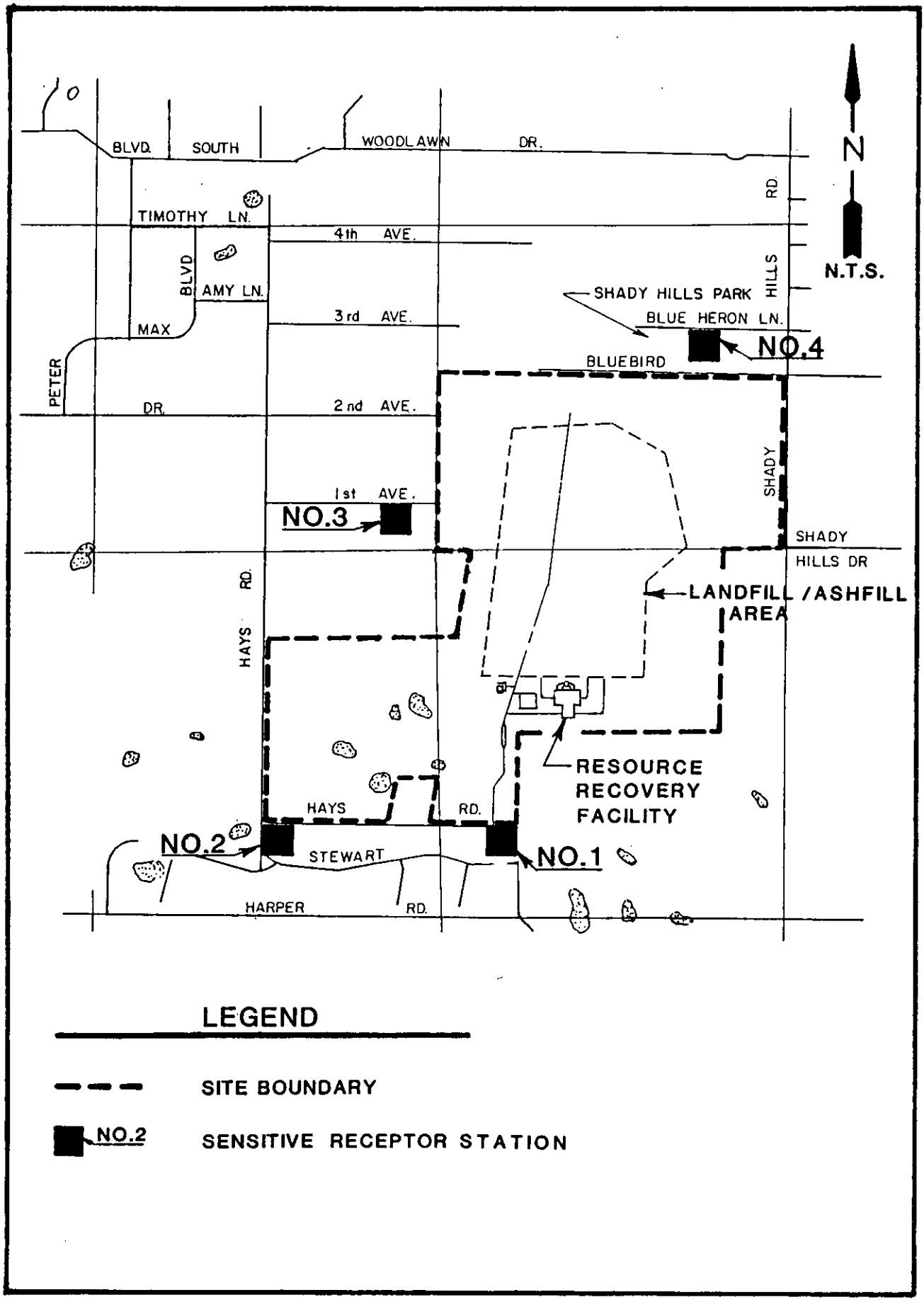
Based on the criteria detailed above, monitoring stations were placed around the site as shown in Figure 2-29. In some cases, a monitoring station was used to assess ambient sound levels at more than one sensitive receptor. Table 2-28 lists the sensitive receptors selected.

Noise levels were measured every two hours, on one day, for a 20-minute period at each site. Noise levels were measured with a Type 2 sound level meter at a height of approximately 5 feet. During each 20-minute period, 40 readings were taken from which a 1-hour equivalent continuous sound level in decibels was calculated (L_{eq}). Hourly values for these readings are presented in Table 2-29.

Noise impacts for the proposed facility were estimated using typical sound levels from other resource recovery facility operations and truck traffic. These predicted impacts were combined with existing noise levels to estimate total cumulative impact.

Pasco County has a noise ordinance which is contained in Section 16-3/4-29 of the Pasco County Code. According to this ordinance:

> No noise shall be created in an industrial zone which exceeds those levels given below, as measured on the adjacent property line.



Pasco County Resource Recovery Program
Sensitive Receptor Locations

FIGURE 2-29

TABLE 2-28

SENSITIVE RECEPTORS
NOISE MONITORING PROGRAM

Monitoring Station Number	Sensitive Receptor	Comments
1	Residence	Assess impacts to resident closest to site entrance
2	Residence	Assess impacts to residents southwest of the site
3	Residence	Assess impacts to residents northwest of the site
4	County Park	Assess impacts to participants of park activities

TABLE 2-29

HOURLY L_{eq} VALUES BY STATION

Hour	Station			
	MS-1	MS-2	MS-3	MS-4
0	42	54	47	30
3	33	41	32	43
5	40	42	36	46
7	51	52	46	54
9	45	46	48	51
10	49	50	50	47
12	50	48	48	52
13	54	54	49	48
15	55	45	51	50
18	51	50	58	58
20	53	54	50	55
22	55	50	36	44

MAXIMUM NOISE LEVELS PERMITTED IN INDUSTRIAL ZONE

Adjoining Commercial District (No Time Limit)	Adjoining Residential District	
	7:00 am–6:00 pm Monday – Saturday	6:00 pm–7:00 am Monday – Saturday and all hours of Sunday
72 dBA	66 dBA	55 dBA

In cases of impulsive noises, the noise levels mentioned above shall be increased by ten (10) dBA (as measured on a sound level meter) during the hours of 7:00 am to 6:00 pm, Monday through Saturday, but shall not exceed the levels mentioned above during the period from 6:00 pm to 7:00 am, Monday through Saturday and all day Sunday.

This ordinance applies to both adjoining commercial districts as well as adjoining residential districts. Table 2-30 compares predicted resource recovery facility noise impacts and existing background noise to county standards.

The predicted noise impacts are small in comparison to existing background noise. The resource recovery facility is expected to have a minimal impact on existing noise levels throughout the study area. A more detailed discussion of the noise monitoring program, and calculations of predicted impacts are contained in Appendix 10.12.

2.3.9 OTHER ENVIRONMENTAL FEATURES

Existing Traffic Condition

The traffic generated by the resource recovery facility will travel primarily on Hays Road and SR 52. Hays Road is a 24-foot wide, 2-lane roadway with limited shoulder room for emergency parking. It is owned and maintained by Pasco County. Hays Road runs in a north/south direction and links the project site with SR 52. In January of 1986, Hays Road was

TABLE 2-30

RESOURCE RECOVERY FACILITY NOISE IMPACTS

Station	Background Level (dBA) 24-hour	Night Only[a]	Expected Facility Level (dBA)	Combined Level (dBA)	County Standard[b]	dBA Change
1	51	—	48	53	55	2
	—	51	48	53	55	2
2	51	—	40	51	55	0
	—	51	40	51	55	0
3	50	—	43	51	55	1
	—	51	43	52	55	1
4	52	—	39	52	55	0
	—	53	39	53	55	0

[a] 6 pm - 7 am per Pasco County Code.

[b] The most restrictive standard for Sundays and nighttime was used for comparison.

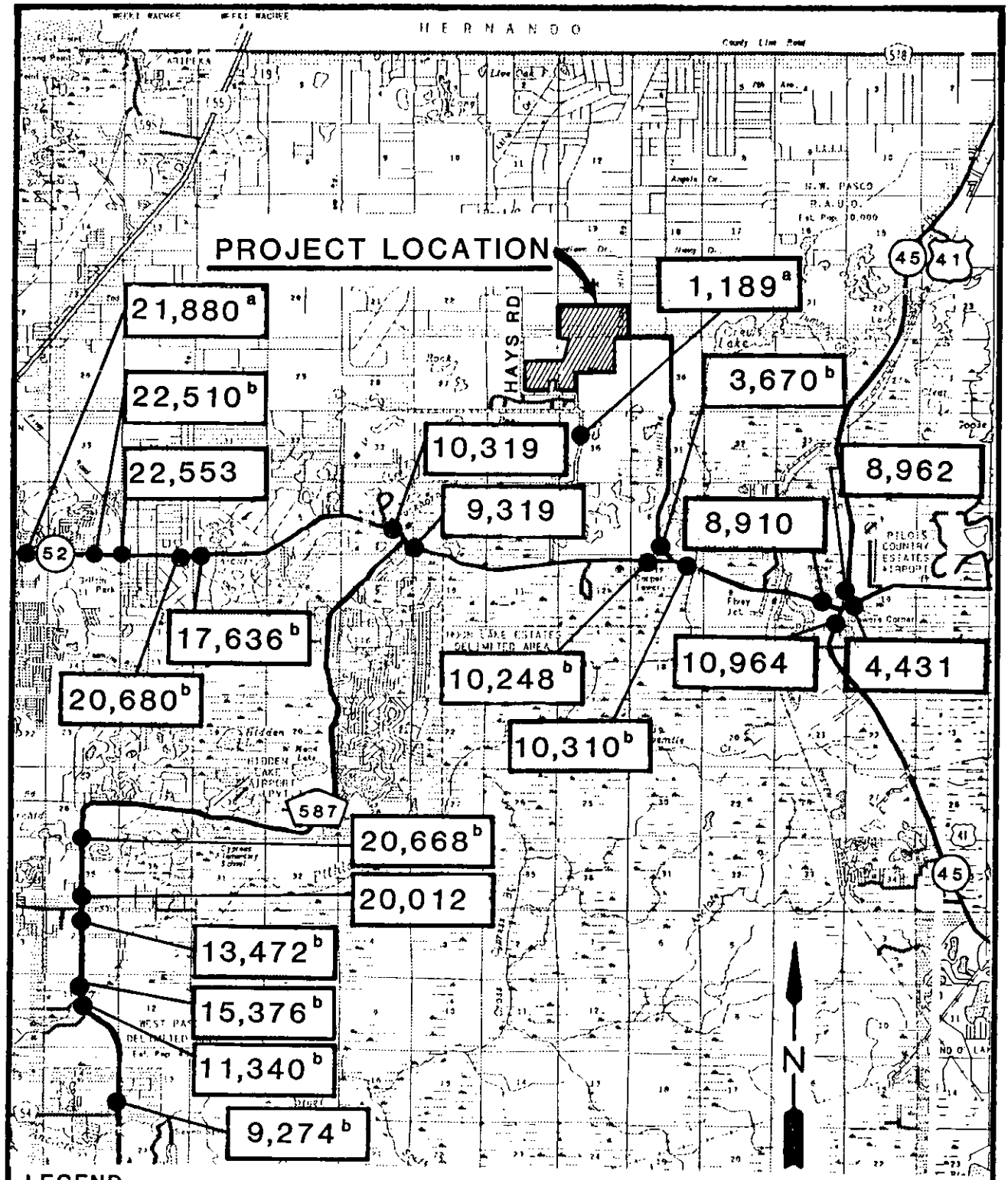
resurfaced from the intersection of Hays Road and SR 52, to the intersection of Hays Road and Harper Road (1,000 feet south of the site).

SR 52 is a major east/west roadway which traverses Pasco County from US 19 to Dade City. It is a 24-foot wide, 2-lane road with 8-foot unpaved shoulders. Major intersecting roads along SR 52 that will be impacted by the project are Moon Lake Road (587), Shady Hills Road, and US 41. Figure 2-30 shows the road network for the project area and the existing traffic flows. At the major intersections, the average annual daily traffic count is given. As shown on the figure, traffic counts increase considerably traveling west on SR 52.

Future Road Construction

Plans are underway to renovate SR 52. Beginning at US 19 and continuing to Moon Lake Road (587), SR 52 will be widened to 6 lanes, with curb and gutters. Commencing at Moon Lake Road and concluding at I-75, SR 52 will become 4 lanes. Preliminary design calls for a 52-foot median, 12-foot lanes, and 10-foot shoulders (4 feet paved). Construction will be performed in phases. The first phase, US 19 to Moon Lake Road, is to be completed by 1995. No completion dates have been set for the remaining phases, but the estimated project completion date is the year 2000.

Preliminary planning has begun for a north/south freeway crossing Pasco County. Two of the three proposed alternative corridors run adjacent to the Florida Power Corporation easement which crosses the site boundaries. The proposed freeway is known as the North Suncoast Corridor. It will be 4 lanes wide, and is expected to carry heavy traffic volumes. At present, it is likely that an interchange will be used to cross SR 52. The project completion date is estimated to be in the year 2010. The corridor alternatives are still being evaluated and no selection has been made.



Pasco County Resource Recovery Program

Pasco County 1985 Traffic Counts FIGURE 2-30

3.0 THE PLANT AND DIRECTLY ASSOCIATED FACILITIES

3.0 THE PLANT AND DIRECTLY ASSOCIATED FACILITIES

3.1 BACKGROUND

Pasco County wishes to implement its own resource recovery facility to serve the solid waste disposal needs of its growing incorporated and unincorporated areas. Interest in the concept of resource recovery has been stimulated in the county by an increased awareness of the environmental and siting problems associated with landfill disposal methods.

The decision to build a resource recovery facility in Pasco County was made after six years of investigation by the county. Preliminary planning began in 1980 when dwindling suitable land space and tightening regulations caused the county to consider alternative solid waste disposal methods. Also at this time, the Florida Department of Environmental Regulation (FDER) required 17 counties, including Pasco County, to investigate the feasibility of a resource recovery program.

In the 1984 election for the Pasco County Board of County Commissioners, the public voted on the resource recovery issue. The stated issue of the vote was: "Shall the Board of County Commissioners issue a nontax-supported revenue bond for the purpose of financing a resource recovery system to dispose of solid waste instead of developing long-term sanitary landfills?" The public was overwhelmingly in favor of resource recovery. The official count was 68,485 "yes" votes and 21,416 "no" votes.

3.1.1 SOLID WASTE COLLECTION

Under the current system, the county does not have full control of solid waste collection in its unincorporated areas. Residential waste is collected twice each week, with more frequent collection as necessary for commercial waste. According to occupational license data, the current collection system serves 68 percent of the county's population. The existing East Pasco County Landfill receives about 65 percent of the solid waste generated in the county, or approximately 460 tons of solid waste

daily, six days per week. The balance of the county's solid waste is either disposed of illegally, onsite, or transferred to facilities outside Pasco County. Pasco County is developing a solid waste flow control program to guarantee that future solid waste quantities will be directed to the resource recovery facility. Extensions to the East Pasco County Landfill will be constructed to keep the landfill operating until the resource recovery facility goes on-line.

Site selection by Pasco County came after review of a detailed study prepared by the county's consulting engineers (CDM, October 1985). In the study, a specific siting methodology was used to evaluate the suitability of candidate sites. A five-step process was used for selection. The first two steps eliminated areas that were either unacceptable or marginal. This elimination was accomplished by applying negative siting criteria such as flood potential, well field impacts, airport proximity, urban development and presence of water bodies. Environmentally sensitive areas were avoided, such as cypress forests, wildlife management areas, and high water table areas. Preliminary sites were identified in the third step by comparing land availability and ownership characteristics. Sites were selected for further consideration if they offered sufficient land space to accommodate both a resource recovery facility and a sanitary landfill. The sites were compared using positive siting criteria to determine which of the final four potential sites was best. Each site was evaluated for propensity to sinkhole formation, hydrologic conditions, and relative cost. The preferred site was selected based on these criteria and additional information received during two Board of County Commissioners meetings and four public meetings.

In the fall of 1985, the Board of County Commissioners approved the landfill site recommended by the county's consulting engineers. The site is located in northwest Pasco County, near the county's waste generation centroid. The site offers a good access road, generous land space and a buffer zone.

On February 12, 1985, the Pasco County Board of County Commissioners executed a contract with Camp Dresser & McKee Inc. for development of a resource recovery program. The stated objective of that contract is:

> Development and implementation of a county-wide resource recovery program, ancillary facilities and a landfill/ashfill.

Shortly after the contract was approved, a management team was organized to guide this project to completion. The management team includes the consultant team (engineers, legal and financial advisors), and Pasco County staff and decision-makers.

Commercial-scale resource recovery began in the United States in the late 1960s, but European countries have been recovering energy from solid waste for more than 30 years. Denmark converts 70 percent of its solid waste to energy, Switzerland converts 40 percent, and Sweden converts 30 percent. Currently, the United States converts less than 2 percent of its solid waste to energy, but this quantity is expected to increase to 10 percent during the early 1990s. More and more communities in the United States are building resource recovery facilities; the technology is tested and proven effective.

3.1.2 PROPOSED FACILITIES

After evaluating several technologies, the county has found that its current and foreseeable needs would be best served by a facility which uses the mass-burn technology for combustion of solid waste. This process recovers heat energy in the form of steam, and converts that steam energy into electricity which can be sold. The primary facilities proposed for the 751-acre Pasco County site include a mass-burn resource recovery facility and a sanitary landfill/ashfill. Ancillary facilities will include truck scales and a scale house for weighing incoming refuse, an ash handling building, cooling tower, switchyard, and maintenance facility for landfill equipment.

The facility will most likely be owned by the county, and operated by a full-service contractor under contract to the county. This full-service

contractor would provide design, construction, start-up, acceptance testing, and 20 years of continuous operation and maintenance. Pasco County will identify an appropriate contractor through the Request for Proposal (RFP) procurement process.

Resource Recovery Facility

The proposed resource recovery facility will have a maximum design rated capacity of 1,200 tons per day (tpd). However, its initial continuous design rated capacity will be 900 tpd, using 3 combustion/steam generation units with a continuous design rated capacity of 300 tpd each. Each boiler unit will operate independently. Therefore, it will be possible to shut down one unit at a time for maintenance and inspection. The addition of a fourth boiler unit is contingent on the demand placed on the facility.

Initial project construction will include a tipping area and refuse storage pit sized to handle 1,200 tpd (continuous design rated capacity). The emissions stack will be equipped with four flues. The project will have one steam turbine generator which will generate electricity (approximately 22 megawatts). Power lines from the project's electrical switchyard will connect with the Florida Power Corporation (FPC) Hudson substation via the powerline easement which crosses the project site. Revenues from energy sales may be shared by the county and contractor during the life of the operating contract.

Since the proposed facility will use mass-burn technology, there will be no preprocessing of wastes at the facility prior to combustion. A schematic diagram of a typical resource recovery facility is presented in Figure 3-1. Municipal solid waste will be truck-delivered to the facility and ash residue will be removed by the same mode of transport. The solid waste will be placed in the refuse bunker directly from transfer trailers and packer trucks inside the building. All waste will be stored inside the building, so that no waste is visible from the outside. Two overhead cranes will mix the waste in the bunker and load the charging hoppers as required.

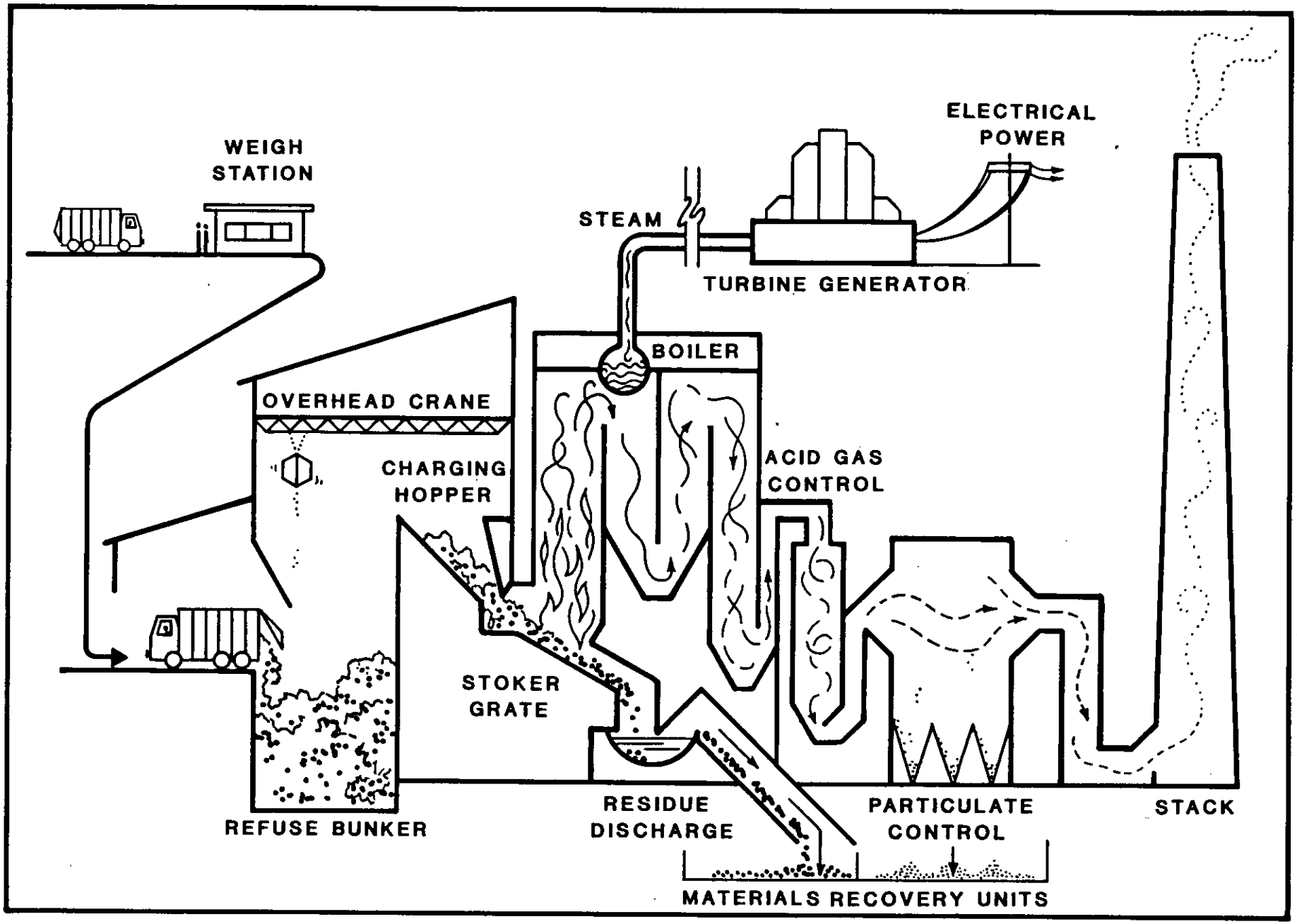


FIGURE 3-1

Pasco County Resource Recovery Program
Schematic of Typical Resource Recovery Facility

The facility will be equipped with baghouses for particulate removal. Acid gas dry scrubbers will also be used. A dry scrubber and a fabric filter (baghouse) will be furnished for each combustion train. Bottom ash from the furnace and flyash from the emission control system will be mixed before removal from the facility. Ash from the combustion of solid waste will comprise 10 percent of the volume, and 25 percent of the weight of the municipal solid waste processed by the facility. The ash will be quenched with water to approximately 20 to 30 percent moisture before transport to the landfill/ashfill.

3.2 SITE LAYOUT

The general site development plan (Figure 2-6) shows the conceptual building layout and landfill/ashfill perimeter on the site. The landfill/ashfill boundary and all structures will be set back a minimum of 100 feet from all property lines and adjacent roadways. The resource recovery facility and the landfill/ashfill will share a common entrance and scale house. A one-way loop used to access the resource recovery facility will provide organized routing of all truck traffic. An access road through the landfill/ashfill area will be used to transport the ash.

Due to shallow groundwater conditions, the landfill/ashfill will be constructed at grade. All structures will be constructed at grade, except the refuse bunker, which will be built 5 to 7 feet below grade. The natural site drainage is toward the southwest. Site grading will repeat existing drainage patterns wherever possible. The retention basins for landfill/ashfill drainage are positioned to make use of natural drainage, so that extensive grading for drainage channels will be minimized. However, substantial site grading will be required to construct a resource recovery facility with raised level vehicle access. The maximum height for site fill will occur at the elevated tipping floor (28 feet). The slopes will be 4:1 (or 14°). Revegetation will be used to minimize erosion and siltation.

Roadway grades on facility access roads will not exceed 4 percent, to minimize gear shifting by trucks and its associated noise. Maximum roadway

grades of 5 percent are suggested for facility egress. Grading for the landfill/ashfill will consist of 4:1 side slopes for the perimeter and 3 percent grading (or 2°) slope for the final cover.

The roadways will be designed with a minimum turning radius of 50 feet to accommodate truck traffic. The entrance road will be divided and the remainder of the road system will be one-way. A 12-foot lane width will be used for 2-lane roads, and an 18-foot width will be used for one-way roads.

Parking spaces have been provided to accommodate the work force, potential visitors, and shift overlaps. Automobile parking will be separated from truck circulation to minimize potential conflicts. The roadway design speed will be 30 miles per hour; however, posted speeds will be lower.

In the area surrounding the resource recovery facility, extensive landscaping is not necessary. The area is surrounded by planted trees, and the site has a dense, 1,500-foot buffer zone along Hays Road and Shady Hills Road.

3.2.1 BUILDING DIMENSIONS

The proposed resource recovery facility consists of two contiguous buildings, the administration building and the processing building (see Figure 2-6). The administration building is approximately 30 feet high, 110 feet long and 30 feet wide. Offices will be located along the west side of the processing building. The processing building is rectangular, measuring approximately 310 feet by 260 feet. It varies in height depending on the processing function housed in each portion of the building. On the tipping floor side, the building is about 60 feet high to accommodate refuse unloading activities. North of the tipping floor, the building height increases to about 100 feet to house refuse storage and furnace charging accoutrements. Continuing northward across the building, the height increases to 110 feet over the boilers. The air pollution control system will not be enclosed. The facility profile is shown on Figure 3-2. The dimensions provided on Figure 3-2 are approximations. The exact facility dimensions will be designed by the selected contractor.

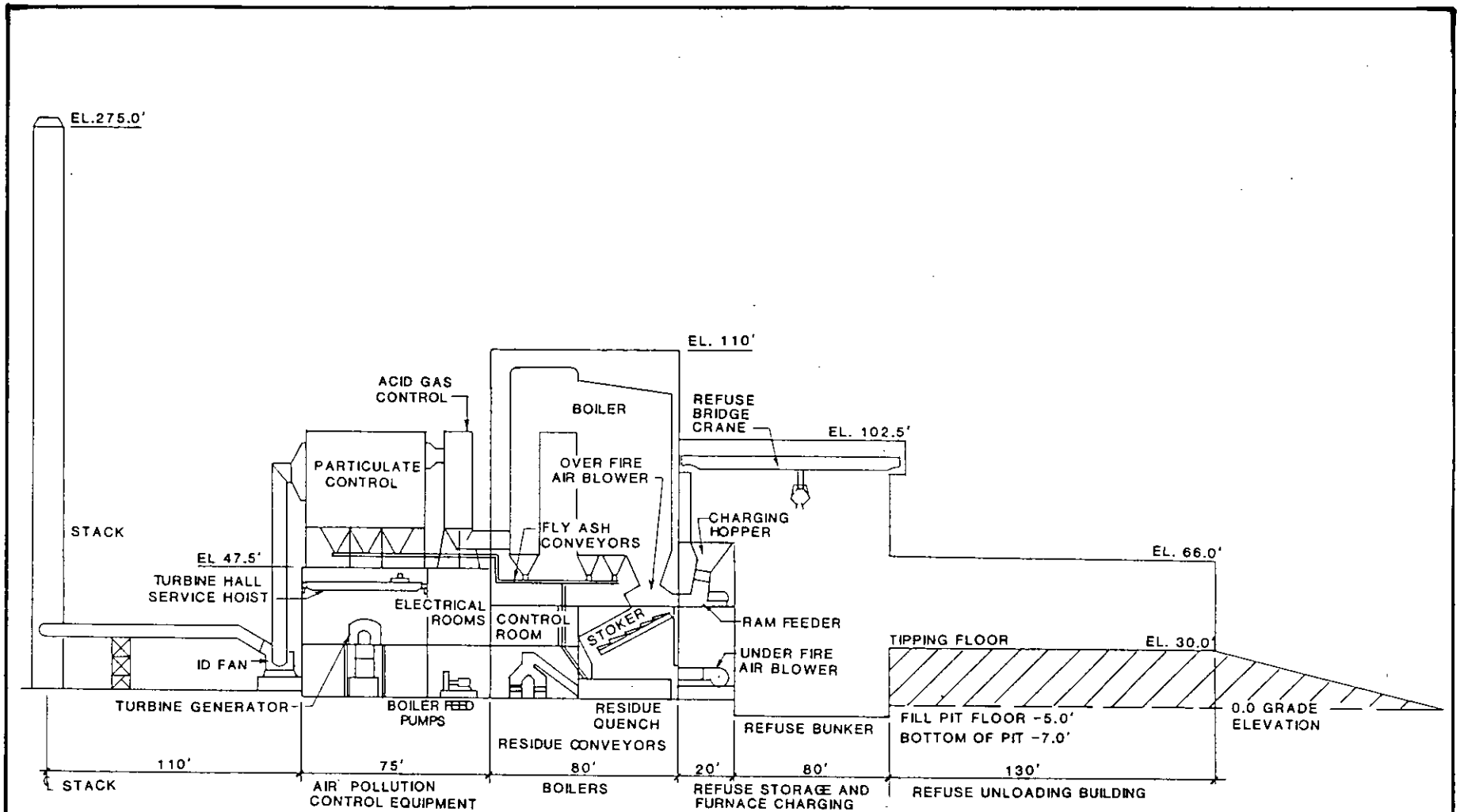


FIGURE 3-2

Pasco County Resource Recovery Program
Facility Profile

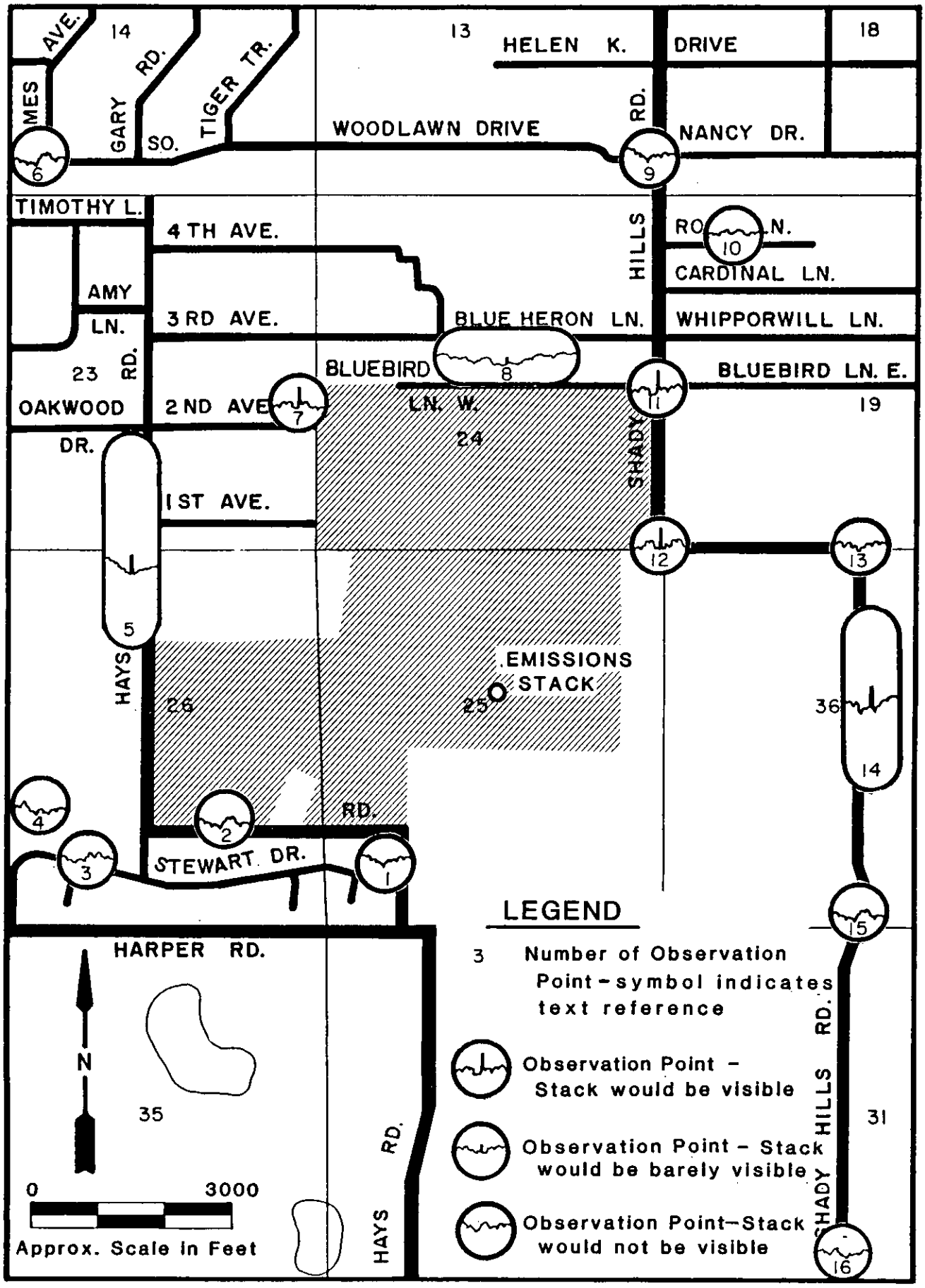
This building configuration provides a stepped appearance which helps reduce the visual impact of the structure by modifying its mass. This will be most apparent when the structure is viewed from the east and west.

3.2.2 VISUAL IMPACT

A preliminary study was performed to determine the visual impact of the facility on residences in the area. Since the emissions stack is the tallest structure of the facility, its height of 275 feet was chosen for study purposes.

To simulate the emissions stack, three weather balloons were elevated 275 feet above the proposed location of the stack. Observations were made in residential areas at varying distances and directions from the facility location. Figure 3-3 shows the observation points and the degree of visibility at each point. The visibility of the balloons was dependent upon the distance of the observation point from the balloons, and the proximity of obstructions such as trees, poles and buildings. The combination of three weather balloons, each having a 5-foot diameter, is approximately the width of the proposed emission stack. Thus, it was assumed that observations made during the study could be applied to the proposed structure.

Visibility at observation points 1 through 4 south and southwest of the facility site was completely obstructed by trees. At observation point 7, northwest of the facility site, the open fields allowed a clear view of the balloons. There was a range of visibility along Hays Road (observation point 5. At distances of more than two miles (e.g., at point 6), the balloons were not visible, even in areas with few obstructions. At observation point 8, located in Shady Hills Park, the view of the balloons was partially obstructed. From point 8, the top of the proposed emissions stack will be slightly below the tree line, and will be visible from certain angles through the trees. Points 9 and 10, located north of the facility site, afforded no view of the balloons. East of the facility, six observations were made along Shady Hills Road. Two of the six observation



Pasco County Resource Recovery Project
Visual Impact Study

FIGURE 3-3

points (11 and 12) provided a view of the balloons. In addition, a 1/2-mile portion of Shady Hills Road (point 14) allowed a view of the balloons.

The tallest portion of the resource recovery building will be 165 feet below the top of the emission stack. The building will not be visible from most observation points. At observation point 7 (Figure 3-3) the building may be partially visible.

3.3 FUEL

3.3.1 FUEL FEED STREAM

The resource recovery facility will obtain its fuel feed stream from municipal solid waste collected in Pasco County. The term "municipal solid waste" applies to all of the solid waste generated within Pasco County, except hazardous and pathogenic wastes and sludges. Since this waste is heterogeneous, characteristics such as heating value, moisture content and ash content of the waste will vary. However, Pasco County's solid waste may be classified according to the following general characteristics and sources of generation:

- Residential Wastes. Mixed domestic household wastes (including yard wastes) generated by individuals or families in single or multiple family dwellings.

- Commercial Wastes. Wastes generated by the commercial and retail sector of the county. The physical characteristics of these wastes are similar to residential wastes, consisting primarily of combustible materials in the form of paper and food wastes from offices, restaurants and retail establishments.

- Institutional Wastes. Wastes generated by hospitals, schools, and churches. These wastes have characteristics similar to residential and commercial wastes. Any wastes

classified as infectious by federal and state regulations will be excluded.

- Industrial Wastes. Wastes generated by industrial process and manufacturing operations, excluding any wastes classified as hazardous or infectious by federal and state regulations. These wastes also include general housekeeping and support activity wastes associated with industry.

All calculations, analyses and performance data for the resource recovery facility have been based on the as-fired solid waste higher heat value of 4,800 Btu per pound, with a 21 percent moisture content by weight. Table 3-1 presents the as-received reference solid waste composition, and Table 3-2 lists the reference waste ultimate analysis to be used.

3.3.2 FUEL STORAGE

The resource recovery facility will be equipped with an automatic weighing station to weigh and record the quantity of solid waste delivered. The waste will be delivered in standard, municipal type, packer vehicles, open-bodied dump trucks, and transfer trailers with capacities up to 110 cubic yards. The facility will receive solid waste deliveries 6 days per week, 52 weeks per year.

The Pasco County resource recovery facility will include a totally enclosed tipping floor with 12 tipping bays, each 15 feet wide. Backup barriers will be provided at each tipping bay to prevent vehicles from backing into the solid waste storage pit. The storage of the delivered solid waste will be in a completely enclosed storage pit with the floor elevation below the tipping floor. The pit will be sized for a minimum storage capacity of three days (i.e., 3,600 tons of solid waste at a density of 450 pounds per cubic yard).

During design of the refuse pit capacity, scheduled maintenance and unscheduled breakdowns were considered. The projected annual processing time, considering downtime, is 85 percent. This estimate is based on

TABLE 3-1

REFERENCE SOLID WASTE COMPOSITION

Waste Category	Nominal Percentage By Weight
Combustibles	60
Moisture	21
Non-combustibles	19
TOTAL	100

TABLE 3-2

REFERENCE SOLID WASTE ULTIMATE ANALYSIS

Component	Nominal Percentage By Weight
Moisture	20.70
Total Inert	19.22
Carbon	27.40
Hydrogen	3.88
Oxygen	27.50
Nitrogen	0.70
Chlorine	0.46
Sulfur	0.13
TOTAL	100.00
Higher Heating Value (HHV)	4,800 Btu/lb

operating experience at similar facilities. Two alternative processing configurations were considered for the facility to achieve a maximum design rated capacity of 1,200 tpd: three 400-tpd capacity units, or four 300-tpd capacity units. Pasco County selected the four unit alternative for several reasons. Since the initial design rated capacity will be approximately 900 tpd, the county may defer some capital expenditure by using only three 300-tpd units until a fourth processing unit is needed during a future expansion period. The flexibility of the four unit configuration is more practical for matching yearly waste volume increases, and with four units, less processing capacity is lost during breakdowns.

The primary purpose of three-day pit capacity is to assure adequate onsite storage for refuse over a three-day weekend. However, the excess pit capacity could be used to store incoming refuse when the facility is down for scheduled or unscheduled maintenance. In this manner, the need to bypass waste directly to the landfill is minimized.

Three examples have been prepared to illustrate the waste processing capabilities of the plant with one or more units out of operation. The examples are based on the following assumptions.

- The plant operates 24 hours per day, 7 days per week.
- The plant will ultimately receive approximately 8,400 tons of waste per week (1,530 tpd, Monday through Friday, and 763 tons on Saturday).
- The plant will have four units ultimately; each unit will have a design capacity of 300 tpd.
- The refuse pit will have a waterline storage capacity of approximately 16,000 cubic yards. An additional 8,000 cubic yards of storage above the waterline storage is available when waste is stored against the pit sidewalls. The ultimate capacity of the pit is 24,000 cubic yards. (Based on a density of 450 pounds per cubic yard, the pit will store 3,600 to 5,400 tons of waste).

Example One - Three Unit Operation

One unit shuts down due to mechanical failure at 6:00 a.m. on Monday. The remaining two units are capable of operating at 100 percent of their capacity. At the time of breakdown, the pit contains 600 tons (normal minimum 1/2 day storage reserve).

Time/Day	Received (tons)	Processed (tons)	Waste in Pit (tons)
6:00 a.m. Mon. (Week 1)	1,530	900	600
			+630
6:00 a.m. Tues.	1,530	900	1,230
			+630
6:00 a.m. Wed.	1,530	900	1,860
			+630
6:00 a.m. Thurs.	1,530	900	2,490
			+630
6:00 a.m. Fri.	1,530	900	3,120
			+630
6:00 a.m. Sat.	765	900	3,750
			-135
6:00 a.m. Sun.	0	900	3,615
			-900
6:00 a.m. Mon. (Week 2)	1,530	900	2,715
			+630
6:00 a.m. Tues.	1,530	900	3,345
			+630
6:00 a.m. Wed.	1,530	900	3,975
			+630
6:00 a.m. Thurs.	1,530	900	4,605
			+630
6:00 a.m. Fri.	1,530	900	5,235
			+630
6:00 a.m. Sat.			5,865

The pit will be filled to capacity in the midafternoon of the second Friday. The total reserve time for this situation is 12 days.

Example Two - Two Unit Operation

At 6:00 a.m. on Monday, two units shut down due to mechanical failure. The remaining units continue to process waste at 100 percent of their capacity.

Time/Day	Received (tons)	Processed (tons)	Waste in Pit (tons)
6:00 a.m. Mon	1,530	600	600
			+930
6:00 a.m. Tues.	1,530	600	1,530
			+930
6:00 a.m. Wed.	1,530	600	2,460
			+930
6:00 a.m. Thurs.	1,530	600	3,390
			+930
6:00 a.m. Fri.	1,530	600	4,320
			+930
6:00 a.m. Sat.	765	600	5,250
			+165
6:00 a.m. Sun.	0	600	5,415

The pit will be filled to capacity at some time during the late afternoon on Saturday. Since no waste is delivered on Sunday, the total reserve time in this example is 7 days.

Example Three - Alternative to Example One

At 6:00 a.m. on Saturday of week 1 in example one, a second unit shuts down due to mechanical failure. The remaining units continue to process waste at 100 percent of their nameplate capacity.

Time/Day	Received (tons)	Processed (tons)	Waste in Pit (tons)
6:00 a.m. Sat. (Week 1)	765	600	3,750
			+135
6:00 a.m. Sun.	0	600	3,885
			-600
6:00 a.m. Mon. (Week 2)	1,530	600	3,285
			+930
6:00 a.m. Tues.	1,530	600	4,215
			+930
6:00 a.m. Wed.	1,530	600	5,145
			+930
6:00 a.m. Thurs.	1,530	600	6,075

The pit will be filled to capacity at some time during Wednesday of week 2. The total reserve time in this situation is 10 days.

These three scenarios show that the plant will continue to receive the entire waste stream without any bypass to the landfill or other facility for 12 days in Example One); for 7 days when two units fail simultaneously (Example Two); or for 10 days when two units fail in a staggered manner (Example Three). Incoming refuse will never be delivered or stored outside the enclosed pit area or diverted to the adjacent landfill during these periods.

As discussed above, the facility will consist of four independent process trains. Common elements such as waste feed cranes, ash conveyors, and boiler feedwater systems will have redundant capabilities. The facility will have a condenser capable of wasting all of the facility's steam if the turbine generator is being serviced or is inoperable.

The refuse bunker and tipping floor area will use a negative air pressure ventilation system. The underfire and overfire fans which provide the incinerator with the air supply will draw all the necessary air from the

refuse bunker and tipping floor area. Vents installed on the walls opposite the fans will induce a cross flow ventilation. The dust particles and fumes generated in the area will be directed to the incinerator, thus odors outside the refuse bunker and tipping floor area will be eliminated.

Two overhead solid waste handling cranes will be installed to charge the combustion units and the rotary shear, and maintain the solid waste storage area. The cranes will be of the travelling bridge type, employing a polyp type grapple. Each crane will be capable of meeting the solid waste handling requirements of the entire facility.

3.4 AIR EMISSIONS AND CONTROLS

3.4.1 AIR EMISSION TYPES AND SOURCES

As noted previously, the proposed resource recovery facility is a new facility that will be located in Pasco County. At ultimate size, the facility will contain four boilers, each with a rated capacity of 300 tpd of municipal solid waste for a total of 1,200 tpd. The flue from each of the boilers will be encased in a single stack. The refuse bunker will be enclosed and under negative pressure, since combustion air will be taken from this area. There will be no onsite storage of either refuse or residue except within controlled areas. Loading and unloading of trucks will take place within the residue storage building. Trucks entering and leaving the site will be covered and will travel on paved roads. Minor sources of particulate emission include the ash handling area and the lime silo. Air vented from these areas will be minimized by a particulate control device. Thus, the stack will be the only major source of emissions from the facility.

A complete description of stack emissions is contained in Section 3.0 of the Prevention of Significant Deterioration (PSD) permit application (See Volume III - Air Quality). An emission inventory for the proposed facility is contained in Table 3-3 of the PSD. A complete FDER Form 17-1.202 (1), "Application to Operate/Construct Air Pollution Sources" may be found in the front of Volume III - Air Quality.

3.4.2 AIR EMISSION CONTROLS

Air pollution control technologies proposed to control particulate matter and trace metals are: electrostatic precipitator (ESP), fabric filtration system (baghouse), and wet Venturi scrubber. The technologies proposed to control SO_2 and acid gases (H_2SO_4, HCl, and HF) include: dry scrubber/ESP and dry scrubber/fabric filter. These systems and their operating characteristics are fully described in the Best Available Control Technology/Lowest Achievable Emission Rate analysis in Section 4.0 of the PSD permit application (see Volume III - Air Quality).

3.4.3 BEST AVAILABLE CONTROL TECHNOLOGY (BACT)

The BACT analysis is presented in Section 4.0 of the Prevention of Significant Deterioration permit application. The analysis evaluates the environmental, economic, and energy aspects of alternative control techniques and methods. For all of the criteria pollutants, Pasco County is designated as being in attainment of the National Ambient Air Quality Standards (or unclassified), and hence subject to BACT. Based on a review of various air pollution control alternatives, a dry scrubber and baghouse are proposed as BACT for the Pasco County resource recovery facility for all pollutants subject to PSD review. The dry scrubber will be designed to achieve an emission limit of 100 parts per million on a dry volume basis (ppmdv) at 7 percent 0_2 or 90 percent reduction for SO_2; and 100 ppmdv at 7 percent 0_2 or 90 percent reduction for HCl. The baghouse will be designed to achieve an outlet grain loading of 0.015 grains per dry standard cubic foot corrected to 12 percent CO_2 (gr/dscf @ 12% CO_2). A complete discussion of the BACT selection process is presented in Section 4.0 of the Prevention of Significant Deterioration permit application (contained in Volume III - Air Quality).

3.4.4 DESIGN DATA FOR CONTROL EQUIPMENT

Design data for control equipment are not available because a furnace/boiler supplier has not been selected yet. Typical design

parameters for mass-burn resource recovery facilities were used in the BACT analysis and are presented in Section 4.0 of Volume III - Air Quality.

3.4.5 DESIGN PHILOSOPHY

The proposed control technologies--dry scrubber and baghouse--are designed to neutralize acid gas emissions and capture particulate matter entrained in the flue gas from the furnace/boiler. The particulate matter is collected in a dry form to avoid wastewater disposal, corrosion, and stack gas reheat problems.

3.5 PLANT WATER USE

During normal operation of the resource recovery facility, all plant process cooling water will be drawn from the future Hudson Subregional Wastewater Treatment Plant (WWTP) and all wastewater discharge will go directly to the WWTP. The Hudson plant will be located 6 miles west of the site. Potable water provided by an onsite well will be used in small quantities for boiler makeup, equipment cleaning, and the personnel areas of the plant (e.g., washrooms, locker room). No plant water will be discharged directly to surface or groundwater bodies. The quantities of water used and discharged as presented in this section are approximate and subject to change pending selection of a specific contractor. Alternative sources of water are discussed in Section 8.0.

A quantitive water use diagram is provided in Figure 3-4. The figure shows estimated quantities of water flow to and from the various plant water systems, including the heat dissipation system, sanitary wastewater system, potable water systems, air pollution control system and steam generation system. The estimates shown in Figure 3-4 are conservative. For example, it is possible to supplement water demands for the dry scrubbers with cooling water blowdown, thereby reducing "raw" water requirements. This has been performed in several other facilities. Also, cooling water blowdown can be used for residue quench. Overall, the maximum water use for the facility when processing 900 tpd is estimated at 720,000 gallons per day.

3.10 ASSOCIATED FACILITIES

The 751-acre site to be occupied by the resource recovery facility will also be occupied by a sanitary landfill/ashfill. The landfill/ashfill will cover 195 acres in the center portion of the site (see Figure 2-6). The volume capacity of the landfill/ashfill is approximately 19.5 million cubic yards, and it is expected to have a service life of more than 30 years.

The landfill/ashfill will incorporate a double liner leachate collection system. The system consists of two layers of sand divided by two impermeable liners made of high density polyethylene. The two layers will contain leachate collection pipes spaced 100 feet apart and set at a slope of 0.5 percent. Each collection pipe will be placed in a trench with 2 percent side slopes. The drainlines will be surrounded with a layer of crushed stone and wrapped in a geotextile fabric to prevent clogging. The drainlines will feed into a leachate header system located along the perimeter of the landfill/ashfill. The leachate header will also have a slope of 0.5 percent and will guide the leachate to storage tanks. Figure 3-7 shows a cross-sectional detail of the leachate collection system.

The landfill/ashfill will be divided into 15 cells. Each cell will be approximately 400 feet wide and 1,100 feet long. Municipal solid waste and ash will be placed separately. The north half of the landfill/ashfill will receive municipal solid waste, and the south half will receive ash. An above ground high-density polyethylene liner will be used to separate the two materials at the boundary line between the two areas.

Initially, the landfill/ashfill will receive approximately 190 tpd of ash and 135 tpd of nonprocessible solids. Ash and municipal solid waste will be distributed in 10-foot layers and covered daily with a 0.5-foot layer of sand. Since each cell covers a small area of the landfill/ashfill, the leachate system will be installed in phases as new cells are opened. During the early stages of landfill/ashfill operation, this will prevent unnecessary collection of runoff that has not contacted the ash and solid waste material.

Construction of the landfill/ashfill will begin with a 24-foot wide road and 48-foot wide swale that will follow the perimeter of the landfill/ashfill. The bottom of the landfill/ashfill will remain above 48 feet msl to maintain the landfill/ashfill 5 to 20 feet above the groundwater level. The outer berm of the landfill/ashfill will have a 4:1 horizontal/vertical slope and will use three 10-foot wide terraces spaced 20 to 30 feet apart in elevation. These terraces will be designed to reduce runoff velocity and prevent excessive erosion. Above the third terrace the slope will reduce to 3 percent. The total height of the landfill/ashfill is expected to be 100 feet.

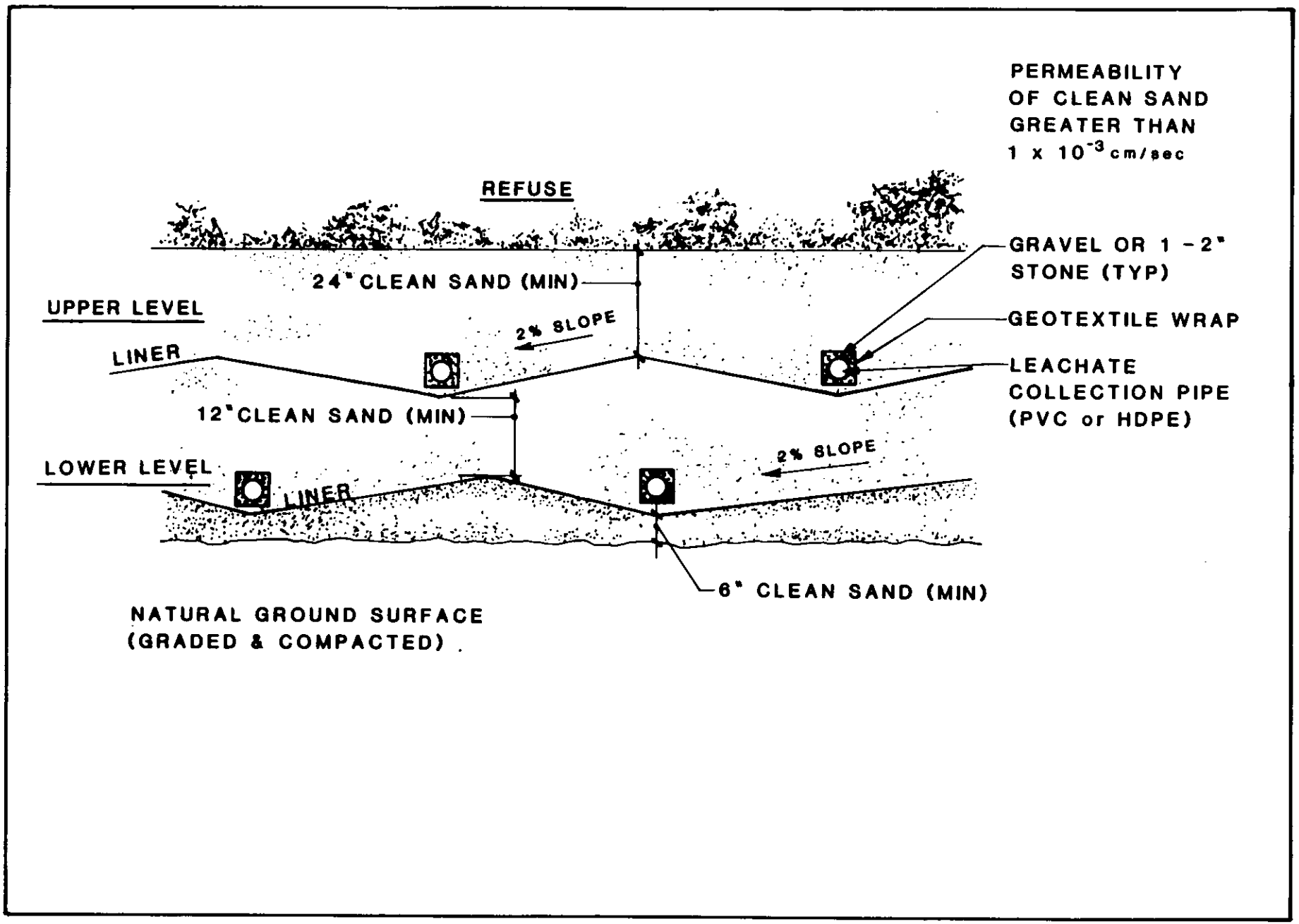


FIGURE 3-7

Pasco County Resource Recovery Program
Leachate Control System Double Liner

moved with care to a site of similar habitat value which will be suited to their continued survival. Within the approximate 500 acres of the property that will not be developed, there are comparable habitats into which the displaced Gopher Tortoises may be relocated.

4.4.2 MEASURING AND MONITORING PROGRAMS

The monitoring program for ecological conditions is discussed in Section 2.3.6.

4.5 AIR IMPACT

4.5.1 EMISSION RATES

Construction activities may cause localized, short-term, adverse air quality impacts. Potential impacts include:

- Fugitive dust emissions from land clearing and site preparation activities, and
- Mobile source emissions from construction equipment at the construction site.

Although emissions will continue throughout all phases of construction, the greatest impact from fugitive dust emissions will occur during the site preparation phase when the largest amount of soil surface will be exposed. The greatest impact from the mobile sources will occur during the facility construction phase when most of the equipment will be onsite.

Trucks carrying fill and concrete will travel on the site access road during construction. This road is currently unpaved, and may be a source of particulate emission. Several mitigating measures may be used to reduce these particulate emissions. Routine watering of the roadway would reduce roadway emissions by approximately 50 percent. A watering truck is usually onsite for various other activities. This truck could be partially dedicated to roadway watering, or an additional truck could be provided for

this purpose. Surface treatment with penetrating chemicals could provide up to a 50 percent reduction in particulate emissions, depending on the frequency of application. The application of penetrating chemicals is more costly than routine watering, but fewer applications are required when chemicals are used. The costs of reducing roadway particulate emissions using these methods would include the expenses of purchasing and mixing chemicals, and the expense of using a watering truck or other vehicle. Soil stabilization may also be used to reduce roadway particulate emissions. Soil stabilization is performed when the roadway is developed, and can achieve a 50 percent emission reduction by binding up surface soil. Emissions can be reduced further by spreading oil or penetrating chemicals over the stabilized area. The advantage of soil stabilization is that the roadway becomes more drivable.

Paving can reduce roadway particulate emissions by nearly 85 percent. Road paving can be accomplished by soil compaction and addition of base coarse material, or by soil stabilization with an asphalt cap.

Good construction practice requires a developed access road when extensive truck traffic is necessary. Because the access road must be able to handle heavy trucks eventually on this site, it should be built at least to base coarse level, or it will require improvement during construction. Thus, paving of this roadway would be cost-effective and is the recommended method for reducing particulate emissions.

General site emissions--particulate emissions across open and active construction areas—are best controlled by a comprehensive watering program which can reduce emissions by 50 percent. Other methods used to control emissions are not practical because soil is usually in a state of transition during construction. An excessive amount of penetrating chemicals would be required, and binding agents would be continually broken up. Since a watering truck is available onsite for other construction activities, use of this truck for site watering should not impose a significant cost.

Particulate emissions in completed cut and fill areas can be reduced by 65 to 80 percent using vegetation or chemical binders. Since these areas are not active and would not receive traffic, vegetation can grow undisturbed and chemical binders need only infrequent applications. Embankments brought up to grade and no longer subject to construction activity should be immediately landscaped or vegetated. Till piles or embankments requiring future activity should be treated with a binder.

Good site maintenance should be practiced. Most site maintenance practices are not costly, and the extra effort they require is usually outweighed by the benefits they offer.

4.6 IMPACT ON HUMAN POPULATIONS

The construction of this project will result in both positive and negative effects on the local and regional population. Positive effects will result from the creation of jobs, and the generation of tax revenues from the purchase of construction materials (see Section 7.0). Negative effects will result principally from construction activities.

4.6.1 SENSITIVE RECEPTORS

Sensitive receptors are individuals or organizations/institutions located close enough to the project site to be potentially affected by construction impacts. A comprehensive review of the land use and demographic features of the area surrounding the site is presented in Section 2.2. As indicated in Section 2.2, major land uses adjacent to the site include vacant grazeland and low-to-medium density residential areas.

The closest sensitive receptor to the project site is a single-family residence located on Hays Road near the proposed site entrance. The residence is about 200 to 250 feet south of the site, and almost directly across from the entrance road to the facility. The residence is located approximately 2,000 feet from the proposed resource recovery facility.

remain at LOS-A. Shady Hill Park is located one mile north of the construction area. Construction noise will not be discernable at the park, and traffic flow will not be affected.

4.8 IMPACT ON ARCHAEOLOGICAL AND HISTORIC SITES

None of the prehistoric sites discussed in Section 2.5 and shown on Figure 2-8 will be impacted by the construction of the project. An archaeological and historical review of the site was conducted by the State Division of Historical Resources in July of 1986. The review concluded that no significant sites are recorded for the project area. The review also explained that the nature of the proposed project will not affect any of the recorded sites in the area.

Based on the historical survey and the Division of Historical Resources (DHR) correspondence, no impacts on archaeological or historic sites are expected due to construction activities. If a possible archaeological site is unearthed during construction, officials of DHR will be contacted to determine the significance of the discovery.

4.9 SPECIAL FEATURES

This section discusses all special features associated with site preparation and plant and associated facilities construction that may influence the environment and ecological systems of the site and adjacent areas. These features may include site dewatering for landfill/ashfill construction, as well as the generation of solid and liquid waste as a result of construction activities.

During construction, solid and liquid wastes will be generated. This waste may consist of discarded packaging materials, refuse produced by construction workers, earth spoils, sanitary wastes, or waste oils. Earth spoils will be transferred to the adjacent Class III landfill. Sanitary wastes and waste oils will be handled by the appropriate licensed haulers. The aesthetic and ecological integrity of the site will be maintained.

4.10 BENEFITS FROM CONSTRUCTION

Two important benefits from construction of the proposed resource recovery facility are employment of construction workers in the area, and personal income generated by work force revenues. For the duration of construction, the benefits of a $120 million construction project will be felt in the local economy and labor market as construction-related materials and services are purchased, and jobs are created. Approximately 300 construction workers will be employed during the peak of activity. The services of more than 50 local subcontractors will be required to complete the project. Throughout the course of the project, a total of approximately 1,000 workers will be employed. A significant amount of materials and hardware supplies such as concrete, steel, piping, grass, etc., will be purchased from companies in the area. In addition, positive indirect impacts will be felt by industries and retail establishments which supply goods and services to the project work force. Long-term benefits include the safe disposal of municipal solid waste which will ensure protection of the county's groundwater supply, and continued employment opportunities for the area. Section 7.0, Economic and Social Effects of Plant Construction and Operation, provides further analysis of social and economic benefits arising from plant construction.

4.11 VARIANCES

No variances from any standards or guidelines are anticipated.

5.5 SANITARY AND OTHER WASTE DISCHARGES

Solid waste generated by plant operations (employee refuse, packing material, etc.) will be collected from receptacles located throughout the plant and fed into the main solid waste stream for processing. Materials not suitable for incorporation in the solid waste stream will be separated for offsite disposal at an appropriate facility. All sanitary wastewater will be collected and discharged to the Hudson Subregional WWTP. Therefore, no impacts associated with sanitary and other waste discharges are anticipated during plant operations.

5.6 AIR QUALITY IMPACTS

5.6.1 IMPACT ASSESSMENT

The air quality modeling analysis was conducted in three phases:

1. Screening analysis--This analysis identified the boiler operating condition which has the greatest air quality impact and defined the pollutants and downwind locations which have potential for concentrations greater than the significant impact limits. The screening model runs were made using the Industrial Source Complex-Short Term (ISCST) dispersion model and 48 worst case meteorological conditions.

2. Refined modeling analysis--The refined modeling analysis was conducted using the worst case furnace/boiler operating condition and receptor grid defined in the screening analysis. The refined modeling analysis identified the maximum ground level impacts for the pollutants emitted from the facility. The refined modeling was completed using ISCST and five years (1970 to 1974) of Tampa International Airport surface and upper air meteorological data.

3. Additional Class I area impact analysis--This analysis was performed for only sulfur dioxide and total suspended particulates. The emission inventory used in this analysis consisted of the sources in the Florida Crushed Stone permit application. Each phase of the modeling analysis was discussed with and approved by FDER. A detailed discussion of the air impacts is contained in Section 6.0, Prevention of Significant Deterioration (PSD) (see Volume III - Air Quality).

The air quality standards are not violated until a receptor exceeds the standard twice in any given year. The highest value of the second highest concentrations (HSH) is chosen from the potential impacts, additional source impacts, and the monitoring data to allow for a single short-term violation (24 hours or less). Naturally, a single annual average is calculated for each receptor, so the highest annual concentrations were used for comparison.

A comparison of the predicted SO_2 impacts to the PSD increment is shown in Table 5-5. The impacts for SO_2 and TSP did not exceed the significant impact limits. Therefore, the increment for these periods did not have to include other PSD sources. As shown on Table 5-5, the proposed source will consume less than 4 percent of the total increment.

A comparison of the potential impacts to the Florida Ambient Air Quality Standards (FAAQS) is made in Table 5-6 and Figure 5-2. As with the increment evaluation, 3-hour and 24-hour SO_2 were evaluated along with other major SO_2 sources, including the PSD sources. The HSH concentrations from the additional sources were added to the HSH monitored background concentration. This approach is used to estimate the maximum possible impact. Ozone is not directly emitted from the facility, but is formed in the atmosphere as a secondary pollutant. Non-methane hydrocarbons are considered a precursor to ozone formation.

TABLE 5-5

COMPARISON OF PREDICTED IMPACTS
TO PSD CLASS II INCREMENTS
PASCO COUNTY RESOURCE RECOVERY FACILITY

Pollutant	Averaging Time	Rank	Ground-Level Concentration (ug/m^3)	PSD Class II Increment	Impacts as % of Increment
SO_2	Annual	H	0.36	20	1.8
	24-Hour	HSH	2.99	91	3.3
	3-Hour	HSH	11.53	512	2.3
TSP	Annual	H	0.05	19	0.3
	24-Hour	HSH	0.43	37	1.2

Abbreviations:

H = highest
HSH = highest, second-highest
PSD = Prevention of Significant Deterioration

TABLE 5-6

SUMMARY OF THE ISCST PREDICTED CRITERIA POLLUTANT CONCENTRATIONS FROM PROPOSED PASCO COUNTY RESOURCE RECOVERY FACILITY EMISSIONS FOR MODELING PERIOD 1970 - 1974

Pollutant	Averaging Period	Rank	Period (Year/Date/End Hour)	Location Dist (km)	Location Dir (deg)	Facility Impact (ug/m^3)	Ambient Background (ug/m^3)	Total Impact (ug/m^3)	FAAQS/NAAQS (ug/m^3)	Total as Percent of FAAQS
Sulfur Dioxide	3-hour	H	1970/119/12	1.2	70	13.2	456	469.2	1300	36.1
		HSH	1970/99/15	1.17	75	11.5	456	467.5	1300	36.0
	24-hour	H	1972/242/24	1.7	90	3.44	103	106.4	260	40.9
		HSH	1972/180/24	2.0	90	2.98	103	106.0	260	40.8
	Annual	H	1971/NA/NA	2.0	90	0.356	26	25.4	60	44.0
Particulate Matter[c]	24-hour	H	1972/242/24	1.7	90	0.497	87 (87)	87.5 (87.5)	150[a](150[b])	58.3 (58.3)
		HSH	1972/180/24	2.0	90	0.431	87 (87)	87.4 (87.4)	150 (150)	58.3 (58.3)
	Annual	H	1971/NA/NA	2.0	90	0.0515	43 (45)	43.1 (45.1)	60[a](50[b])	71.8 (90.8)
Nitrogen Dioxide	Annual	H	1971/NA/NA	2.0	90	1.03	39	40.0	100	40.0
Carbon Monoxide	1-hour	H	171/237/11	0.7	70	57.6	5153	5210.6	40,000	13.0
		HSH	172/222/11	0.7	90	35.2	5153	5188.2	40,000	13.0
	8-hour	H	141/129/16	1.6	90	3.77	1145	1148.8	10,000	11.5
		HSH	171/220/16	1.4	90	3.42	1145	1148.4	10,000	11.5
Lead[d]	3-month	H	1972/242/24	1.7	90	0.248	0.4	0.65	1.5	43.3

(a) FAAQS for particulate matter expressed as total suspended particulate (TSP).

(b) NAAQS primary and secondary standard for particulate expressed as PM_{10}.

(c) Facility impact for particulate matter equals impact for PM_{10}. Numbers in parentheses denote PM_{10} concentrations. Numbers without parentheses denote total particulate concentrations.

(d) The 24-hour average concentration was substituted for the quarterly average concentration.

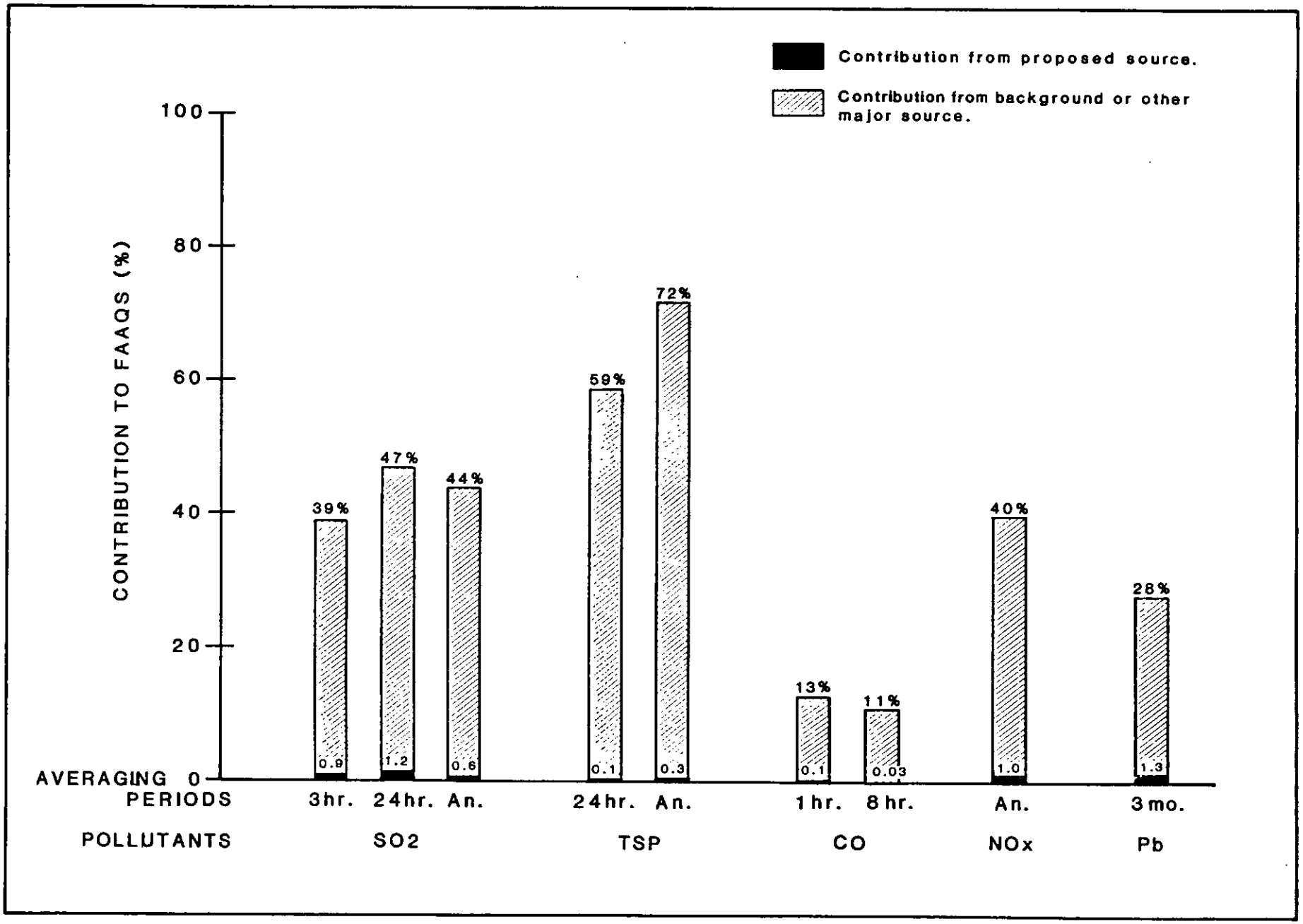


FIGURE 5-2

Pasco County Resource Recovery Program
Air Quality Impact Compared to FAAQS

As Figure 5-2 shows, the impact of the facility is small compared to the existing background concentrations. The 24-hour SO_2 concentration has the greatest impact, contributing 1.2 percent of the standard. The 24-hour average concentration for lead was used for a conservative estimate of the 3-month average lead concentration. All other pollutants contribute less than 1.0 percent.

The impact of the facility was also evaluated regarding visibility, soils, and vegetation. The visibility of the plume was examined with respect to the Chassahowitzka, Cedar Key and Anclote National Wilderness Areas, and the Withlacoochee State Forest. Using a worst case screening analysis defined by Latimer, et al (1980), no visibility degradation is predicted. The predicted maximum annual concentration is well below the thresholds which are injurious to soils and plants. For a detailed analysis of those air quality issues, see Section 7.0 of the PSD (Volume III - Air Quality).

5.6.2 MONITORING PROGRAM

No post-construction ambient air monitoring plan is proposed for the Pasco County resource recovery facility. The monitoring network operated by FDER is sufficient to monitor ambient air quality levels in the vicinity of the site. However, a continuous in-stack monitoring program will be operated for opacity, and oxygen or carbon dioxide concentrations. The equipment will be installed, calibrated and maintained in accordance with FAC 17-2.710 and 40 CFR 51, Appendix P. Compliance testing will also be conducted for pollutants with emission limiting standards in accordance with FAC 17-2.700 and 40 CFR 60. This testing will include, but will not be limited to, testing for particulate emissions.

5.7 NOISE

A technical noise analysis was performed for the proposed resource recovery facility. This noise study is contained in Appendix 10.12. The study explains the methodologies used in estimating the operational impacts of the facility and the results of the analysis. Ambient noise levels were measured at four locations in the site vicinity to establish baseline conditions during day and night periods.

The combustion process chemically alters many of the compounds within the waste stream. Many of the heat releasing reactions, practically speaking, are irreversible. Therefore, the materials consumed in the combustion process are permanently lost. This, however, is considered a positive reuse of a material for the generation of energy which otherwise would have been buried in a landfill. The facility will generate 3.7 billion kilowatt hours of electricity during a 20-year life. In addition to the revenue earned on the electricity sold to the power company, the energy production translates into a $127 million reduction on oil expenditures over 20 years. The processing of 1,200 tons per day of municipal solid waste in a resource recovery facility could also conserve approximately 113,000 tons per year of coal, and offer the potential for recovery of reusable materials.

5.12 VARIANCES

It is not anticipated that variances from applicable standards will be sought as part of the site certification process.

8.0 SITE AND PLANT DESIGN ALTERNATIVES

8.0 SITE AND PLANT DESIGN ALTERNATIVES

Many factors were evaluated during the planning of the Pasco County resource recovery project. These factors include alternative sites, solid waste management methods, ownership and financing, and facility size and boiler configuration. This section discusses the factors of site selection and alternative sources of water.

8.1 SITE ALTERNATIVES

In the fall of 1985, the Pasco County Board of County Commissioners approved the site recommended by the county's consulting engineers. The site is located in northwest Pasco County, near the county's waste generation centroid. The site offers a good access road, a large area of land, and buffer zone.

Site selection by Pasco County was made after preparation of the Pasco County Sanitary Landfill Resource Recovery Study by Camp Dresser & McKee, in October of 1985. For this study, a specific siting methodology was developed to evaluate the suitability of candidate sites. A five-step process was used for selection. The first two steps eliminated areas that were either unacceptable or marginal. This elimination was accomplished by applying negative siting criteria such as flood potential, well field impacts, airport proximity, urban development, and presence of water bodies. Environmentally sensitive areas such as wetlands, state parks, and wilderness refuges were eliminated, as well as areas with shallow groundwater tables (less than 5 feet from the surface). Over 90 percent of the land in Pasco County was eliminated from further consideration during the first two steps.

Using this method of elimination, nine preliminary sites were selected. During the third step, alternative site selections were narrowed further by comparing land availability and ownership restrictions. Land ownership by a small number of individuals was desirable. Land costs are typically lower on large parcels and such parcels are easier to obtain. Sites with sufficient land space to accommodate both the resource recovery facility

and the sanitary landfill/ashfill were selected for futher consideration. Therefore, a minimum area of 400 acres was used to qualify the remaining alternative sites. The sites were then compared using detailed siting criteria to determine which of the final four potential sites was best.

An evaluation of each site was made on the basis of possible sinkhole formation. Conditions which could cause contamination of major potable water supplies were reviewed. Finally, the relative costs of the sites were compared. Cost considerations included proximity to waste generation centroids and utilities, site access, and mitigation of aesthetic impacts.

Although each of the four candidate sites could have been developed for the facility, the study indicated that the Hays Road site could be developed with the lowest relative cost and the fewest negative impacts.

8.2 ALTERNATIVE WATER SOURCE

The county is committed to build the Hudson Subregional Wastewater Treatment Plant (WWTP) at a location 6 miles west of the resource recovery facility. This plant will satisfy all of the process water needs of the resource recovery facility. If for any reason this need cannot be met (i.e., the wastewater treatment plant is not constructed or the pipeline construction is delayed), the county will provide an alternative source of process water. The supply would be provided by an onsite well capable of pumping 1.0 million gallons per day (mgd).

Potable water will be supplied by a second water well that is also onsite. It will have a capacity of 0.05 mgd. A pneumatic storage tank connected to a chlorination system will be used for the potable water supply. If this supply were discontinued due to contamination or depletion, the county would construct a pipeline from an existing water main.

PASCO COUNTY, FLORIDA

SOLID WASTE RESOURCE RECOVERY FACILITY

APPLICATION FOR

POWER PLANT SITE CERTIFICATION

VOLUME II - APPENDICES

SUBMITTED BY
THE PASCO COUNTY
BOARD OF COUNTY COMMISSIONERS

NOVEMBER 1987

PREPARED BY
CAMP DRESSER & McKEE INC.

PASCO COUNTY, FLORIDA

SOLID WASTE RESOURCE RECOVERY FACILITY
APPLICATION FOR POWER PLANT SITE CERTIFICATION

VOLUME II - APPENDICES

SECTION 10.0 APPENDICES

10.1 Federal Permit Applications or Approvals
- 10.1.1 316 Demonstrations
- 10.1.2 NPDES Application/Permit
- 10.1.3 Hazardous Waste Disposal Application/Permits
- 10.1.4 Section 10 or 404 Application/Permits
- ~~10.1.5~~ Prevention of Significant Deterioration Application/Permits (Included in Volume III - Air Quality)
- 10.1.6 Coastal Zone Management Certifications
- 10.1.7 Federal Energy Regulatory Commission Order Public Service Commission Order

10.2 Zoning Descriptions, Correspondence, and Ordinance No. 75-21, Article XXVII

10.3 Land Use Plan Descriptions

10.4 Existing State Permits or Approvals
- 10.4.1 SWFWMD Consumptive Use Permit

10.5 Monitoring Programs

10.6 Site and Adjacent Area Property Ownership
- 10.6.1 Deed for Property Survey of 810-Acre Tract, Purchase Agreement
- 10.6.2 List of Adjacent Property Owners

10.7 Correspondence Related to Governmental Jurisdictions

10.8 Groundwater Well Inventory

10.9 Resource Recovery Facility Soils and Geotechnical Information

10.10 Ecology

10.11 Hydrologic Calculations for Stormwater Basin Design

10.12 Noise Technical Analysis

APPENDIX 10.1.5

PSD APPLICATION/PERMITS

The Prevention of Significant Deterioration (PSD) determination pursuant to the Clean Air Act is included in the Air Quality section of this Application for Power Plant Site Certification (Volume III - Air Quality).

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