AMENDMENT
to the
OCEAN COUNTY DISTRICT
SOLID WASTE MANAGEMENT PLAN
OCTOBER 7, 1986

Adopted by
THE OCEAN COUNTY BOARD OF CHOSEN FREEHOLDERS

In cooperation with
THE OCEAN COUNTY SOLID WASTE ADVISORY COUNCIL

and

THE OCEAN COUNTY CITIZENS ADVISORY
COMMITTEE ON RESOURCE RECOVERY

THE BOARD OF CHOSEN FREEHOLDERS

OCEAN COUNTY
TOMS RIVER, NEW JERSEY 08754

Joseph H. Vicari
Freeholder Director

(201) 929-2002

October 15, 1986

Commissioner Richard T. Dewling
Department of Environmental Protection
CN 402
Trenton, New Jersey 08625

Dear Commissioner Dewling:

I am very pleased to submit, on behalf of the Board of Chosen Freeholders of Ocean County, a revised Solid Waste Management Plan for developing a resource recovery facility. This Plan Amendment changes the site location of this proposed facility. The decision to change the site location was based upon a careful objective review of all possible sites within Ocean County. This review was done by our consultants with the full participation of the Ocean County Citizens Advisory Committee on Resource Recovery and the County Solid Waste Advisory Council.

The Plan Amendment also proposes a new schedule for consideration as an Amendment to the Administrative Consent Order between the Board and the Department. I would note that the revised schedule does not change the date for the proposed facility to become operational; it simply changes intermediate target dates.

The County's consultants and Advisory Committees are currently working to complete the required transportation element for our Solid Waste Management Plan. This is an aspect of the County's Plan that has yet to be certified by the Department. As I am sure you can appreciate, the Board felt that we should act on the recommendations of our committees and consultants at this time rather than waiting so that the transportation issues could also be addressed in this Amendment. Now that the siting decision has been finalized, the Board has instructed its consultants to complete the transportation work along with completion of the preliminary Environmental Impact and Health Statement which under the new schedule is proposed to be submitted to the Department early next year.

The Board appreciates your consideration of this proposed Amendment. If you or your staff have any particular questions, please feel free to contact me or Mr. Steven Pollock, Ocean County Planning Director.

Very truly yours,

Joseph H. Vicari

Joseph H. Vicari
Freeholder Director

JHV:mjb
Enclosure
cc: Board of Chosen Freeholders
Benjamin H. Mabie, Administrator
John Sahradnik, Esq., Assistant County Counsel

R E S O L U T I O N

October 7, 1986

WHEREAS, The Ocean County Board of Chosen Freeholders has adopted and the Commissioner of the New Jersey Department of Environmental Protection has certified, as required by State law, a Solid Waste Management Plan for Ocean County which provides for the development of a resource recovery facility near the Oyster Creek Nuclear Generating Station in Lacey Township; and,

WHEREAS, during the course of preparation of environmental studies for the proposed facility, it has been determined on the basis of an objective, detailed siting evaluation that a more preferable site for this facility exists within Ocean Township (Waretown); and,

WHEREAS, the County's professional staff, consultants, Citizens Advisory Committee on Resource Recovery and the Ocean County Solid Waste Advisory Council have recommended that the Board of Chosen Freeholders amend the County Solid Waste Management Plan to provide for development of a resource recovery facility at the newly selected Ocean Township (Waretown) site and have recommended a revised implementation schedule for the proposed facility; and,

WHEREAS, a proposed plan amendment report, together with necessary maps and supportive documents, was prepared and publicly distributed, as required by law, and the proposed plan amendment was subject to public comment during a Public Hearing conducted on September 15, 1986 in Ocean Township, the host community; and,

WHEREAS, the Ocean County Board of Chosen Freeholders has carefully considered recommendations of the consultants, the Citizens Advisory Council and the Solid Waste Advisory Council and has further considered both oral and written comments and testimony from the Public Hearing.

NOW, THEREFORE, BE IT RESOLVED that the Ocean County Board of Chosen Freeholders hereby adopts amendments to the Ocean County District Solid Waste Management Plan as set forth in a document entitled, **AMENDMENT TO THE OCEAN COUNTY DISTRICT SOLID WASTE MANAGEMENT PLAN, DATED OCTOBER 7, 1986.** Specifically these amendments provide for the following:

#1. Deletion of the Lacey Township site currently designated for the construction of the resource recovery facility.

#2. Addition of a site in Ocean Township (Waretown) for the construction and development of the proposed resource recovery facility.

#3. Revision of the implementation schedule for the development of the proposed facility.

BE IT FURTHER RESOLVED copies of this resolution and the plan amendment report, copies of the Public Hearing transcript, and other pertinent information be submitted to the Commissioner of the New Jersey Department of Environmental Protection for State certification, as required by law, and that copies of this resolution be forwarded to the Ocean County Solid Waste Advisory Council, Ocean County Citizens Advisory Committee on Resource Recovery, Ocean County Legislators, Ocean County Mayors, and other parties, as required by law.

I certify the foregoing to be a true copy of a Resolution adopted by the Board of Chosen Freeholders of the County of Ocean on the 7th day of October 1986.

OCEAN COUNTY
BOARD OF CHOSEN FREEHOLDERS

JOSEPH H. VICARI
FREEHOLDER-DIRECTOR

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JAMES J. MANCINI

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H. George Buckwald	Freeholder
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Thomas Cervasio	Lacey Township
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Dr. John Kengeter	Community Memorial Hospital
Frank Krajacich	Carpenters & Millrights, Local Union 2018
Ron Krajcsovics	Ocean County Federation of Sportsmens Clubs
Arnold Mohel	Ocean County Solid Waste Advisory Council
Bart Palmer	Manchester Township
Marge Peary, Chairperson	Serious Taxpayers Opposed to Pollution
Bruce Rosetto, Chairman	Consolidated Waste Services, Inc.
Pearl Schwartz, Chairperson	League of Women Voters
David Shadle	Jersey Central Power and Light Company
Jack Taggert, Chairman	Citizens Conservation Council
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Art Williamson	Toms River Chamber of Commerce

TASK FORCE CHAIRPERSONS

Marge Peary	Air Quality & Environmental Health Task Force
Bruce Rosetto	Facility Need Task Force
Pearl Schwartz	Siting Criteria Task Force
Jack Taggert	Environmental Impact Task Force
George Tompkins	Traffic & Transportation Task Force

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INTRODUCTION

This document is an amendment to the Ocean County District Solid Waste Management Plan. State law requires that the County have such a Plan and that it be amended from time to time to meet changing needs.

This amendment has been prepared at the direction of the Board of Chosen Freeholders, based upon the recommendations of the Ocean County Citizens Advisory Committee on Resource Recovery and the County's professional staff, consultants and advisors. It has been reviewed by the Ocean County Solid Waste Advisory Council and presented at a public hearing held on September 15, 1986 in Ocean Township (Waretown), the host community for the proposed resource recovery facility. The hearing record remained open for the submission of written comments until September 26, 1986. In addition, the proposed amendment was informally reviewed with staff members of the N.J.D.E.P. Division of Waste Management staff.

In consideration of the comments made at the hearing and the written comments received, the Board made minor revisions in the amendment. In addition, the Board's staff, consultants and advisors have prepared a separate report responding to the comments received at the public hearing and submitted in writing

prior to the close of the record on September 26, 1986. This report is part of the record of the proceedings leading to the adoption of this amendment. State law requires that the amendment, after adoption, be submitted to the State Commissioner of Environmental Protection for approval before it becomes effective.

This amendment makes two changes in the current Ocean County District Solid Waste Management Plan:

* The designation of a site in Lacey Township for the construction of proposed resource recovery facilities is changed to a site in Ocean Township (Waretown);

* Intermediate dates in the agreed-upon facility construction schedule are changed. The proposed date for facility completion is not changed.

BACKGROUND

The Ocean County Board of Chosen Freeholders adopted the Ocean County District Solid Waste Management Plan on July 18, 1979 in accordance with the Solid Waste Management Act (P.L. 1975, c. 326). With changes made at the direction of the Commissioner of Environmental Protection, that Plan was approved July 31, 1980.

Amendments to the Plan, adopted by the Freeholders on November 28, 1984, were approved by the Commissioner on April 8, 1985. The Plan's strategy for the disposal of Ocean County solid waste has three elements:

* An aggressive recycling program to recover from the waste stream materials that can be reused;
* The construction of a waste-to-energy facility (resource recovery) to burn safely non-recyclable waste, using the heat to generate electricity;
* The use of modernized landfill for the disposal of wastes which can neither be recycled nor burned, and for the disposal of the ash residue from the resource recovery process.

This three-part strategy is not changed by this amendment. However, the need for certain refinements of the Plan has become apparent in the course of carrying out its provisions.

Professional Services Contract

In order to advance the resource recovery project the Freeholders, on July 1, 1985, issued a Request for Proposal to five qualified consulting firms. Four proposals were received and reviewed by a special committee established by the Board; presentations by the four proposers were made to the Solid Waste Advisory Council. On the basis of the recommendations of these groups the Freeholders selected the firm of Gershman, Brickner & Brattion Incorporated in association with Elson T. Killam Associates. A contract was entered into on November 13, 1985 to perform resource recovery advisory services as defined by the following seven tasks:

1. Transportation Routing and Cost Analysis
2. Environmental Impact Statement
   - 2.1 Data Resource Report
   - 2.2 Resource Recovery Siting Analysis
   - 2.3 Preparation of a Draft EIS
   - 2.4 Final Draft EIS
3. Project Management and General Advice
4. Preparation of Request for Qualifications
5. Preparation of Request for Proposals
6. Participation in Evaluation of Qualification Statements and Proposals

7. Contact Negotiations and Project Development Coordination

This work is now well underway and the completion of Task 2.2, the Resource Recovery Siting Analysis has resulted in the need for this Plan Amendment.

Public Participation

In order to enhance public participation, the Board of Chosen Freeholders in September 1985 established a Citizens Advisory Committee on Resource Recovery (CAC). It was appointed to serve as a focal point for public involvement in resolving the public policy issues related to the County's resource recovery program. The committee is comprised of eighteen (18) County residents representing a broad cross-section of interests and concerns including business, industry, environmental, health and other public interest groups, local government, and potential facility host communities. The Committee organized five task forces: Need; Siting Criteria; Air Quality and Environmental Health; Environmental Impacts; and Traffic and Transportation. The task forces, which are chaired by committee members, are made up of any and all citizens who wish to participate.

The committee and its task forces have held frequent, open meetings receiving and discussing reports from the consultants as work proceeded under their contract tasks. (see Appendix A) The Citizens Advisory Committee will continue to work with the county's consultants and professional staff to address public policy issues. The Siting Criteria Task Force and the Citizens Advisory Committee have played a key role in the deliberations leading to this Plan Amendment.

ENVIRONMENTAL AND HEALTH IMPACT STATEMENT - SITING

The work of the consultants which so far has received the most attention of the Citizens Advisory Committee and of the public is the siting aspect of the preparation of the Environmental and Health Impact Statement.

In the existing Ocean County District Solid Waste Management Plan, a site in Lacey Township next to the Oyster Creek Nuclear Generating Station is designated as the proposed location for the resource recovery facility. Being so designated means that it is tentatively selected based upon its apparent advantages but still subject to the rigors of the Environmental and Health Impact Statement (EHIS) process before the proposed facility can proceed to permitting and construction. One of the most important elements of the EHIS is an examination of alternative sites to determine, on the basis of objective analysis, if there is in fact another location for the facility which is clearly preferable to the designated site. This evaluation, which was performed by GBB-Killam, is a process of identification, elimination and comparison. This process is briefly described in the following paragraphs. (See Appendix B for the full text of the GBB-Killam report.)

TASK 1: Definition of "Ideal" Site Characteristics

This task involved the development of a list of site characteristics which would describe the ideal site for the facility. The list was prepared in conference with the CAC. It forms a set of standards, against which real-world sites can be measured. It also helps in the development of siting criteria, to be sure that all relevant attributes of potential sites are considered.

TASK 2: Primary Screening

This task involved the application of "exclusionary" criteria to the County as a whole. This defines areas where the facility would be unsuitable and narrows down the viable areas which are to be further studied. Areas described below were judged to be unsuitable for the construction of the resource recovery facility, and were eliminated from consideration through this process:

1. Areas within the Pinelands designated as Preservation, Forest, Agricultural Development, and Rural Development Areas, in which the Pinelands Commission has permitting authority.
2. Floodplains or areas within 300 feet of floodplains.
3. Wetlands or areas within 300 feet of wetlands.

4. Areas within 1000 feet of developed residential/commercial lands based on 1982 aerial photography.
5. Areas which are designated to be unsewered, as defined by the existing County 208 plan.
6. Existing Parkland or Green Acres areas.
7. Areas within 500 feet of designated Wild and Scenic Rivers.

TASK 3: Secondary Screening

The next step in the site selection process involved the screening of all ninety (90) land areas which survived all of the primary screening criteria. This "secondary" screening employed additional exclusionary criteria which are generally not mappable and are more appropriately applied on a site-specific basis. Secondary screening criteria were applied. Sites falling into any of these categories were rejected from consideration:

1. Areas within 2500 feet of schools or hospitals.
2. Areas which are accessed by roadways with unacceptable transportation restrictions. For example, sites which require access roadway construction through wetlands were rejected.

3. Sites which contain less than 20 acres of contiguous usable land in industrial zones were rejected, and sites which contain less than 75 acres of contiguous usable land in residential zones were rejected.

4. Sites at which sufficient water supply is not available were rejected. This primarily included sites in the so-called water critical zones in the northern part of the County. In this study, areas in which the Kirkwood formation was present at depths of 50 feet and less were excluded.

As a result of the application of these secondary criteria, twenty-one (21) sites were judged to be potentially feasible. (An additional site advanced for a specific proposal by Thermo Electron Inc. in Little Egg Harbor was added to this list.)

TASK 4: Site Ranking

The twenty-two (22) candidate sites were ranked on the basis of defined criteria in order that each site could be tested against each criterion and given a numerical score which reflects its suitability. The recommendations of the Citizens Advisory Committee and, in particular, its Siting Criteria Task Force, were an important part of the ranking process.

Not all criteria are equally important. Therefore, the CAC and GBB-Killam weighted the criteria, reflecting their importance. The site-ranking criteria and the weight assigned to each are listed below:

Site Ranking Criteria	Weight
LAND USE COMPATIBILITY	
On-site Zoning	6.7
Adjacent Zoning	6.0
Availability of Buffer	3.1
Proximity to Historic Sites	2.5
Subtotal	18.3
COST FACTORS	
Site Development	3.9
Transportation	6.9
Ash Disposal	3.7
Proximity to Power Grid	2.5
Subtotal	17.0

Site Ranking Criteria	
PEOPLE	
Proximity to Residential Areas	14.6
Proximity to Schools and Hospitals	5.9
Proximity to Community Centers	5.6
Proximity to Recreational Areas	5.1
Subtotal	31.2
TRAFFIC	
Nuisance Impacts - Access Related	9.7
Existing Traffic Congestion	6.5
Road Classifications	5.9
Subtotal	22.1
DEVELOPMENT	
Distance to Water Table	6.9
Site Acquisition (Number of Parcels)	4.5
Subtotal	11.4
TOTAL	100.00

After review and approval by the CAC, the results of the ranking produced the following six highest scoring sites (the Lacey site, which scored first, and the five next-ranking alternatives).

Alternative Site Rank	Score	Identifier	Descriptive Name
*	263	LA-4	Oyster Creek site, Lacey
1	262	M-4	ASARCO site, Manchester
2	249	O-1	Ocean Township (Waretown)
3	247	LK-4	Stavola Quarry, Lakewood
4	238	LE-2	Old North Green Street, Little Egg Harbor
5	233	D-3	Ciba-Geigy site, Dover

TASK 5: Site Investigations

The top five scoring sites and the Lacey site were given further evaluation. All sites except Manchester were field investigated and all of the sites were observed via two helicopter flights. Additional data was gathered for each site as available. Contact was made with local officials and property owners and as well as with the State Division of Coastal Resources, the Pinelands Commission, the State Division of Fish, Game and Wildlife, and the New Jersey Highway Authority. Additional evaluations were

made under the headings of buffer/visual impacts, site development assessment, residential proximity, traffic/nuisance impacts, soils, threatened/endangered species, ability to secure interchange improvements (Lacey and Ocean Township - Waretown only) and other considerations including consistency with CAFRA and Pinelands policies.

TASK 6: Evaluation and Comparison of Finalist Sites

In comparing the finalist sites, they were separated into two categories. The group of less suitable sites included Lakewood, Manchester and Ciba-Geigy. The principal basis of this differentiation was residential proximity and traffic.

With respect to the more desirable group (Little Egg Harbor, Lacey and Ocean Township - Waretown), it was concluded that the Little Egg Harbor site is less desirable than either Lacey or Ocean Township (Waretown) essentially because of higher transportation costs and its presence in a limited growth zone under CAFRA regulations. A comparison of Lacey and Ocean Township (Waretown) shows:

Criterion	More Suitable Site (Lacey or Ocean Twp. - Waretown)
Buffer Zone	Ocean Township (Waretown)
Transportation Costs	Equivalent
Proximity to Residential	Lacey (slight advantage)
Traffic	Equivalent
Soils	Ocean Township (Waretown)
Consistency with Pinelands	Equivalent
Consistency with CAFRA	Ocean Township (Waretown) (based on soil conditions)
Threatened/Endangered Species	Equivalent
Other Considerations	Lacey is designated site Ocean Twp. (Waretown) has community support

A recommendation as to which of these sites is preferable is a matter of some judgment involving weighing the importance of each of the parameters which distinguish the two sites. It is GBB-Killam's opinion that the Ocean Township (Waretown) site is preferable based on all of the considerations which have been discussed.

GBB-Killam made the recommendation that the Ocean Township (Waretown) site be selected as the site contingent upon an official response from the New Jersey Highway Authority that the needed Parkway interchange improvements can be made.

New Jersey Highway Authority Response

Throughout the site evaluation process, in considering the feasibility of either the Lacey Township or Ocean Township (Waretown) sites, it was understood that access from the Garden State Parkway is an indispensable feature. Accordingly, the Highway Authority was asked to consider a dedicated interchange to serve the designated Lacey Township site and an expanded interchange No. 69 to serve the proposed Ocean Township (Waretown) alternative. The Authority rejected the dedicated interchange to serve the Lacey site and adopted a resolution directing the Authority's Director to negotiate an agreement with the County of Ocean for the interchange expansion required to serve the Ocean Township (Waretown) site. (See Appendix C)

RESOURCE RECOVERY SITE RECOMMENDATION

On the basis of the site evaluation process results, the recommendations of GBB-Killam, the lengthy public discussions of site preferences, and the willingness of the Highway Authority to negotiate a needed interchange expansion, the Siting Criteria Task Force and the Citizens Advisory Committee itself voted to recommend to the Freeholders that the designation of the resource recovery site be changed from Lacey Township to the proposed Ocean Township (Waretown) location. The Freeholders accept this recommendation and accordingly present it in this Plan amendment.

The Ocean Township (Waretown) site, evaluated and recommended by GBB-Killam and by the Citizens Advisory Committee and shown in Appendix D, is designated as the site for the Ocean County resource recovery facility. Development of the resource recovery facility on this site is subject to completion of the Environmental and Health Impact Statement process, successful permitting of the proposed facility, completion of a financial plan and selection of a qualified vendor to develop the facility.

Resource Recovery Siting Amendment

The Ocean County District Solid Waste Management Plan is hereby amended to change the site location for the construction of

the proposed Resource Recovery Facility. The construction of said facility shall take place at a site in Ocean Township (Waretown). A lot and block description of this property together with site location maps is provided in Appendix D of the Amendment.

DEVELOPMENT SCHEDULE REVISIONS

On September 27, 1984 the Board of Chosen Freeholders and the State Department of Environmental Protection entered into an Administrative Consent Order (Order) setting forth a step-by-step schedule for the development of resource recovery facilities in Ocean County under the sponsorship of the Board.

Extensive public participation has greatly aided the process but somewhat extended the time needed to meet the milestones contained in this Order. Additionally, careful public examination of alternative sites has led to the selection of a new site. Consequently, the Environmental and Health Impact Statement work must begin at the Ocean Township (Waretown) site which is now designated. It is now expected that the Preliminary Environmental and Health Impact Statement can be submitted to the Department by February 1, 1987 (milestone #14). Specific revisions to milestones 14 through 18 and milestones 22 and 23 of the Order are set forth below in the Development Schedule Amendment. All other milestones contained in the Order shall be completed on the date scheduled. No change is recommended in the date for the completion of facility construction.

Development Schedule Amendment

Milestones 14 through 18 and milestones 22 and 23 contained in the Order are revised to read as follows. Milestones 18 through 21, which are not revised have been included for the sake of consistency.

Milestone Number	Description
14.	Not later than February 1, 1987 the County shall submit to the Department the Preliminary EHIS for the resource recovery facility.
15.	Not later than April 1, 1987 the Department shall complete its review and issue its decision on approval of the Preliminary EHIS.
16.	Not later than July 1, 1987 the County shall adopt amendments to its Solid Waste Management Plan specifying ownership and a financial plan for the procurement and implementation of its resource recovery facility.
17.	Not later than November 1, 1987 the Department shall complete its review and render its decision on approval of the County's Plan amendments.
18.	Not later than December 1, 1987 the County shall acquire any necessary property or interests therein for the resource recovery facility.

19. Not later than January 1, 1988 the County shall release a request for proposals for design, construction and operation of the resource recovery facility in accordance with the approved ownership and financing plan.

20. Not later than April 1, 1988 the County shall designate a vendor for the resource recovery facility.

21. Not later than July 1, 1988 the County or its designated vendor shall complete negotiations and award a contract for design, construction and operation of the resource recovery facility.

22. Not later than January 1, 1989 the County or its designated vendor shall submit to the Department the final EHIS and complete applications for all necessary permits relative to the resource recovery facility.

23. Not later than November 1, 1989 the Department shall complete its review and render its decision on approval of the final EHIS and permit issuance.

APPENDICES

A. List of Ocean County Solid Waste Advisory Council and Citizens Advisory Committee and Task Force public meetings.

B. Preliminary Site Selection Report, Ocean County Resource Recovery Project, GBB-Killam, July 22, 1986.

C. Authorizing Resolution 86-178 from New Jersey Highway Authority, July 24, 1986.

D. Ocean Township (Waretown) Site Location Maps and Property Description.

APPENDIX A

OCEAN COUNTY SOLID WASTE ADVISORY COUNCIL

and

CITIZENS ADVISORY COMMITTEE

and

TASK FORCE PUBLIC MEETINGS

LISTING OF PUBLIC MEETINGS HELD CONCERNING THE OCEAN COUNTY RESOURCE RECOVERY PROJECT FROM OCTOBER 1985 THROUGH SEPTEMBER 1986

1985	October	3	- Citizens Advisory Committee - regular meeting
	October	29	- CAC - special public informational meeting
	November	12	- CAC - regular meeting
	December	10	- CAC - regular meeting
1986	January	9	- Facilities Needs Task Force
	January	14	- CAC - regular meeting
	January	15	- Transportation Task Force
	January	21	- Ocean County Solid Waste Advisory Council Meeting
	January	28	- CAC - special public informational meeting
	January	30	- Siting Criteria Task Force
	February	11	- CAC - regular meeting
	February	18	- SWAC meeting
	February	18	- Siting Criteria Task Force
	February	20	- Air Quality Task Force
	February	25	- CAC - special public informational meeting
	March	10	- Facility Needs Task Force
	March	11	- CAC - regular meeting
	March	27	- Siting Criteria Task Force
	April	3	- Air Quality Task Force
	April	8	- CAC - regular meeting
	April	28	- SWAC meeting
	May	8	- Air Quality Task Force
	May	13	- CAC - regular meeting
	May	27	- SWAC meeting
	June	5	- Facility Needs Task Force
	June	5	- Air Quality Task Force
	June	10	- CAC - regular meeting
	June	23	- SWAC meeting
	June	24	- Facilities Needs Task Force
	July	8	- CAC - regular meeting
	July	16	- Facility Needs Task Force
	July	22	- Siting Criteria Task Force
	July	28	- SWAC meeting
	August	12	- CAC - regular meeting
	August	25	- SWAC meeting
	September	9	- CAC - regular meeting
	September	15	- Ocean County Board of Chosen Freeholders Public Hearing on Solid Waste Plan Amendment
	September	22	- SWAC meeting

Resource Recovery Facility Tours

October 24, 1985 - Peekskill, New York
April 23, 1986 - Baltimore, Maryland
September 11, 1986 - Peekskill, New York

APPENDIX B

GBB - KILLAM REPORT

OCEAN COUNTY RESOURCE RECOVERY PROJECT

-PRELIMINARY-

SITE SELECTION REPORT

JULY 22, 1986

INTRODUCTION

This report summarizes work which has been completed on behalf of the Ocean County Board of Chosen Freeholders in connection with the siting of a Resource Recovery Facility in Ocean County, New Jersey.

The Ocean County Board of Chosen Freeholders has developed a Solid Waste Management Plan which is intended to provide for the future needs of the County with respect to solid waste disposal. The "solid waste" which this Plan seeks to manage includes normal household garbage, commercial solid waste, and non-hazardous industrial solid waste. The Plan, which was formally approved by the Freeholders and subsequently approved by the New Jersey Department of Environmental Protection includes three elements. The first element is the development of a recycling program which is intended to minimize the quantity of solid waste which must be dealt with via the second and third elements of the plan. The second element involves the construction of a resource recovery facility, with the third element consisting of landfills.

Under the Plan, two regional landfills are designated to provide solid waste disposal facilities for solid waste generated in the district. The southern facility owned and operated by the Southern Ocean Landfill Inc. in Ocean Township will receive solid waste generated in designated municipalities until 1990. In 1990, this facility is required to cease operations under the requirements adopted by the Pinelands Commission . This landfills's waste flows will be redirected unless the Southern Ocean Landfill obtains a waiver from the closure requirements permitting it to operate; pursuant to the terms and conditions of the waiver, until the resource recovery facility is operational.

In the event that no waiver is obtained, solid waste formally disposed of at this facility will be directed to the northern facility, owned and operated by Ocean County Landfill Corporation Inc., in Manchester Township. The northern facility will dispose of this solid waste , and solid waste from designated municipalities within the district until 1992, at which time the Plan calls for the resource recovery plant to become operational. After the plant is operational the northern landfill is expected to receive ash which is a by-product of the combustion of the waste, as well as non-burnable components of the waste (bulky items such as discarded appliances, tree stumps, rubble, etc.). In addition, the landfill would be used to accept waste which could not be accomodated at the energy recovery facility for any reason, such as during periods of "down-time", or during seasonal peaks when the waste flow exceeds the capacity of the plant.

With respect to the resource recovery facility itself, it is thought at this time that the facility will process waste via a combustion process, and will recover energy in the form of either steam or electricity. The size of the facility has not been finalized at this time, however, a capacity of approximately 1500 tons per day is considered likely.

The Solid Waste Management Plan, in addition to incorporating the concept of an energy recovery facility, also specified a site for the facility. This site is in Lacey Township, adjacent to the Garden State Parkway. The parcel of property on which this site is located is also the location of the Oyster Creek Nuclear Generating Station, operated by Jersey Central Power and Light Company.

The County is now in the process of developing the resource recovery project in compliance with the requirements of the Plan and in conformance with a Consent Order mutually agreed to between the Freeholders and the State of New Jersey. The current phase of the project's development involves the preparation of an Environmental Impact Statement. This document will result from a study which is intended to select the conceptual configuration of the facility, and todefine the environmental impacts which will result from its construction and operation. Projected impacts which are adverse will be mitigated through modifications in the project configuration, or through constraints in its design. As a secondary purpose, this document is necessary in order to secure the necessary permits and approvals from the Department of Environmental Protection.

One of the elements of the Environmental Impact Study is an analysis of alternatives to the project as defined in the Plan. These alternatives will include various technologies which could be utilized, plant capacities, physical configurations, and facility sites. The purpose of this siting study is to specifically evaluate alternatives to the designated site in Lacey Township, known as the Oyster Creek Site. If this study were to show that a site other than the Oyster Creek site is clearly preferable for the location of the facility, then that site would be recommended to the Freeholders for their approval via a proposed amendment to the Plan.

In an attempt to fulfill this objective in a systematic and rational manner, the following steps were outlined as Tasks to be conducted in this study. This report is organized along these lines:

Task #1 - Definition of "Ideal" Site Characteristics. This task involves the development of a list of site characteristics which would describe the ideal site for the facility. This forms a set of standards, against which real-world sites can be measured. It also helps in the development of siting criteria, in that we can be sure that all relevant attributes of potential sites are considered.

Task #2 - Primary Screening. This task involves the application of "exclusionary" criteria to the County as a whole. This defines areas where the facility would be unsuitable and narrows down the viable areas which are to be further studied.

Task #3 - Secondary Screening. This process involves the identification of potential sites, which meet all of the primary screening criteria and the minimum acreage requirements for the facility. This is followed by the elimination or screening of sites based on specific criteria which cannot be mapped on a County-wide scale due to their more site-specific nature.

Task #4 - Site Ranking. This process involves the comparison of sites which meet all of the primary and secondary screening criteria. This is done on the basis of definable criteria against which the sites can be given a numerical suitability rating. This procedure is intended to identify the best or most suitable sites among this group.

Task #5 - Site Investigations. Having developed a "short list" of the most suitable sites in Task #4, field inspections are conducted in this task. This is intended to provide first hand information of the character and suitability of the sites. In addition, this task involves further data gathering from appropriate sources in an attempt to identify and evaluate any issues which are relevant to the feasibility of each of the sites. This includes discussions with regulatory agencies, local officials, or others who may have site-specific information.

Task #6 - Evaluation and Comparison of Finalist Sites. In this task, the information developed above is synthesized in order to exclude any of the finalist sites which may not be feasible based on the information developed in Task #5, to compare the remaining feasible sites, and to make a recommendation regarding the site judged to be best for the development of the resource recovery facility.

TASK #1 - DEFINITION OF "IDEAL" SITE CHARACTERISTICS

Before attempting to undertake the siting process, it is first necessary to establish what some of the characteristics of an ideal site are. That is, if we were to envision a perfect site for a facility of this type in Ocean County, what would that site look like? It is necessary to keep in mind when reviewing the list below what the completed facility looks like, how it operates, and what its effects will be. In our opinion, the characteristics of an ideal site include:

1. The site should be located at or near the geographical center of the County with respect to points and quantities of waste generation. That is, the geographical center should be adjusted in terms of waste sources and amounts. This will tend to minimize transportation costs.

2. The site should be located in close proximity to major transportation routes. This will avoid impacts on local roadways.

3. The site should be remote from existing residential development. This will minimize impacts on people.

4. The site should not contain any floodplains or wetlands. This will minimize impacts on these sensitive environmental areas.

5. The site should not be located in land zones which are intended for preservation or restricted growth, such as Pinelands Preservation Zones.

6. The site should not contain any habitat which is significantly sensitive or which contains rare/endangered species.

7. The site should have access to ample potable water supplies for cooling and should have access to public sewers.

8. The site should not contain active, productive land uses.

9. The site should be in an industrial zone, if possible.

10. The site should contain adequate buffer to minimize any visual impacts.

11. The site should not contain or be near any sensitive environmental areas or sensitive receptors, such as historic sites, nursing homes/hospitals, schools, etc.

12. The site should be located at least 10 kilometers from areas designated under the air quality regulations as either "Class One Areas" or "Non-attainment" areas. This will avoid severe cost penalties associated with significantly higher emission standards.

13. The site should not contain any features or characteristics which would render it unpermittable under the various regulations which affect land use siting decisions.

The identification of these characteristics was useful in the development of siting criteria in the following three tasks. It enabled Killam to design specific criteria which address each of these concerns, while providing some assurance that valid concerns have not been overlooked.

TASK #2 - PRIMARY SCREENING

The siting process can be described as a process of elimination, identification, and comparison. Since all locations within the County were initially considered to be potential sites, the first step in the siting process was the elimination of those areas which were obviously unsuitable for a resource recovery facility. This was done by mapping defined unsuitable areas on a map, a process called primary screening. Parameters which were mapped in this task were called primary screening criteria. A list of the criteria mapped in this task is presented below, along with an explanation as to the reasons for their inclusion. The areas described below were judged to be unsuitable for the construction of the resource recovery facility, and were eliminated from consideration through this process.

1. Areas within the Pinelands designated as preservation or protection in which the Pinelands Commission has permitting authority.

Rationale: A large portion of Ocean County is located within the federally designated Pinelands National Reserve and the State designated Pinelands Area. The Pinelands Commission has adopted the Pinelands Comprehensive Management Plan that sets forth land use policies and regulations that affect facility siting in these designated areas. In the Pinelands Area, the Pinelands Commission maintains direct permitting authority, in part through certification of municipal and County land development plans and ordinances. In the Pinelands National Reserve the Division of Coastal Resources is responsible for implementing Pinelands requirements through its Coastal Zone Policies (CAFRA). According to the Pinelands Commission the siting of resource recovery facilities in the Pinelands Area (generally lands west of the Garden State Parkway) are permitted only in areas designated as Regional Growth Districts or Pinelands Towns. A waiver of this requirement for other Pinelands Land Capability Districts is only acceptable if it can be demonstrated that no other alternative site exist s in a Regional Growth District or Pinelands Town or outside the Pinelands Area for the location of those facility. Clearly, other alternatives do exist. Based on this assumption all lands within the Pinelands Area not designated as Regional Growth District were excluded in the primary screening task.

2. Floodplains or areas within 300 feet of floodplains.

Rationale: The proposed resource recovery facility should not be located within floodplains or flood prone areas. This will avoid impacts on the facility itself as well as on the environment. Development in floodplains and wetlands adversely affects stream hydrology, groundwater recharge, and biological habitat. CAFRA regulations state that development within 300 feet of designated floodplains should be avoided.

3. Wetlands or areas within 300 feet of wetlands.

Rationale: The facility should not be located in wetlands for reasons similar to the avoidance of floodplain areas, including stringent CAFRA regulations which render many projects which involve wetland development unpermittable.

4. Areas within 1000 feet of developed residential/commercial lands.

Rationale: Solid waste facilities are not directly compatible with residential land uses. while this is due to public perception more than technical reasons, it is a valid observation nonetheless. To avoid conflicts and potential impacts, these facilities should be located in undeveloped areas or in compatible industrial areas.

5. Areas which are designated to be unsewered, as defined by the existing County 208 plan.

Rationale: In order to properly operate a resource recovery facility, it is necessary to dispose of a significant volume of wastewater. This wastewater includes sanitary waste from workers who operate the facility, as well as wash-down water, boiler blow-down water, etc. This assumes that the "standard" configuration for cooling facilities is used (water cooling with cooling towers) as opposed to the more costly air-cooled condensers. We estimate that the volume of this wastewater would be in the range of 50,000 to 100,000 gallons per day. In our opinion, this wastewater cannot be disposed of via septic systems or via treatment systems which discharge to local streams or groundwaters. Therefore, a prerequisite of any site is that it afford access to sanitary sewers. While it is desirable for a site to have a sewer with sufficient capacity nearby, it is possible for a sewer line extension to be constructed to accommodate the facility. Of course there are economic and practical limits to how much sewer construction is possible without affecting the feasibility of the site. However, an even more important constraining factor is the presence of delineated sewer service areas in the County's 208 Areawide Wastewater Master Plan, which has been approved by the State. This plan is part of integrated State-wide planning which earmarks certain areas of the County to be sewered at some point in time when it is necessary and economically feasible to do so. The plan also states that other areas will not be sewered in the future. Even though it may be economically feasible to extend a sewer line to a resource recovery facility located in one of these areas, to do so will conflict with this plan and would be prohibited. Therefore, those areas which are designated by the 208 Plan to remain unsewered are considered unsuitable for the construction of a resource recovery facility.

6. Existing Parkland or Green Acres areas.

Rationale: Areas of the County which have been purchased, developed or set aside for park use should not be considered for the siting of a resource recovery facility. As parks are, by definition, areas set aside for present and future public recreational use, their use for any other purpose should be disallowed.

7. Areas within 500 feet of designated Wild and Scenic Rivers.

Rationale: New Jersey regulations designate Cedar Creek as one of the State's Wild and Scenic Rivers. This affords the river and the adjacent river corridor some degree of protection from development, to enhance the preservation of these areas for the benefit of present and future generations.

8. Areas within 5000 feet of airports which accommodate propeller aircraft and areas within 10000 feet of airports which accommodate jet traffic.

Rationale: Federal Aviation Administration regulations prohibit the location of landfills within the radii specified above. While the concerns present at landfills are not the same as for resource recovery facilities (landfills attract birds in large numbers), the presence of a tall stack raises some concern. Therefore, the FAA policy for landfills was followed for the purposes of the primary screening task.

Following the development of these criteria, a composite United States Geological Survey map of the entire County was constructed (consisting of four segments) Overlays were attached to these maps which were used to plot the areas which are excluded by the primary criteria. Following the completion of this mapping, the completed overlays were evaluated. This showed that 80 to 90 discrete land areas within the County met all of the defined primary screening criteria. These areas were further processed in Task #3.

TASK #3 - SECONDARY SCREENING

The next step in the site selection process involved the screening of all land areas which met all of the primary screening criteria. This "secondary" screening employed criteria which are generally not mappable and are more appropriately applied on a site specific basis. The secondary screening criteria employed included the following (Sites falling into any of the categories below were rejected from consideration. These are considered to be "go/no go" criteria):

1. Areas within 2500 feet of schools and hospitals.

Rationale: This is a preference criterion, in that we choose to avoid the location of a facility in close proximity to these uses. In the case of Ocean County, we felt that a sufficient number of potential sites are available which are adequately distant from these types of facilities.

2. Areas which are accessed by roadways with unacceptable transportation restrictions. For example, sites which require access roadway construction through wetlands were rejected.

Rationale: In previous portions of the process, we sought to avoid site related impacts on sensitive areas. Following the same reasoning, we tried to avoid similar impacts due to access road construction.

3. Sites which contain less than 20 acres of contiguous usable land in industrial zones were rejected, and sites which contain less than 75 acres of contiguous usable land in residential zones were rejected.

Rationale: This represented an attempt to insure that sufficient buffer was available on-site to adequately buffer the facility. In industrial zones, the minimum buffer requirement is judged to be less than in residential areas.

4. Sites which contain existing residential development within 1000 feet, or which contain approved final subdivisions within 1000 feet were rejected.

Rationale: In the primary screening process, all areas within 1000 feet of existing residential/commercial development were excluded. However, the most up to date data source for this information was 1982 aerial photographs. Therefore, development which may have occurred between 1982 and 1986 may not have been accounted for in this process. In addition, final subdivisions which may not even be visible at present are considered to have the same standing as existing development and are addressed by this criterion.

5. Sites at which sufficient water supply is not available will be rejected. This primarily included sites in the so-called water critical

zones in the northern part of the County. In this study, we excluded areas in which the Kirkwood formation was present at depths of 50 feet and less.

Rationale: This is a preference criterion, in that we sought to preserve the more cost-effective option of using water cooling at the facility.

As a result of the application of these secondary criteria to the available sites, a total of 21 sites were judged to be potential feasible. That is, these 21 sites were judged to meet all of the primary and secondary screening criteria. In addition to these 21 sites, an additional site was added to the list based on the fact that this site has been advanced as a proposed site for a specific proposal by Thermo Electron in Little Egg Harbor. This site marginally failed one of the primary screening criteria but was nonetheless ranked in Task #4. These sites are listed below and are shown on the Alternative Site Location Map:

	Identifier	Descriptive Name
1.	BA - 1	Rt. 9 - Barnegat/Ocean border, Barnegat
2.	BA - 2	Pancoast Road/Parkway site, Barnegat
3.	BA - 3	Pancoast Road/Rt. 72 site, Barnegat
4.	BA - 4	Barnegat Industrial Park site, Barnegat
5.	BK - 2	OCUA Bayville site, Berkeley
6.	BK - 3	Cedar Creek site, Berkeley
7.	D - 3	Ciba-Geigy site, Dover
8.	EA - 1	Eagleswood/Stafford border, Eagleswood
9.	J - 9	Bennetts Mills/Hulse Rd. site, Jackson
10.	LE - 2	Old North Green St., Little Egg Harbor
11.	LE - 3	Frogpond Road site, Little Egg Harbor
12.	LE - 5	Stage Road site, Little Egg Harbor
13.	LE - 6	Thermo Elektron site, Little Egg Harbor
14.	LK - 4	Stavola Quarry, Lakewood
15.	M - 1	Ocean County Landfill Corp., Manchester
16.	M - 2	Manchester site #2
17.	M - 4	ASARCO site, Manchester
18.	O - 1	Waretown site, Ocean
19.	O - 2	Pancoast Road site, Ocean
20.	ST - 2	Old Manahawkin Road site, Stafford
21.	ST - 3	Stafford/Eagleswood border, Stafford
22.	ST - 4	Beachview Ave. site, Stafford

TASK #4 - SITE RANKING

The purpose of the site ranking task is to differentiate those sites which are more suitable for the construction of the resource recovery facility from those sites which are less suitable. Elimination of sites is not the objective of this task. In prioritizing the sites on the basis of their suitability, we can select the most suitable sites from the 22 candidates for the purpose of analyzing their feasibility in more detail.

Sites are ranked on the basis of defined criteria. These criteria were defined in such a manner that each site could be tested against each criterion and given a numerical score which reflects is suitability. In this case, we defined a scoring range from one to three, with the more unsuitable sites scoring a one and the most suitable sites scoring a three for each criterion.

An additional consideration is that not all criteria are equally important. Some are much more important and more greatly affect the ultimate feasibility of a site than others. In order to adjust for this, the criteria are weighted. Assigning a numerical weight to each criterion permits us to mathematically sum the scores yielding a composite site score. This composite score is an indication of the overall feasibility of each site and was used to rank the sites.

During the implementation of Tasks #1 to #3, Killam presented the primary and secondary criteria to the Citizens Advisory Committee on Resource Recovery, and to its Siting Task Force for comment. Killam also presented the interim results as these became available. However, during the development of the ranking criteria, and during the ranking process itself, the Task Force became more actively involved, working with the consulting team to establish and apply the ranking criteria. The discussion below describes each of the ranking criteria which were used to conduct this task and the criteria weights which were agreed upon.

Ranking Criteria

Included below is a discussion of each of the ranking criteria, including the scoring method which was employed in rating the 22 candidate sites:

1. Un-site Zoning - This parameter evaluated the existing zoning of each of the sites. Sites which are zoned industrial were scored a 3. Residential zones were scored 1. Mixed zoning scored 2.

2. Adjacent Zoning - This parameter evaluated zoning within 1000 feet of the site perimeter. Please note that sites in industrial zones were 20 acres in size, while sites in residential zones were 75 acres in size. Sites in residential zones are larger so that wider buffer zones could be maintained. If zoning within 1000 feet was industrial, the site scored 3. If zoning within 1000 feet was residential, the site scored 1. If the zoning was mixed, the site scored 2.

3. Buffer Zone - This factor evaluated the quality and quantity of the buffer available around the selected facility location. In order to score the sites, a formula was developed. This formula required that we measure the distance from the center of the site to the nearest significant public road and the nearest residence. Access roads and minor public unpaved roads were not considered. The formula then calculated the average of these two distances and multiplied the result by a number which represented the type of cover which characterized the buffer. For wooded buffer, this number was three. For open buffer, the number was one. For mixed buffer, the number was two. For each site, then, the formula calculated a number, which was considered to be directly proportional to the quality of the buffer around the site. The higher the number, the better the buffer. Sites with a calculated buffer value of less than 3000 were scored 1. Sites with buffer values between 3000 and 8500 scored 2. Sites with buffer values in excess of 8500 scored three.

4. Historic Sites - In order to score the sites against this parameter, a one mile radius was drawn around each site. The number of properties which were identified as National, State, or local historic properties was counted within this circle. If the number of historic sites was zero, the site scored 3. If the number was one, the site scored 2. If the number was two or greater, the site scored 1. If a historic district was identified within the one mile radius, the site scored 1.

5. Site Development - This parameter considers site development costs which are related to the site's physical location, not including costs which are considered elsewhere. The cost parameters considered here are Parkway improvements, access road construction, water supply costs, and sewer connection costs. Of these four parameters, the most significant, by far, are Parkway improvements. Two sites on the list will require the construction of a new dedicated interchange. Due to the magnitude of these costs, these four sites were scored 1. The remaining sites were evaluated to determine if the construction of access roads, water supply or sewer connections was determined to be "significant." Cut-off points were chosen to represent the levels defined as significant. For access roads, this consisted of 1500 linear feet of road construction. For sewer connections, this consisted of more than 4000 feet of new sewer construction. For water supply, a significant rating was given to those sites which do not have access to nearby public water supplies and must rely strictly on on-site water development. Sites which do not require a new Parkway interchange were scored 3 if they required up to one significant cost item. Sites which do not require a new Parkway interchange and have two or more other significant cost items were scored 2.

6. Transportation Cost - The transportation study which has been conducted concluded that more southerly locations involved greater transportation costs. That study divided the county into three regions, which were north, central, and south. It can be concluded from that study that sites in the north region were associated with the lowest costs, sites in the southern region were associated with the highest costs, and sites in the central region were

associated with mid-level costs. Therefore, sites in the northern region scored 3, sites in the central region scored 2, and sites in the southern region scored 1.

7. Ash Disposal Costs - Since OCLF is the designated ash disposal point in the County, we measured the distance from each site to OCLF. The higher the distance, the lower the site's score. If the distance was less than 10 miles, the site scored 3. If the distance was between 10 and 22 miles, the site scored 2. If the distance was greater than 22 miles, the site scored 1.

8. Power Grid Distance - This parameter considers the cost and difficulty in constructing transmission lines which are necessary to deliver electricity to the nearest available electrical utility. In Ocean County, Jersey Central Power & Light and Atlantic Electric are the two available utilities which share jurisdiction within the county. Their service areas generally do not overlap. We contacted representatives of the two utilities to determine where suitable connection points were within the County. Sites which were within 3000 feet of a connection point were scored 3. Sites between 3000 feet and 8000 feet of a connection point were scored 2. Sites greater than 8000 feet were scored 1.

9. Proximity to Residential Areas - For each site, a circle with a radius of one mile was drawn around the center of the site. Within that circle, the number of structures which could be identified as residential were counted from aerial photographs dated 1982 (the most recent available). If less than 25 residential structures were identified within that circle, the site scored 3. If the number was between 25 and 350, the site scored 2. If the number was greater than 350, the site scored 1.

10. Proximity to Schools and Hospitals - For each site, a circle with a radius of one and a half miles was drawn around the center of the site. The number of schools and hospitals within that circle was counted. Schools are defined as public schools or state-approved private schools. Nursery schools and day care centers were not counted. If no schools or hospitals were within the circle, the site scored 3. If one such facility was present, the site scored 2. If more than one was present, the site scored 1.

11. Proximity to Community Centers - This parameter evaluated the distance from each site to the perceived center of surrounding communities. Unfortunately, the definition and identification of these areas was somewhat subjective. These areas included true community centers in lightly developed municipalities where these existed (such as Waretown and Barnegat), as well as densely developed subdivisions in the Northern part of the County where true community centers are difficult to identify. Sites which were located more than 11000 feet from a community center were scored 3. Site between 6500 feet and 11000 feet from a community center were scored 2. Sites less than 6500 feet were scored 1.

12. Proximity to Recreation Facilities - This parameter evaluates the distance of proposed sites to recreation facilities. These facilities include parks,

green acres areas, wildlife management areas, and golf courses. Ballfields and other recreational facilities associated with schools were not included as these are considered in Parameter #10. Sites less than 2500 feet from recreational facilities were scored 1. Sites between 2500 and 7500 feet were scored 2. Sites more than 7500 feet from recreational facilities were scored 3.

13. Nuisance Impacts (Access Related) - This parameter considers the impacts associated with truck traffic to and from the facility on the primary access route to the facility. In order to assess this impact, the number of residential homes on the access route were counted. In cases where there were two primary access routes, the counts were averaged together. This was the case when southbound trucks used a different route than northbound trucks, generally associated with Parkway exit patterns. Where one route predominated, the major route was used. Residences were counted if they fronted local or county roads on the access route. Residences were not counted if they fronted on State or U.S. Highways. It was felt that these roads are designated for truck traffic, and no penalty should be levied on sites if they used those routes. Sites with 0 to 3 residences on the access route scored 3. Sites with 3 to 25 residences on the access route scored 2. Sites with over 25 residences on the access route scored 1.

14. Traffic Conditions - This parameter considers existing traffic volumes and problems on the primary access route. The County Engineer was consulted concerning known problem areas on the proposed routes. In general, it was determined that sites which utilized roads other than Route 9 or Route 37 west of the Parkway, and did not contain any known problem areas, would receive a score of 3. Sites which utilized Route 9 for any significant length received a score of 2. Sites which utilized Route 9 in the vicinity of Toms River, Route 37 west of the Parkway, or sites which used access routes which were known to contain problem areas, were scored 1.

15. Road Classification - This parameter evaluates the impact that proposed facility traffic will have on local roads and on local traffic. This impact will be greater on roadways which were not designed to accept such traffic. On the other hand, State and Federal Highways which are designed to accept truck traffic will suffer a minimum of impact from truck traffic. Unimproved local roads, typically unpaved, which are in the vicinity of the site will have to be reconstructed in a fashion similar to an on-site access road. Therefore, these were not considered under this parameter, but are instead treated as access roads and are evaluated under Site Development Costs. Therefore, sites which utilize the Parkway, State highways or Federal highways exclusively for access were scored 3. Sites which utilize County roads were scored 2. Sites which utilize local improved roadways were scored 1.

16. Depth to Water Table - Sites which contain deep water table levels are considered to be superior to those sites which have a shallow depth to water table. Deep water table levels simplify construction and minimize impacts on groundwater quality. The source of data which was used to evaluate this

parameter was the Soil Conservation Service Report for Ocean County. Based on this data, soil groups on the proposed sites were categorized as having water table depths of greater than six feet or less than six feet. Some sites were shown to have disturbed soils with variable water table depths. The latter included areas used for quarrying, borrow pits, and landfills. Sites with water table depths greater than six feet were scored 3. Sites with water table depths of less than six feet were scored 1. Sites which contained disturbed land were scored 2. If the soil type within a site was mixed, a judgement was made as to the primary soil type. If the split was fairly even, the scores were averaged, yielding a score of 2.

17. Site Acquisition - This parameter considers the difficulty which is anticipated in connection with the acquisition of the site. Sites which contain multiple small parcels can be very difficult to acquire and may involve lengthy project delays in order to complete the acquisition process. Therefore, we evaluated the number of parcels which would have to be acquired. It was found that most sites contained less than three parcels. The maximum number of parcels on any site was less than 15. Therefore, we assigned a score of 3 if the site contained only one parcel. A score of 2 was assigned if the number of parcels which would have to be acquired was two or three. A score of 1 was assigned if the number of parcels was greater than 3.

Criteria Weights

The criteria weights which were used to calculate the composite site scores are shown below. To arrive at a composite score, the raw site score (1,2, or 3) is multiplied by the weight, with the products summed for each site. For convenience, the sum of all of the criteria weights was arbitrarily set at 100. This allows the criteria weights to be viewed as a percentage. The criteria weights are listed below:

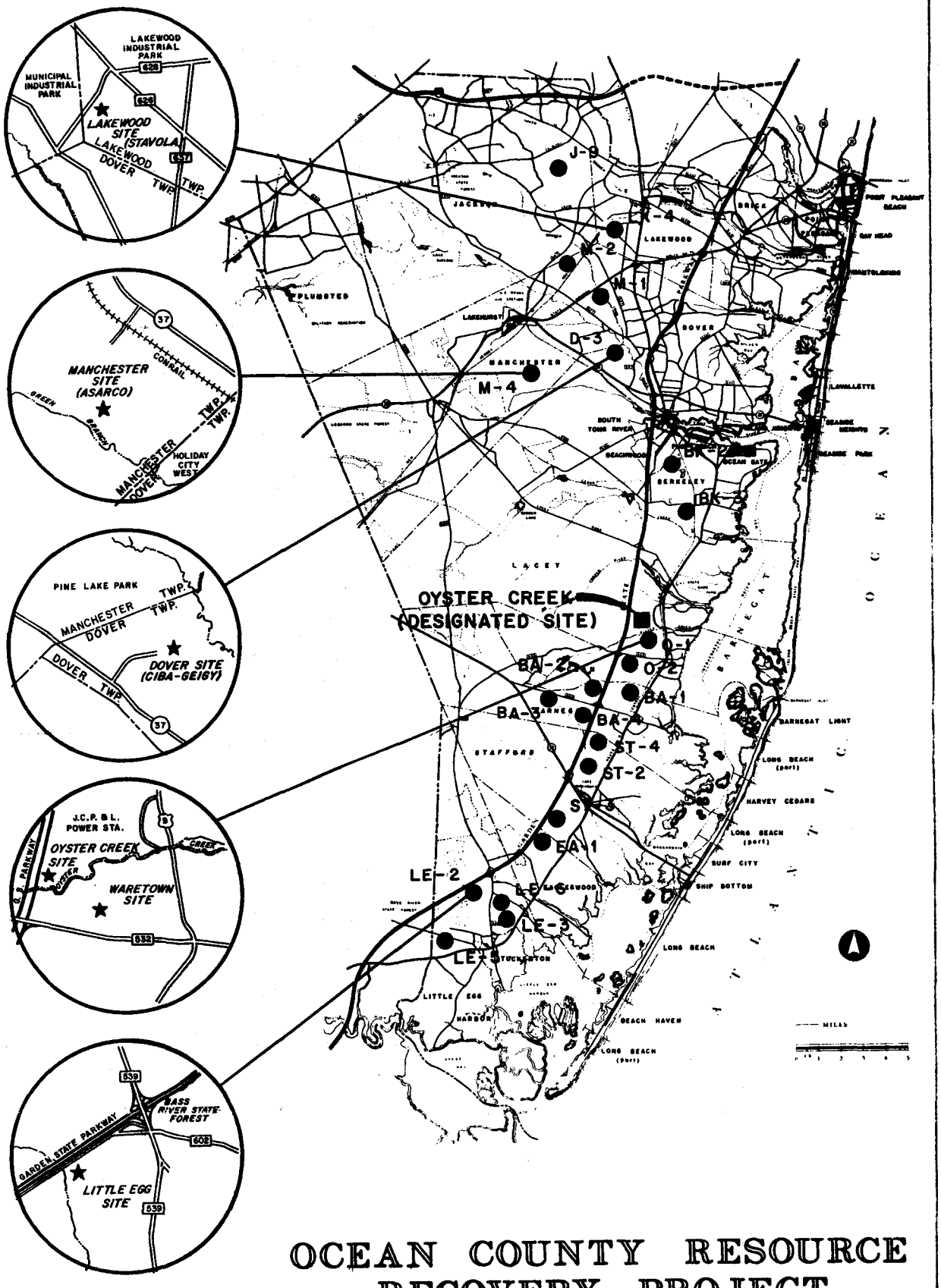
Site Ranking Criteria	Weight
LAND USE COMPATIBILITY	
On-Site Zoning	6.7
Adjacent Zoning	6.0
Availability of Buffer	3.1
Proximity to Historic Sites	2.5
Subtotal	18.3
COST FACTORS	
Site Development	3.9
Transportation	6.9
Ash Disposal	3.7
Proximity to Power Grid	2.5
Subtotal	17.0

PEOPLE	
Proximity to Residential Areas	14.6
Proximity to Schools and Hospitals	5.9
Proximity to Community Centers	5.6
Proximity to Recreational Areas	5.1
Subtotal	31.2
TRAFFIC	
Nuisance Impacts - Access Related	9.7
Existing Traffic Congestion	6.5
Road Classifications	5.9
Subtotal	22.1
DEVELOPMENT	
Distance to Water Table	6.9
Site Acquisition (Number of Parcels)	4.5
Subtotal	11.4
TOTAL	100.0

The results of the ranking study are shown on the following page. For purposes of comparison, the designated site in Lacey Township is also included on the table. The prioritized list of sites and their composite scores are shown below:

Alternative Site Rank	Score	Identifier	Descriptive Name
*	263	LA - 4	Oyster Creek site, Lacey
1	262	M - 4	ASARCO site, Manchester
2	249	O - 1	Waretown site, Ocean
3	247	LK - 4	Stavola Quarry, Lakewood
4	238	LE - 2	Old North Green St., Little Egg Harbor
5	233	D - 3	Ciba-Geigy site, Dover
6 (tie)	224	M - 2	Manchester site #2
6 (tie)	224	ST - 3	Stafford/Eagleswood border, Stafford
8 (tie)	214	BA - 3	Pancoast Road/Rt. 72 site, Barnegat
8 (tie)	214	EA - 1	Eagleswood/Stafford border, Eagleswood
10	208	LE - 6	Thermo Elektron site, Little Egg Harbor
11	201	O - 2	Pancoast Road site, Ocean
12	196	BK - 2	OCUA Bayville site, Berkeley
13	193	BA - 2	Pancoast Road/Parkway site, Barnegat
14	192	BA - 4	Barnegat Industrial Park site, Barnegat
15 (tie)	187	LE - 5	Stage Road site, Little Egg Harbor
15 (tie)	187	M - 1	Ocean County Landfill Corp., Manchester
17 (tie)	185	J - 9	Bennetts Mills/Hulse Rd. site, Jackson
17 (tie)	185	ST - 4	Beachview Ave. site, Stafford
19	180	LE - 3	Frogpond Road site, Little Egg Harbor
20	179	ST - 2	Old Manahawkin Road site, Stafford
21	173	BK - 3	Cedar Creek site, Berkeley
22	163	BA - 1	Rt. 9 - Barnegat/Ocean border, Barnegat

*Designated site in Ocean County's Solid Waste Management Plan



OCEAN COUNTY RESOURCE RECOVERY PROJECT

ALTERNATIVE SITE LOCATIONS

Prepared By:

GBB-Killam

OCEAN COUNTY RESOURCE RECOVERY SITING STUDY
RESULTS OF RANKING ANALYSIS

			ON-SITE ZONING		ADJACENT ZONING		BUFFER ZONE		HISTORIC SITES	
SITES	TOTAL SCORE	RANK	Raw	Weighted	Raw	Weighted	Raw	Weighted	Raw	Weighted
LA - 4	263	1	3	20.1	3	18	3	9.3	3	7.5
BA - 1	163		1	6.7	1	6	2	6.2	1	2.5
BA - 2	193		1	6.7	1	6	2	6.2	3	7.5
BA - 3	214	9	1	6.7	1	6	2	6.2	3	7.5
BA - 4	192		3	20.1	2	12	1	3.1	3	7.5
BK - 2	196		3	20.1	3	18	1	3.1	3	7.5
BK - 3	173		1	6.7	1	6	2	6.2	2	5
D - 3	233	6	3	20.1	3	18	2	6.2	3	7.5
EA - 1	214	9	1	6.7	1	6	3	9.3	3	7.5
J - 9	185		1	6.7	1	6	2	6.2	3	7.5
LK - 4	247	4	3	20.1	3	18	2	6.2	3	7.5
LE - 6	208		3	20.1	2	12	1	3.1	2	5
LE - 2	238	5	3	20.1	3	18	3	9.3	3	7.5
LE - 3	180		1	6.7	1	6	2	6.2	1	2.5
LE - 5	187		1	6.7	1	6	1	3.1	3	7.5
M - 1	187		3	20.1	3	18	1	3.1	3	7.5
M - 2	224	7	3	20.1	3	18	1	3.1	3	7.5
M - 4	262	2	3	20.1	3	18	3	9.3	3	7.5
O - 1	249	3	3	20.1	3	18	3	9.3	3	7.5
O - 2	201		1	6.7	1	6	2	6.2	3	7.5
ST - 2	179		1	6.7	1	6	2	6.2	2	5
ST - 3	224	7	1	6.7	1	6	3	9.3	3	7.5
ST - 4	185		2	13.4	2	12	2	6.2	3	7.5
CRITERIA WEIGHT				6.7		6		3.1		2.5

	SITE DEV. - $		TRANSPORTATION - $		ASH DISPOSAL - $		POWER GRID DISTANCE		PROX - RESIDENTIAL		PROX. - S
SITES	Raw	Weighted	Raw	Weighted	Raw	Weighted	Raw	Weighted	Raw	Weighted	Raw
LA - 4	1	3.9	2	13.8	2	7.4	3	7.5	3	43.8	3
BA - 1	3	11.7	2	13.8	2	7.4	1	2.5	1	14.6	1
BA - 2	2	7.8	2	13.8	2	7.4	2	5	2	29.2	2
BA - 3	2	7.8	2	13.8	2	7.4	1	2.5	2	29.2	3
BA - 4	3	11.7	2	13.8	2	7.4	2	5	1	14.6	2
BK - 2	3	11.7	2	13.8	2	7.4	3	7.5	1	14.6	2
BK - 3	3	11.7	2	13.8	2	7.4	3	7.5	2	29.2	1
O - 3	3	11.7	3	20.7	3	11.1	3	7.5	1	14.6	2
EA - 1	2	7.8	1	6.9	1	3.7	2	5	3	43.8	2
J - 9	2	7.8	3	20.7	3	11.1	2	5	2	29.2	2
LK - 4	3	11.7	3	20.7	3	11.1	3	7.5	2	29.2	3
LE - 6	2	7.8	1	6.9	1	3.7	3	7.5	2	29.2	2
LE - 2	2	7.8	1	6.9	1	3.7	1	2.5	3	43.8	2
LE - 3	2	7.8	1	6.9	1	3.7	3	7.5	2	29.2	2
LE - 5	2	7.8	1	6.9	1	3.7	3	7.5	2	29.2	2
M - 1	3	11.7	3	20.7	3	11.1	1	2.5	1	14.6	2
M - 2	2	7.8	3	20.7	3	11.1	3	7.5	2	29.2	3
M - 4	2	7.8	3	20.7	3	11.1	2	5	3	43.8	2
O - 1	2	7.8	2	13.8	2	7.4	3	7.5	2	29.2	2
O - 2	1	3.9	2	13.8	2	7.4	1	2.5	2	29.2	2
ST - 2	1	3.9	1	6.9	2	7.4	2	5	1	14.6	1
ST - 3	2	7.8	1	6.9	1	3.7	2	5	3	43.8	2
ST - 4	2	7.8	1	6.9	1	3.7	1	2.5	2	29.2	1
CRITERIA		3.9		6.9		3.7		2.5		14.6	

	SCHOOLS, HOSP.	PROX. - COMM. CENTERS		PROX - RECREATION		NUISANCE IMPACTS		TRAFFIC CONDITIONS		ROAD CLASSIFICATION	
SITES	Weighted	Raw	Weighted	Raw	Weighted	Raw	Weighted	Raw	Weighted	Raw	Weighted
LA - 4	17.7	3	16.8	2	10.2	3	29.1	3	19.5	3	17.7
BA - 1	5.9	2	11.2	2	10.2	1	9.7	2	13	2	11.8
BA - 2	11.8	2	11.2	2	10.2	1	9.7	2	13	2	11.8
BA - 3	17.7	3	16.8	3	15.3	1	9.7	3	19.5	2	11.8
BA - 4	11.8	2	11.2	1	5.1	1	9.7	2	13	2	11.8
BK - 2	11.8	2	11.2	2	10.2	2	19.4	1	6.5	1	5.9
BK - 3	5.9	1	5.6	1	5.1	2	19.4	1	6.5	2	11.8
D - 3	11.8	1	5.6	2	10.2	3	29.1	1	6.5	3	17.7
EA - 1	11.8	2	11.2	1	5.1	3	29.1	2	13	3	17.7
J - 9	11.8	2	11.2	1	5.1	1	9.7	1	6.5	1	5.9
LK - 4	17.7	3	16.8	3	15.3	2	19.4	1	6.5	2	11.8
LE - 6	11.8	2	11.2	2	10.2	2	19.4	3	19.5	1	5.9
LE - 2	11.8	3	16.8	1	5.1	3	29.1	3	19.5	1	5.9
LE - 3	11.8	2	11.2	2	10.2	2	19.4	3	19.5	1	5.9
LE - 5	11.8	2	11.2	1	5.1	3	29.1	1	6.5	3	17.7
M - 1	11.8	1	5.6	1	5.1	1	9.7	1	6.5	2	11.8
M - 2	17.7	3	16.8	3	15.3	1	9.7	1	6.5	1	5.9
M - 4	11.8	2	11.2	3	15.3	3	29.1	1	6.5	3	17.7
O - 1	11.8	2	11.2	1	5.1	3	29.1	3	19.5	3	17.7
O - 2	11.8	2	11.2	2	10.2	2	19.4	3	19.5	2	11.8
ST - 2	5.9	1	5.6	2	10.2	3	29.1	3	19.5	3	17.7
ST - 3	11.8	2	11.2	2	10.2	3	29.1	2	13	3	17.7
ST - 4	5.9	2	11.2	2	10.2	2	19.4	2	13	1	5.9
CRITERIA	5.9		5.6		5.1		9.7		6.5		5.9

	WATER TABLE DEPTH		SITE ACQUISITION	
SITES	Raw	Weighted	Raw	Weighted
LA - 4	1	6.9	3	13.5
BA - 1	3	20.7	2	9
BA - 2	3	20.7	2	9
BA - 3	3	20.7	2	9
BA - 4	3	20.7	3	13.5
BK - 2	2	13.8	3	13.5
BK - 3	3	20.7	1	4.5
D - 3	3	20.7	3	13.5
EA - 1	3	20.7	2	9
J - 9	3	20.7	3	13.5
LK - 4	2	13.8	3	13.5
LE - 6	3	20.7	3	13.5
LE - 2	3	20.7	2	9
LE - 3	3	20.7	1	4.5
LE - 5	2	13.8	3	13.5
M - 1	2	13.8	3	13.5
M - 2	2	13.8	3	13.5
M - 4	2	13.8	3	13.5
O - 1	3	20.7	3	13.5
O - 2	3	20.7	3	13.5
ST - 2	3	20.7	2	9
ST - 3	3	20.7	3	13.5
ST - 4	3	20.7	2	9
CRITERIA		6.9		4.5

TASK #5 - SITE INVESTIGATIONS

From the list of sites ranked in Task #4, the top five (5) scoring sites and the Lacey site were chosen for further evaluation. This evaluation included re-evaluation of ranking criteria using on-site, first hand data. All sites, except Manchester, were field investigated and all of the sites were observed via two helicopter flights. Sites were evaluated using the ranking criteria from a feasibility point of view. However, some ranking parameters could not be further evaluated in the field because they are fixed e.g.., depend on location/position of the site. These ranking parameters were on-site and adjacent zoning, and proximity to school, hospitals, community centers, historic sites, and recreation facilities.

Additional data was gathered for each site as available. This data gathering effort included meetings with the Division of Coastal Resources, Pinelands Commission, and the New Jersey Highway Authority. The purpose of these meetings was to identify whether the use of the various sites was acceptable within the context of appropriate regulatory policies, etc. An effort was made to determine whether each of the sites would be implementable given the appropriate jurisdiction of each agency. In addition, discussions were held with local officials, engineers and property owners (as appropriate) in order to obtain any information that would effect the viability of a site such as distance to sewers and availability of water supplies.

In addition to the above, the NJDEP Division of Fish and Game was requested to provide information for each of the sites regarding the possible presence of threatened or endangered species on each site. The Division of Coastal Resources agreed to provide a letter report relative to the consistency of each site with applicable Coastal Zone policies.

Site Descriptions and Evaluation

LAKEWOOD SITE, Lakewood Township (figure 1)

This site is south of Cross Street in Lakewood Township, directly adjacent to the Lakewood Landfill, located on Block 524, Lot 77 owned by Stavola Construction. This site was previously used for sand & gravel quarrying and is presently a relatively deep dry borrow pit with steep slopes. Vegetation on-site is sparse with small clusters of pitch pine.

Evaluation:

1. Buffer/Visual Impacts
   This site is well buffered and isolated from surrounding land uses and is not readily visible from nearby roadways.

2. Site Development Assessment
   Water and Sewer could be provided by the New Jersey Water Company which is located approximately one-half mile away, however the company

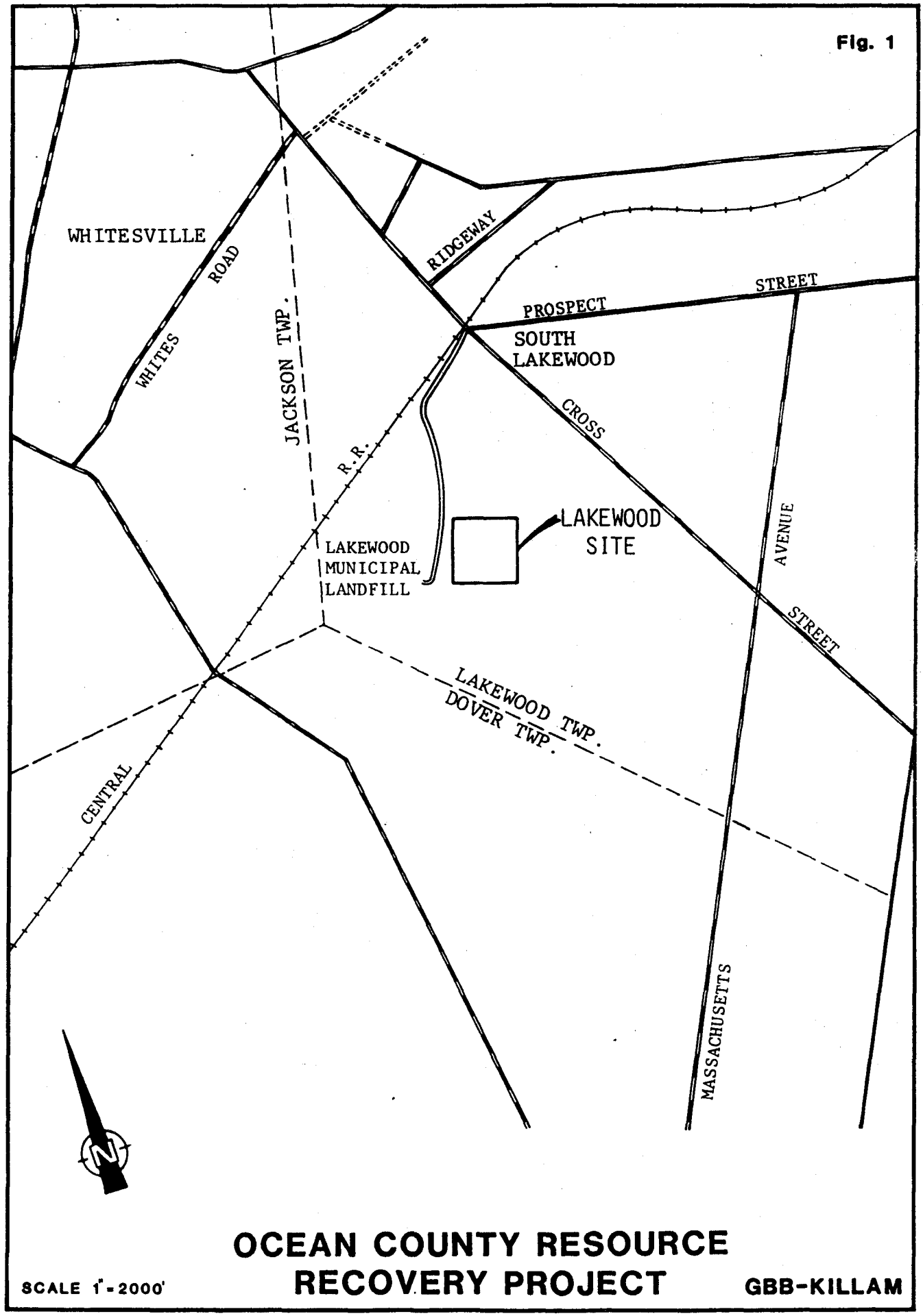


Fig. 1
WHITESVILLE
ROAD
WHITES
JACKSON TWP.
RIDGEWAY
PROSPECT
STREET
SOUTH
LAKEWOOD
CROSS
R.R.
LAKEWOOD
MUNICIPAL
LANDFILL
LAKEWOOD
SITE
AVENUE
STREET
LAKEWOOD TWP.
DOVER TWP.
CENTRAL
MASSACHUSETTS
N
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may not have the capacity to supply the facility. One other factor is that diversion permits are difficult to obtain in this section of the County. On-site wells could tap the Raritan-Magothy at a depth of approxmately 800 feet.

3. Residential Proximity

The area surrounding the site is moderately developed with residential housing however, there is a newly approved subdivision of 956 units immediately south of the site in Dover Township on the Dover/Lakewood municipal borders. On a regional level there is moderate to heavy commercial and residential development. This site may be subject to the CAFRA regulation of Special Urban Areas.

4. Traffic/Nuisance Impacts

The access route will impact streetside residences which involves Route 9 from Cross Street south to the Garden State Parkway. This route particularly on Route 9 is very congested at times and facility traffic will affect residents using this route. The quality of the road conditions on Route 9 is relatively poor even though it is a State Highway.

5. Soils

Soil conditions at the Lakewood site are classified as PM-Pits,Gravel & Sand (see appendix A). The physical conditions at the Lakewood site make it subject to both Steep Slopes and Dry Borrow Pits regulations of CAFRA. This site may also have a shallow seasonal high water table since its soil classification is variable and as such could be subject to regulations on Wet Soils and High Permeability Moist Soils.

6. Threatened/Endangered Species

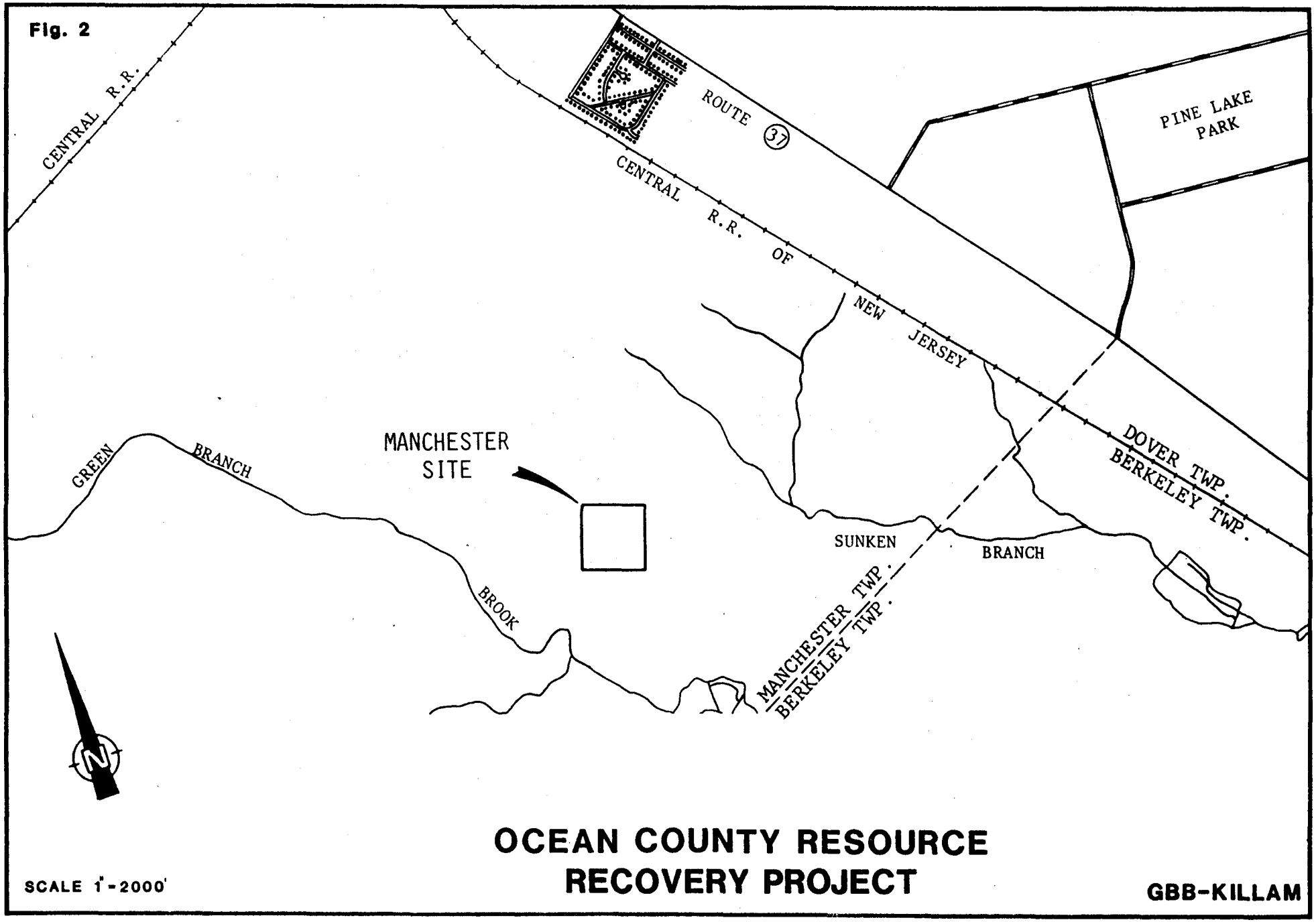
According to the DEP, northern pine snakes have been recorded at the periphery of the site. However, it should be noted that the specific area for this site is highly disturbed and lacking in vegetative cover and therefore does not appear to contain quality habitat for northern pine snakes.

7. Other Considerations

This site, as previously stated, is adjacent to the Lakewood Landfill and could be subject to methane migration. Soil borings would have to implemented in order to determine the extent of methane migration, if any, and the environmental risks associated with the landfill in regard to the site.

MANCHESTER SITE, Manchester Township, (figure 2)

This site is approximately 1.8 miles south of the intersection of Routes 37 and 70. The site, which is located on Block 75.01, Lot 1, was originally owned by ASARCO, but has been recently sold to Heritage Minerals. The area north and west of the site was originally used for illmenite mining, which was



accomplished through hydraulic dredging. This activity has left a large lake adjacent to the site, which is approximately one mile long by 1000 feet wide with the depth unknown. The site itself is presently vegetated by pine-oak forest.

Evaluation:

1. Buffer/Visual Impacts
   This site is extremely remote and would not be visible from existing roadways.

2. Site Development Assessment
   The site is undeveloped and mostly forested and would be subject to the Farmland Conservation Areas under CAFRA. Direct access to the site would involve an access road approximately one mile in length, which would cross the lake. This would require a major bridge structure and would be unfeasible. An alternative route would skirt the lake which could cross Wetlands and/or Wetlands Corridors,and would be approximately 2.5 miles in length. Water would seem to be available and the Manchester MUA is currently considering obtaining rights to the lake for a surface supply. The site is in the franchise area of the Manchester MUA, but sufficient water should be obtainable on-site. Access to sewers appears to be a problem in that access to the down-basin Wrangle Brook may involve crossing environmentally sensitive areas i.e.. wetlands. Connections to the new Crestwood Interceptor would also involve construction through sensitive areas. The most feasible alternative would involve pumping to the Union Branch Interceptor, which would be accessed through Pine Lake Park. This would involve a force main sewer approximately three (3) miles in length. This site is within the Pinelands National Reserve and as such any of the above project work would be subject to review by the Pinelands Commission.

3. Residential Proximity
   There are no residences within one mile radius of this site, however Holiday City, which is an intensely developed residential community is located 1.2 miles from the site. This site lies in proximity to several major population areas at a distance of slightly more than one mile.

4. Traffic/Nuisance Impacts
   The main access route is State Highway 37. This road is congested and heavily developed commercially with large residential developments on both sides of the highway. The use of this access route would significantly impact existing residential and commercial land uses in this area.

5. Soils
   This site has high permeability moist soils and is subject to CAFRA

review on this condition. There are 3 soil groups found on this site which are Lakehurst (Lha), Downer (DoA), and Klej (KlA). (see appendix A.)

CIBA-GEIGY SITE, Dover Township (figure 3)

The Ciba-Geigy site is located north of Route 37 in Toms River on Block 411, Lot 6 of the Ciba-Geigy Corporation, immediately west of their industrial plant facilities. The site is entirely vegetated by pine-oak forest and has no previous known uses. It is presently maintained as a buffer from local residential areas.

Evaluation:

1. Buffer/Visual Impacts
   This site contains a wooded buffer, however, due to its proximity to Route 37 and Pine Lake Park, the facility and the stack would be visible from developed residential areas and the roadway.

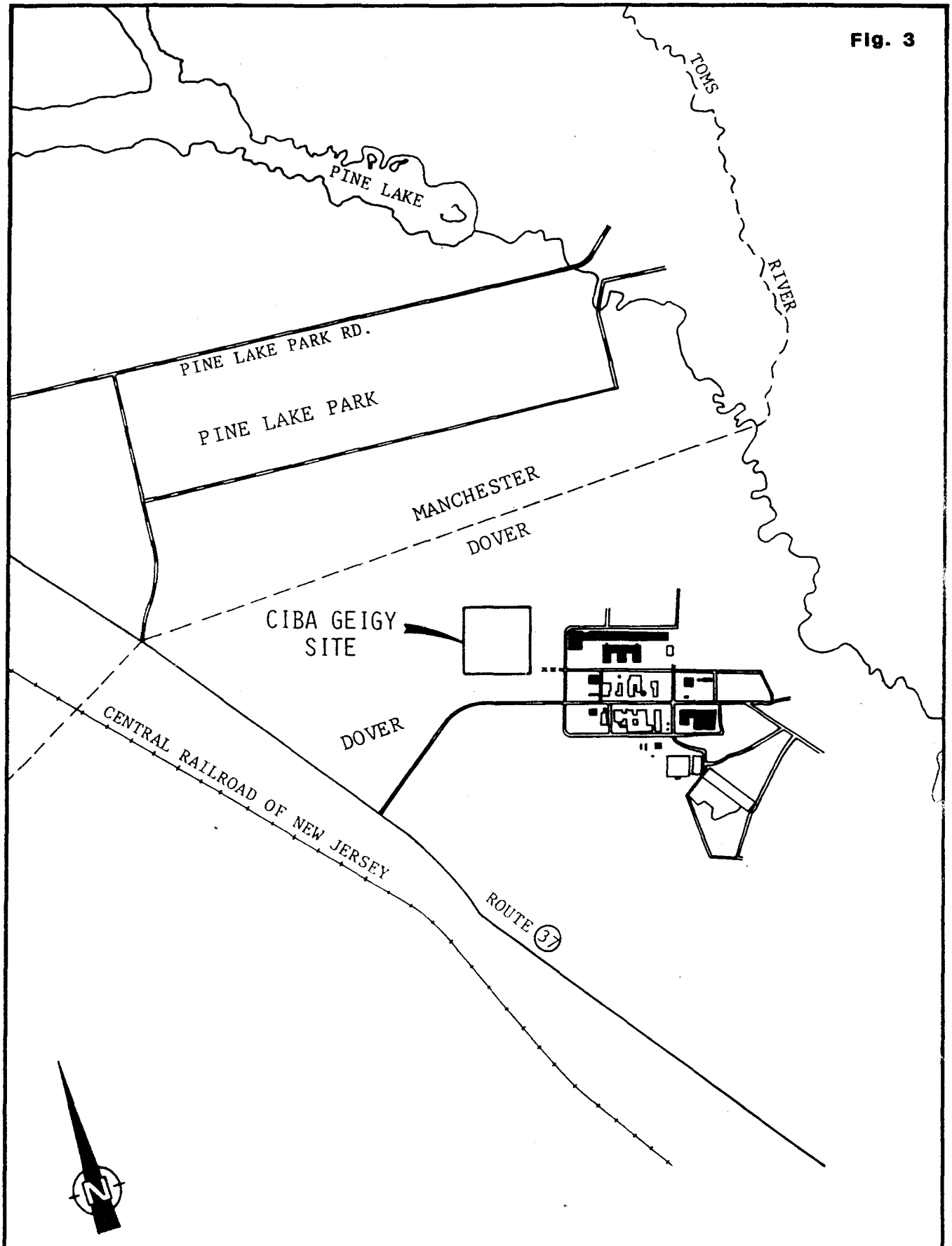
2. Site Development Assessment
   The site access road for the facility would be minimal since there is an access road to Route 37 already present for the industrial plant. Water and sewer access at this site are excellent. Ciba-Geigy has ample water diversion rights and capacity in addition to surface water diversion rights from the Toms River. The company maintains a wastewater treatment plant and ocean outfall with sufficient capacity for the proposed facility. In addition, the Ocean County Utilities Authority has an interceptor in Route 37 which could be easily accessed.

3. Residential Proximity
   Perhaps the single most important factor in judging alternative sites is the issue of proximity to residential properties. This site lies in close proximity to very concentrated population centers in Pine Lake Park and Holiday City. The number of residents involved in these two developments is so large that this could be a deciding factor in eliminating this site from consideration.

4. Traffic/Nuisance Impacts
   This site is similar to the Manchester site in that it has the potential to aggravate existing traffic congestion on Route 37. Traffic impacts associated with this site will be more intensive because of the large number of residential developments and commercial businesses on both sides of Route 37 and because the site is closer to Toms River.

5. Soils
   The conditions on site are dry and comprised of (DoA) Downer soils

Fig. 3



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(see appendix A). This site may be subject to Farmland Conservation Areas regulations of CAFRA.

6. Threatened/Endangered Species
   The DEP does not report any endangered or threatened species in the immediate vicinity of this site.

7. Other Considerations
   Ciba-Geigy represents a steam customer, which would allow the facility to sell steam to an adjacent customer. This would represent an operating efficiency to the energy recovery facility. The need to comply with the Environmental Clean-up Responsibility Act (ECRA) could be a complicating factor in acquiring this site depending on the status of Ciba-Geigy with respect to the remainder of the site. Should Ciba sell the facility, it could come under ECRA jurisdiction which could delay the site acquisition process.

LACEY SITE, Lacey Township (figure 4)

The designated site lies on the property owned by Jersey Central Power and Light and occupied by the Oyster Creek Nuclear Generating Station. It is located in the western portion of the property adjacent to the Garden State Parkway and is vegetated by a relatively featureless oak-pine forest. To the east of the site is a firing range which is used by local and state police agencies. The site itself has no previous or present known uses.

Evaluation:

1. Buffer/Visual Impacts
   This site is forested and buffered but the facility and the stack would be visible from the Parkway.

2. Site Development Assessment
   Access to the site would be via the Parkway however, this would require that a dedicated interchange be constructed to provide access directly from the Parkway. Construction of the new interchange would involve areas west of the Parkway which fall under the Pinelands National Reserve and Protection Area and would be subject to The Pinelands Commission review. Areas east of the Parkway are under CAFRA jurisdiction. Water is available on-site either from wells that would tap the Raritan-Magothy or possibly from the existing canal which is used to provide cooling water to the nuclear generating station. Sewers are available on Route 9 which would involve construction of a sewer line approximately 2 miles long.

3. Residential Proximity
   This site is remote and quite distant from residential development. On a regional level this section of Ocean County is lightly developed.

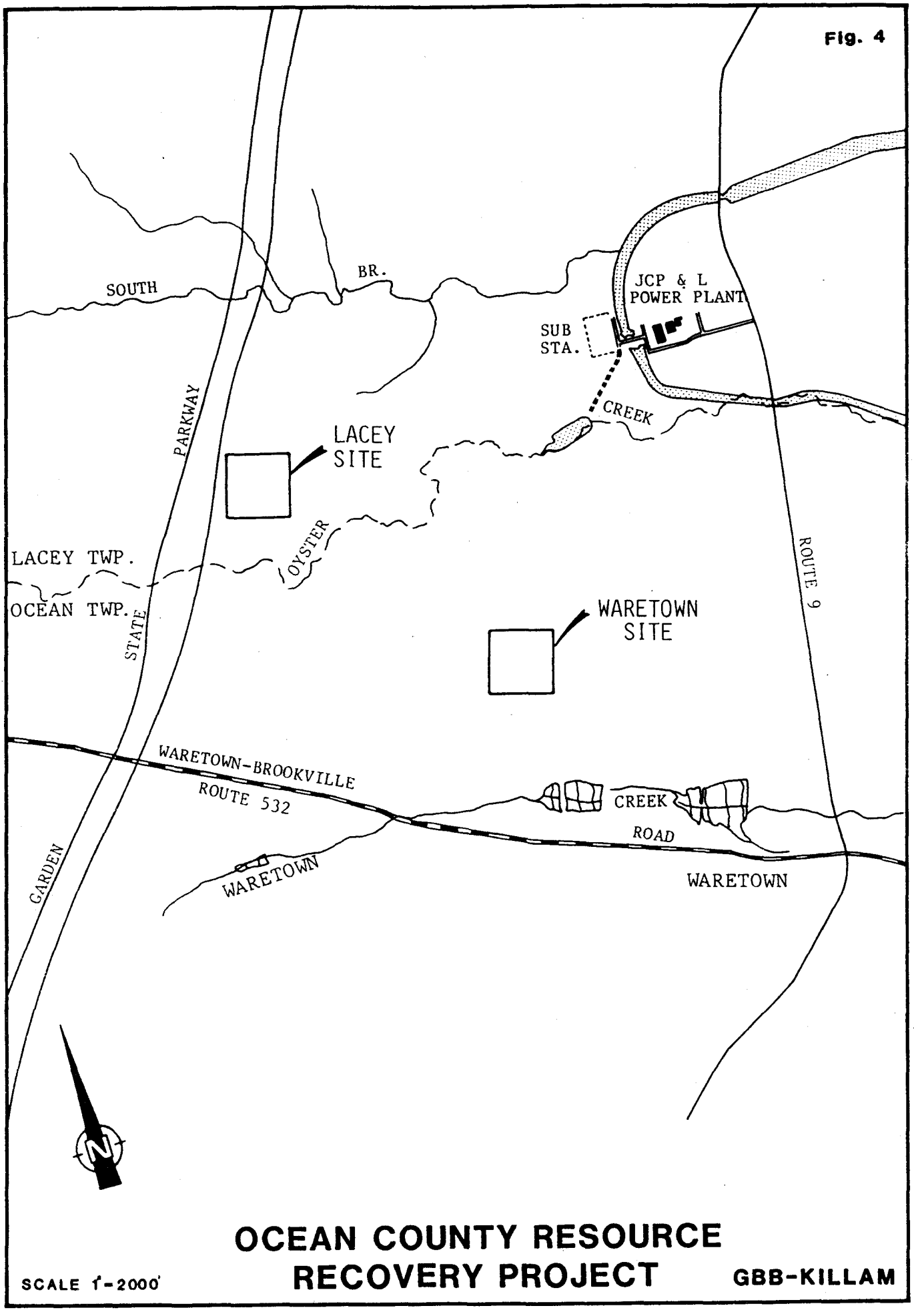
Fig. 4
SOUTH
BR.
JCP & L
POWER PLANT
SUB
STA.
CREEK
PARKWAY
LACEY
SITE
OYSTER
LACEY TWP.
OCEAN TWP.
STATE
ROUTE 9
WARETOWN
SITE
WARETOWN-BROOKVILLE
ROUTE 532
CREEK
ROAD
GARDEN
WARETOWN
WARETOWN
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This site would be subject to Special Hazard Areas of CAFRA because it is adjacent to the Nuclear Generating Station.

4. Traffic/Nuisance Impacts

Traffic impacts are minimal for this site and there should be no impacts associated to residences because the main access route is the Garden State Parkway, rather than local roadways.

5. Soils

The soil on-site is comprised of Lakehurst (LhA) soils (see appendix A). These soils are characterized as having a relatively shallow depth to seasonally high water table and are subject to regulations on Wet Soils and High Permeability Moist Soils.

6. Endangered/Threatened Species

According to the DEP, the following species have been recorded in the general vicinity of this site: Pine Barrens treefrog, northern pine snake, corn snake, wood turtle. In addition, there is an unconfirmed report of an occurence of eastern mud salamanders in the area. All of these species except for the corn and northern pine snakes are associated with wetland areas which are present along Oyster Creek. As the site does not affect these wetlands, direct impacts on these species should be avoidable. The northern pine snake and corn snake are known to occur in pine oak forests. The oak/pine forest present on this site does not contain a great deal of structure and may not offer prime habitat for these species. This would not seem to be a negative factor in assessing this site, although the need for a detailed herpatological survey may be indicated.

6. Other considerations

This site is currently designated in the County's Solid Waste Management Plan as the proposed site for the resource recovery facility.

WARETOWN SITE, Ocean Township (figure 4)

This site is located approximately 1 mile northeast of the Route 532/Garden State Parkway Interchange on Block 41, Lot 2 and is owned by H.R. Halswirth. The site is vegetated by an oak-pine forest which is relatively featureless. There are no known present or past uses on the Waretown site.

Evaluation:

1. Buffer/Visual Impacts

The Waretown site is extremely well buffered and the facility would not be visible from any major roadways. The stack from the facility might be visible from Route 9 but should not be visible from the Garden State Parkway.

2. Site Development Assessment

This site would require and access road constructed to Route 532 near its intersection with the Garden State Parkway. This would involve the acquisition of easements through several parcels of land, many of which are owned by the Township of Ocean. The prime access route to the site would be via the Parkway, requiring the construction of two additional exit/entrance ramps and toll booths at the 532 interchange. Water is available on site through the development of well(s) that would tap the Raritan-Magothy aquifer at a depth of approximately 1500 feet. Sewers are available on Route 9 with the distance for construction of sewer approximately 1 mile.

3. Residential Proximity

This site is remote and distant from present residential development. On a regional level this section of Ocean County is only lightly developed. This site would be subject to Special Hazard Areas of CAFRA because it is in the vicinity of The Oyster Creek Nuclear Generating Station.

4. Traffic/Nuisance Impacts

Traffic and residential impacts should be minimal for this site because the main access route is the Garden State Parkway.

5. Soils

Soil conditions at the site are dry and are classified as Lakewood (LwB) group (see appendix A).

6. Threatened/Endangered Species

Comments made by the NJDEP for this site are identical to those made for the Lacey site.

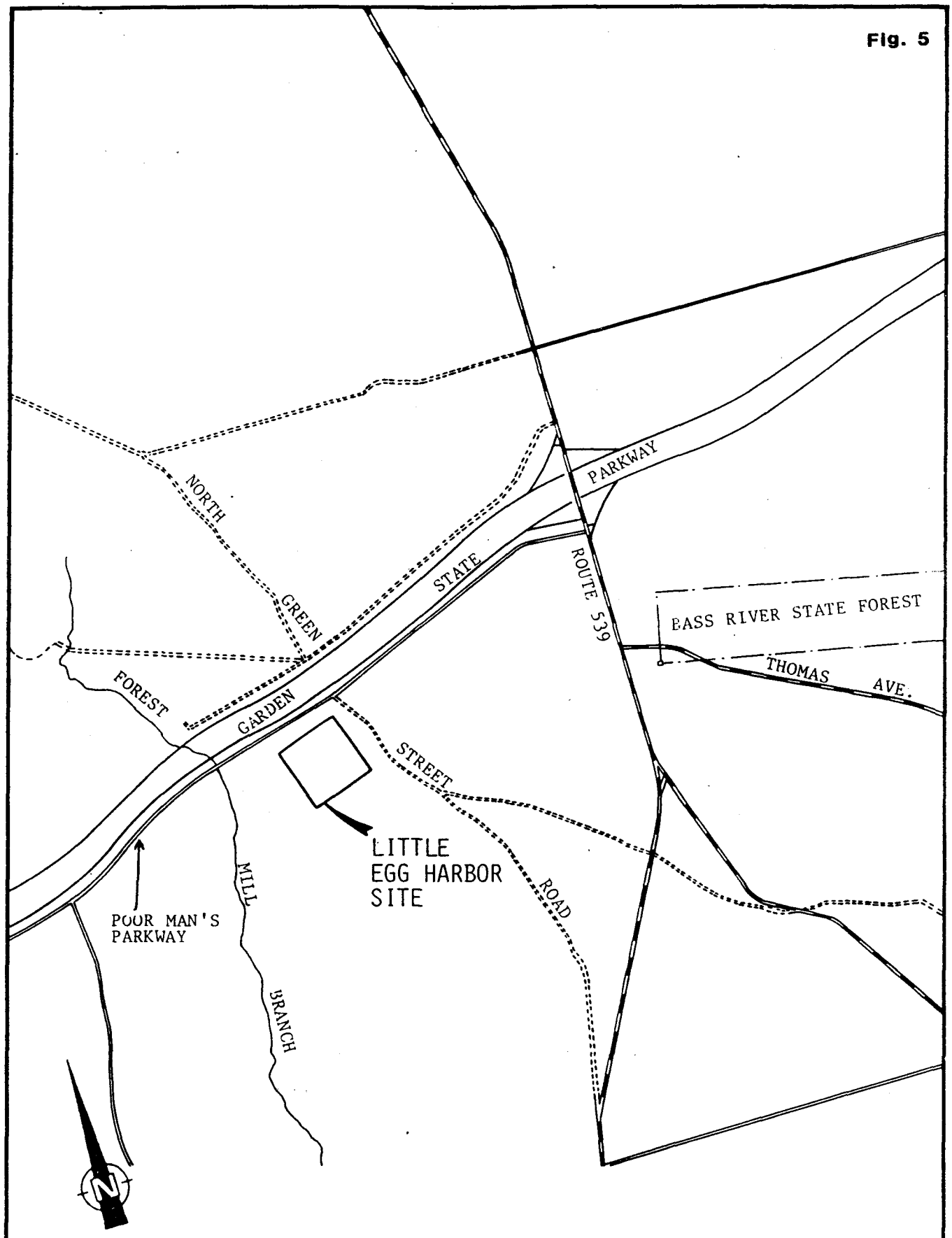
7. Other Considerations

Public officials from the Township of Ocean have expressed strong and continuous support for the development of the site for the resource recovery facility.

LITTLE EGG HARBOR SITE, Little Egg Township (figure 5)

The Little Egg Harbor site is located approximately 1.1 miles southwest of the Route 539/Garden State Parkway interchange adjacent to the road known as the "Poor Man's Parkway". The site is vegetated by pine-oak forest and consists of two parcels, owned by different parties. One is Contour Homes, Inc., now known as Roy Germanotta, Inc. (Block 78,, Lot 7). The other parcel Block 78, Lot 1 is owned by the Millbranch East Corp. (Citibank).

Fig. 5



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Evaluation:

1. Buffer/Visual Impacts

   This site is remote and buffered with no surrounding uses. However, this site is similar to the Lacey Site in that the facility would be visible from the Garden State Parkway.

2. Site Development Assessment

   This site would require a minor access road to the "Poor Man's Parkway" which leads to the Route 539/Parkway interchange. Sewer construction cost could be very high for this site since the nearest sewers available are on Route 9 which is approximately 3 miles away. However, such a sewer extension may not be permittable under CAFRA regulations due to potential secondary growth impacts. Water for the facility would have to come through the development of an on-site well approximately 2300 feet deep that would tap the Raritan-Magothy Aquifer. This site is in a Designated Limited Growth Area according to CAFRA regulations and would face the most restrictions on development compared to the other sites.

3. Residential Proximity

   There are no residences within one mile of this site. On a regional level the nearest major development, Tuckerton, is 3 miles away. This site has the least impact on residences in comparison to the other sites.

4. Traffic/Nuisance Impacts

   Traffic and residential impacts should be negligible for this site whereas the main access route is the Garden State Parkway and there are currently no residences along the access road.

5. Soils

   Soil conditions on this site are dry and are classified as Downer (DoA) (see appendix A).

6. Threatened/Endangered Species

   Pine Barrens treefrogs, pine snakes, and timber rattlesnakes have been recorded in the site periphery. Again, it would appear that a on-site herpatological survey would be indicated should this site be selected.

7. Other Considerations

   The Little Egg Harbor site is the furthest distance geographically from northern Ocean County, where most of the county's solid waste is generated. There will be a substantial cost for transportation of waste to this site.

TASK #6 - EVALUATION AND COMPARISON OF FINALIST SITES

In order to compare the sites which were investigated in the previous task, it was first necessary to develop a list of criteria with which the sites can be evaluated. Since the six sites to be compared are the best among all of the sites identified, most of the remaining sites scored well with respect to a number of parameters. Therefore, many of the criteria which were useful in the initial site ranking were eliminated at this stage. In addition, since all of the sites were inspected in the field, the definitions of some of these criteria were altered to better fit the purpose of final comparison. A list of the ranking criteria which were judged to be relatively unimportant during the final site comparison is shown below:

1. On-site zoning
2. Proximity to Historic Sites
3. Site Development Costs
4. Proximity to Power Grid
5. Proximity to Schools and Hospitals
6. Proximity to Community Centers
7. Site Acquisition
8. Road Classification

The criteria which were still considered important to the final comparison are listed below:

1. Buffer Zone - the anticipated visual impacts presented by the site after development. This is a qualitative judgement made during the site inspections.
2. Transportation/Ash Disposal Costs - the cost of disposal as determined through Killam's transportation study.
3. Proximity to Residential Areas - The proximity of the site to nearby residences in a near-field and regional sense. This should not be confused with the house-count which was done within one mile of each site during the ranking process.
4. Traffic - The degree of traffic congestion which is experienced on the primary access route to the site.
5. Nuisance Impacts (traffic related) - The degree of disruption which will occur to residences and commercial establishments along the access route.
6. Soils (Distance to Water Table) - This is a measure of the permeability and depth to water table associated with each soil group. This greatly affects the environmental sensitivity of each site under the CAFRA regulations.

In addition, several additional criteria were added to the list above based on the field investigations and data gathering effort. These included:

7. Consistency with CAFRA, Pinelands policies

8. Presence of Threatened and Endangered Species
9. Ability to secure interchange improvements (Lacey and Waretown only)
10. Other site specific considerations.

While all of the criteria listed above were judged to be important, the most important among them are transportation/ash disposal costs, proximity to residential areas, and traffic. The latter two are sufficiently important to disqualify a site. The ability to secure parkway interchange improvements is also regarded as a parameter which affects the very feasiblity of the Waretown and Lacey sites.

Evaluating each site against these parameters, we obtained the following results:

Lakewood

Buffer Zone	Better than average
Transportation/Ash Disposal	Better than average
Proximity to Residential	Worse than average
Traffic	Much worse than average
Nuisance Impacts	Worse than average
Soils	Potentially worse than average
Consistency w/ CAFRA, Pinelands	Acceptable
Presence of Threatened/Endangered Sp.	Acceptable
Other Considerations	Possible methane involvement from Landfill

Manchester

Buffer Zone	Better than average
Transportation/Ash Disposal	Better than average
Proximity to Residential	Much worse than average
Traffic	Much worse than average
Nuisance Impacts	Much worse than average
Soils	Worse than average
Consistency w/ CAFRA, Pinelands	Acceptable
Presence of Threatened/Endangered Sp.	Possibly a problem due to wetland crossings
Other Considerations	Difficult Access within site, difficult sewer access.

Ciba-Geigy

Buffer Zone	Worse than average
Transportation/Ash Disposal	Better than average
Proximity to Residential	Much worse than average
Traffic	Much worse than average
Nuisance Impacts	Much worse than average
Soils	Better than average
Consistency w/ CAFRA, Pinelands	Acceptable
Presence of Threatened/Endangered Sp.	Acceptable
Other Considerations	ECRA involvement is dependent on status of present property owner.

Other disadvantages of the dedicated interchange are that the Resource Recovery Facility would be located very close to the Parkway. The building and smoke stack would be clearly visible from the Parkway. It would not be long before the management and employees of the Oyster Creek Nuclear Power Plant would be demanding the right to use the dedicated interchange which would be immediately adjacent to the property of the plant. The necessary acceleration and deceleration lanes leading into the dedicated interchange would interfere with the ramps to our Oyster Creek Picnic Area. They would also be extremely close to the existing ramps at Interchange 69.

Plan B, that is the construction of ramps to and from the north at existing Interchange 69 with Waretown Road, has other advantages which the dedicated interchange does not. We would improve service to local roads by completing Interchange 69. The new interchange would provide employment for local people as toll collectors probably 4 to 6 new jobs. There will be pressure on the Authority to build these new ramps to and from the north at some time in the not too distant future although they are not necessary at the present time. If the Resource Recovery Facility, is located off Waretown Road rather than directly off the Parkway it would not be visible from the Parkway and therefore this plan is more aesthetically pleasing to us.

The reason we would insist upon collecting tolls on the new ramps is not because we would make money, in fact we might not even break even, but too many patrons would use these new ramps to avoid paying the toll at the Barnegat Toll Plaza. We are specifically prohibited by our bond covenant from opening new interchanges which would tend to reduce toll collection at other points on the roadway.

Please feel free to share this memo and the attachment with any local officials you feel appropriate.

James W. Conlon

cn

cc: George P. Zilocchi
Charles McManus

are as follows:

Lakewood

The Lakewood site is desireable from the standpoint of buffer and transportation/ash disposal costs. However, it is poor with respect to traffic, proximity to residential, and nuisance impacts. The major consideration in down-ranking this site is the difficulties presented by accessing the site via Route 9. In our opinion, this parameter alone is sufficient to place this site in the less desireable category. Also, since Lakewood is in an area of the County which is likely to experience more residential growth than other areas, conflicts with residential uses may be significant in the future.

Manchester

The Manchester site was desireable with respect to buffer and transportation/ash disposal costs. It was poor in terms of proximity to residential areas, traffic, nuisance impacts, and soil conditions. The first two parameters are considered to be very important. In particular, access to the site via Route 37 is difficult due to traffic congestion. There is a considerable amount of commercial activity in this section of Rt. 37, and many residents use this route to reach subdivisions which are located along the highway. In addition, while the immediate site environs are sparsely populated, the site is located within two miles of very densely populated areas. In our judgement, the traffic and residential concerns associated with this site location place this site in the less desireable group.

Ciba-Geigy

The Ciba-Geigy site is strong with respect to transportation/ash disposal costs, but is less suitable than the others in terms of residential proximity, traffic, nuisance impacts, and buffer. We therefore placed this site in the less desireable grouping for reasons similar to the Manchester site.

The next group consisted of the more desireable sites and included Lacey, Waretown, and Little Egg Harbor. These sites were judged to be more desireable than the previous group due to the fact that they all were judged better than average with respect to residential proximity and traffic. It should be noted that all three of these sites were less desireable than the preceding three in terms of transportation/ash disposal costs, with Little Egg being the worst of the three in this sense. Our rationale for this is that traffic and residential concerns are key factors in judging the feasiblity of a site. We believe that transportation costs are an important factor, but that the public and responsible County officials will better accept a site which has fewer human impacts at the expense of greater transportation costs.

Within the more desireable group, we feel that the Little Egg site is the less desireable than either Lacey or Waretown. While Little Egg is excellent from residential, traffic, nuisance, and soils standpoints, it is worse with respect to transportation costs. In addition, due to its presence in a limited growth zone, permitting the site under the CAFRA regulations would be difficult. Sewer constraints would be sufficiently severe to force a design which would utilize on-site wastewater disposal along with extreme measures to reduce wastewater production.

The Lacey and Waretown sites, based on the considerations discussed above for the other sites, were considered to be the most feasible sites within the County. The Lacey site is strong as measured by all of the criteria, except for buffer and soils. With respect to the important criteria as discussed above, Lacey is desireable with respect to residential proximity and traffic. In terms of transportation/ash disposal, it is more costly than the northern sites, but less costly than the Little Egg site. Lacey also has the distinction of being the only site which holds the position of being the approved site in the County's Solid Waste Plan. Based on the status of the site, we indicated at the onset of the siting study that a site other than Lacey would be recommended only if that site was clearly preferable.

The last site among the finalists is Waretown. Again, with respect to the criteria which were applied to the other finalists, Waretown was judged to be desireable in terms of buffer, residential proximity, traffic, nuisance impacts, and soils. Waretown was considered to be equivalent to Lacey in terms of transportation/ash disposal costs. Waretown is the only site under consideration which appears to have active support by the local municipality. In any siting decision, the position of the host community is certainly an important consideration. Comparing the two sites side-by-side on their technical merits, we have:

Criterion	More Suitable Site (Lacey or Waretown)
Buffer Zone	Waretown
Transportation Costs	Equivalent
Proximity to Residential	Lacey (slight advantage)
Traffic	Equivalent
Soils	Waretown
Consistency with Pinelands	Equivalent
Consistency with CAFRA	Waretown (based on soil conditions)
Threatened/Endangered Species	Equivalent
Other Considerations	Lacey is designated site Waretown has community support

In comparing Lacey and Waretown, the sites are reasonably close in terms of the more important siting criteria (transportation costs, traffic, proximity to residential). With regard to the residential criterion, Lacey has slightly fewer residences within a distance of one mile. On a more regional level, the two sites are reasonably equivalent. In our opinion, the number of residences

which surround either site is low, with both sites being remote in character. We do not feel that the number of developed residential properties affects the suitability of either site, although in absolute numbers the edge must be given to the Lacey site. It appears then that the practical differentiation between the two sites must fall to some of the less important criteria on the list above. On that basis, Waretown would appear to have the advantage over Lacey based on soils and buffer considerations. In terms of the non-technical "other considerations," Lacey is the designated site which means that it can be implemented without the need to go through the plan amendment process. Waretown, on the other hand, appears to have local support for the project and site.

A recommendation as to which of these sites is preferable is a matter of some judgement, involving weighing the importance of each of the parameters which distinguish the two sites. It is the opinion of GBB-Killam that the Waretown site is preferable based on all of the considerations which have been discussed.

The final issue of some importance to the siting decision are the roadway improvements which must be made in order for refuse vehicles to access the sites. Both sites have been assessed from the beginning of the siting study assuming that access to the sites via the Garden State Parkway would be possible. It was determined that access via Route 9 would render either site unfeasible. In order to determine the feasibility of access improvements at either Lacey or Waretown, we have requested that the New Jersey Highway Authority evaluate and respond to the County with respect to these two proposals. We have received a memorandum from the Authority's staff indicating that the construction of a dedicated interchange to access the Lacey site may not be acceptable to the Authority. One of the major reasons for this determination is that the Authority is not inclined to set a precedent which would allow other parties in the future to petition the Authority for similar "dedicated" interchanges. On the other hand, it appears that the Authority may well support improvements to the Route 532 interchange which are necessary to access the Waretown site. It is essential that access to either or both of these sites be confirmed by some official action of the Authority before a final recommendation is made.

To summarize, based on the evaluations conducted to date, both the Lacey and Waretown sites are suitable for the location of the resource recovery facility and are judged to be more suitable than other sites studied. While the facility could be constructed at either location, we believe that Waretown is the better site based on its technical merits and based on apparent support for the site. A final recommendation will be made following an official response from the New Jersey Highway Authority, which has provided us with an unofficial staff position which favors the Waretown site.

APPENDIX 2

LETTERS FROM
NEW JERSEY HIGHWAY AUTHORITY
NJDEP DIVISION OF COASTAL RESOURCES
NJDEP DIVISON OF FISH AND GAME
NEW JERSEY PINELANDS COMMISION

Garden State Parkway

Memorandum

DATE: June 27, 1986

TO: Commissioner H. George Buckwald

FROM: James W. Conlon, Chief Engineer

SUBJECT: **PROPOSED INTERCHANGE TO SERVE OCEAN COUNTY RESOURCE RECOVERY PLANT - INTERCHANGE 69**

Attached is a portion of a memorandum prepared by Vollmer Associates, our Traffic Engineering Consultant, concerning the request from Ocean County to provide an Interchange to serve the proposed Ocean County Resource Recovery Plant in the vicinity of our Interchange 69. I have deleted from Vollmer's report only discussions of toll revenue and cost of operation which I do not believe it is appropriate to release at this time.

Vollmer's preliminary construction cost estimate is $1.8 million for Plan A, that is the dedicated Interchange, and $1.2 million for Plan B, new ramps at Interchange 69. It has been my experience that between the time our traffic consultant estimates construction cost and we actually award a construction contract, the costs have nearly double.

Please note that the figures prepared by Vollmer are schematic, the actual shape of the Interchange will be significantly different than shown on Figures 1, 2, & 3. In particular, the southbound exit will be a far side loop ramp, that is a ramp on the south side of the local road. This will favor the right turn traffic, that is the traffic leaving the southbound Parkway that wishes to go east on the local road. This will eliminate left turns by the predominate truck traffic.

From a strictly financial point of view Plan A, that is a dedicated Interchange, is better than Plan B. This is because it would cost virtually nothing to collect a toll from trucks using a dedicated Interchange. The disadvantages however in my judgement clearly outweigh the financial advantage. The biggest disadvantage is that the construction of a dedicated Interchange would set a precedent which would be difficult to overcome. We do not have any dedicated Interchanges and we are not considering any anywhere on the Parkway. Every one of our interchanges connects to a public highway. We have had other requests for dedicated interchanges particularly from developers and we have always refused to construct such an interchange.

Lacey

Buffer	Worse than average
Transportation/Ash Disposal	Average
Proximity to Residential	Better than average
Traffic	Better than average
Nuisance Impacts	Better than average
Soils	Worse than average
Consistency w/ CAFRA, Pinelands	Acceptable, must consider secondary impacts
Threatened/Endangered Species	Will require in-field survey
Ability to Secure Interchange	Probably not feasible
Other considerations	Site is within County Plan

Waretown

Buffer	Better than average
Transportation/Ash Disposal	Average
Proximity to Residential	Better than average
Traffic	Better than average
Nuisance Impacts	Better than average
Soils	Better than average
Consistency w/ CAFRA, Pinelands	Acceptable, must consider secondary impacts
Threatened/Endangered Species	Will require in-field survey
Ability to Secure Interchange Imp.	Probably feasible
Other considerations	Indications are that the municipality favors the project.

Little Egg Harbor

Buffer	Worse than average
Transportation/Ash Disposal	Worse than average
Proximity to Residential	Better than average
Traffic	Better than average
Nuisance Impacts	Better than average
Soils	Better than average
Threatened/Endangered Species	Will require in-field survey
Consistency w/ CAFRA, Pinelands	Marginally acceptable, site would present severe development constraints due to presence in limited growth zone and need to consider secondary growth impacts.

Comparison of Sites

In comparing the finalist sites, they were separated into two categories, based on how they were rated in comparison to the other sites. The first category included the less suitable sites within the group. The sites which fell into this category were Lakewood, Manchester, and Ciba-Geigy. The reasons for this

State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION
TRENTON

DIVISION OF COASTAL RESOURCES

PLEASE ADDRESS REPLY TO:
CN 401
TRENTON, N.J. 08625

June 23, 1986

RECEIVED
JUN 26 1986
ELSON T. KILLAM ASSOCIATES, INC.
ENVIRONMENTAL & HYDRAULIC ENGINEERS

Mr. Dennis J. Suler
Elson T. Killam Associates, Inc.
27 Bleeker Street
P.O. Box 1008
Millburn, New Jersey 07041-1008

RE: CAFRA Pre-application #1542
Ocean County Resource Recovery Facility
Various Municipalities, Ocean County

Dear Mr. Suler:

The following summarizes the staff review of the information presented prior to and discussed at the pre-application conference held on April 21, 1986, for the above-referenced project, as well as the helicopter reconnaissance flight on April 29, 1986. This staff review refers to specific policies of the Rules on Coastal Resources and Development (N.J.A.C. 7:7E-1 et seq.) by section number. Please understand that this informal guidance is not a binding commitment by this Department to approve or deny any forthcoming permit application for this project or sites.

An Environmental Impact Statement (EIS) for this facility is required by the Coastal Area Facility Review Act of 1973 (CAFRA) (N.J.S.A. 13:19-1 et seq.), and an Environmental and Health Impact Statement (EHIS) is required by the Solid Waste Management Act of 1976 (N.J.S.A. 13:1E-1 et seq.). The EHIS and a supplement specifically addressing the policies and issues delineated in this letter will satisfy the EIS requirement under CAFRA, provided that all EIS requirements listed in the Coastal Permit Program Regulations (N.J.A.C. 7:7) are met.

Refer D. Suler	To Be Filed
Date Seen	Refer Back To
Date Answered	
Under Study By	

Background

The Solid Waste Management Act of 1976 was passed to initiate a statewide garbage management policy and stricter regulation of landfills. This was in response to increasing occurrences of contamination of well water by leaking landfills and illegal disposal of hazardous wastes at conventional dump sites, and the resulting severe environmental and health risks. The 3 major policy provision of the Act are:

1. To establish the county as the level of government responsible for planning and implementing garbage management strategies;

2. To establish resource recovery as the ultimate goal for each county, if feasible; and

3. To establish the principle of disposal in-county of all waste generated by that county, if feasible (1).

In accordance with the Solid Waste Management Act, Ocean County is proposing to construct a resource recovery facility, and has evaluated and rated 22 alternative sites for the facility within the county, using many parameters. Of those 22 sites, the top 5 are being investigated in more detail. This memorandum of record includes site-specific comments on the top 5 sites, as well as general comments on the facility and all sites, with reference to DEP's Rules on Coastal Resources and Development. This facility would be explicitly regulated by CAFRA, and the top 5 alternate sites are within the statutory coastal area.

Project Description

The proposed Ocean County resource recovery facility would handle solid waste from the entire county. It would be located on approximately 20 acres, of which the central 10 acres would be constructed upon, and the rest would remain undisturbed as an encircling buffer. Briefly, the mode of operation would be for the plant to receive municipal solid waste, burn it, and produce steam that would be converted into electricity for sale to a utilities company. Electromagnets would reclaim ferrous metals and the inert ash would be landfilled. Combustion gasses would be cleaned by electrostatic precipitators before being discharged through the stack, which would be approximately 300 feet high. Waste volume reduction, based upon existing operational resource recovery facilities, would be approximately 90 to 95 percent (2,3).

The 5 top-rated sites are named, located, and described, as follows (soils are from the Ocean County Soil Survey):

1. ASARCO site, Manchester Township: Approximately 1.8 miles south of the Routes 37/70 intersection. It is comprised of Lakehurst (LhA), Downer (DoA), and possibly Klej (KlA) soils, and is vegetated by pine-oak forest. It is within one-quarter mile of a lake, which appears to have been excavated.

2. Stavola Quarry, Lakewood Township: Approximately one-third mile south of the County Routes 626/628 intersection in the Township's South Lakewood section. It is relatively deep dry borrow pit with steep slopes.

3. Ciba-Geigy site, Dover Township: Immediately to the west of the Ciba-Giegy industrial plant, and approximately 0.7 miles northeast of the Holiday City Berkeley residential development. The site is comprised of Downer (DoA) soils, and is vegetated by pine-oak forest.

4. Oyster Creek sites, Ocean and Lacey Townships: There are actually 2 sites here:

   (a) Waretown site: Approximately 1 mile northeast of the Route 532/Garden State Parkway interchange. It is comprised of Lakewood (LwB) soils, and is vegetated by oak-pine forest.

   (b) Lacey site: Approximately 0.1 mile east of the Garden State Parkway and 0.2 miles north of Oyster Creek. It is comprised of Lakehurst (LhA) soils and is vegetated by oak-pine forest.

5. Old North Green Street site, Little Egg Harbor Township: Approximately 1.1 miles southwest of the Route 539/Garden State Parkway interchange. It is comprised of Downer (DoA) soils and is vegetated by pine-oak forest.

Location Policies (Subchapters 2,3,4, and 5)

Special Areas (Subchapter 3)

Special Areas are those 45 types of coastal areas which merit focused attention and special management policies. Some of the Special Areas policies discussed below apply only to specific sites, and some apply to all 5 sites reviewed.

It does not appear that Wetlands (7:7E-3.25), Wetlands Buffers (7:7E-3.26), or Intermittent Stream Corridors (7:7E-3.30) occur on any of the 5 sites, except possibly the Manchester site. Some of the sites are within one-quarter mile of these Special Areas (Oyster Creek sites, Little Egg Harbor site) or access to the site may require crossing these areas (Manchester site). Construction is generally prohibited in these Special Areas. The proposed facility should be sited as far from these areas as possible, and any disturbance to them (including stormwater runoff) should be minimized.

The Manchester and Dover sites, because of their soils and undeveloped condition, may be subject to Farmland Conservation Areas (7:7E-3.31). The Lakewood site is subject to the following: Steep Slopes (7:7E-3.32), Dry Borrow Pits (7:7E-3.33), and Special Urban Areas (7:7E-3.41).

The Manchester, Oyster Creek, and Little Egg Harbor sites are within the Pinelands National Reserve. Thus, if one of these sites are chosen, the project would be reviewed by the New Jersey Pinelands Commission, as per Pinelands National Reserve and Pinelands Protection Area (7:7E-3.42). The Oyster Creek sites would be subject to Special Hazard Areas (7:7E-3.39) because they are in the vicinity of the Oyster Creek Nuclear Generating Plant. As such, the New Jersey State Police should be contacted regarding emergency evacuation measures.

All sites should be investigated for the potential applicability of the following Special Areas:

7:7E-3.34	Historic and Archeological Resources (Contact DEP's Office of New Jersey Heritage)
7:7E-3.35	Specimen Trees (Wooded sites)
7:7E-3.36	Endangered or Threatened Wildlife or Vegetation Species Habitats (Contact N.J. Division of Fish, Game, and Wildlife (FGW)
7:7E-3.37	Critical Wildlife Habitats (Contact FGW)

General Land Areas (Subchapter 5)

General Land Areas include all mainland land features located upland of Special Water's Edge Areas. The acceptability for development of Land Areas is defined in terms of 3 levels of acceptable development intensity. Three factors determine the acceptable development intensity for various locations in Land Areas:

1. Coastal Growth Rating
2. Environmental Sensitivity
3. Development Potential

The above factors indicate the appropriate pattern of coastal development from a broad, regional perspective and provide a method for determining the acceptable intensity of development for specific sites, as well as entire regions.

While the procedure for determining the acceptability of development should be used for the prospective resource recovery site, the Division recognizes the county-wide significance and regional nature of this proposal, as well as its divergence from other types of commercial and industrial development. The unique aspects of this project include the undeniable need for sound solid waste management and reduction, the specific and continous traffic flow the facility will be associated with, and the need for a substantial buffer from residential areas. For these reasons a particular site may be deemed acceptable by the Division even if the acceptability of development procedure results do not fully support the location. This would be due to the presence of highly significant factors such as highway access, minimal traffic impacts and distance from solid waste sources within the county, and adequate buffer area from residential areas.

The above factors may potentially modify the Coastal Growth Rating and Development Potential ratings more than the Environmental Sensitivity ranking. The Environmental Sensitivity of the Lacey and part of the Manchester sites are high (high permeability moist soils, according to the Ocean County Soil Survey), and that of the rest of the sites is medium.

General Location Policies (Subchapter 6)

An EIS for this project should include a thorough secondary impact analysis. Secondary impacts of this project may be traffic increases and inducement of further development by new roads, sewers, and other utilities that may be constructed to serve the resource recovery facility. Any proposed project that induces further development must demonstrate that is secondary impacts will satisfy the Rules on Coastal Resources and Development. This is especially significant in Limited Growth Regions (Little Egg Harbor site), and Extension Regions (Oyster Creek and Manchester sites), where development is discouraged or restricted. Secondary impact analysis must include the likely geographic extent of induced development, and evaluation of the induced development in terms of all applicable Rules on Coastal Resources and Development.

Use Policies (Subchapter 7)

Use Policies do not pre-empt Location Policies, which restrict development: Rather, they introduce conditions which must be satisfied in addition to Location and Resource Policies.

Transportation Use Policies, Parking Facilities (7:7E-7.5d) would apply to this project if the paved area excluding the access drive is equal to or greater than 3 acres. Also, Public Facility Use Policies (7:7E-7.6b) must be addressed. Resource recovery, recycling, and volume reduction techniques are preferable to sanitary landfills under this policy.

Resource Policies (Subchapter 8)

These policies serve as standards to which proposed development must adhere. The applicable resource policies which would be addressed in the EIS include:

7:7E-8.4	Water Quality: Include details of wastewater treatment plans. Be advised that the Division is opposed to new sewer extensions that would induce future growth, particularly in Limited Growth and Extension Regions. On-site wastewater treatment should be explored.
7:7E-8.6	Groundwater Use: Water-conserving fixtures and techniques should be used. See attachment.
7:7E-8.7	Stormwater Runoff
7:7E-8.8	Vegetation
7:7E-8.9	Important Wildlife Habitat
7:7E-8.10	Air Quality: DEP's Division of Environmental Quality regulates pollution control equipment for resource recovery facilities and establishes limits to air emissions through the issuance of an air pollution control permit.
7:7E-8.12	Scenic Resources and Design: The EIS should include a detailed description and graphic rendering of the proposed facility, and information on its geographical scope of visual impact.

7:7E-8.13 Buffers and Compatibility of Uses

7:7E-8.14 Solid Waste

7:7E-8.15 Energy Conservation: Energy-conservative materials and fixtures must be used to the greatest degree possible. Refer to the Division's attached Guidelines. Although these were specifically developed for residential projects, they should also be useful for this facility. The siting of this facility to minimize distances travelled by trash-hauling vehicles, which would minimize their gasoline consumption, should also be a substantial factor in the planning process.

7:7E-8.16 Traffic: Traffic impacts are a major consideration for this project. Detailed traffic studies must be performed, and sites which would have the least effects on existing traffic conditions should be favored. The Lacey, Waretown, and Little Egg Harbor sites have a clear advantage over the Manchester, Dover, and Lakewood sites in this respect because their main access would be via the Garden State Parkway, rather than local highways. The Lacey site would require a new, dedicated interchange for access to the Parkway.

7:7E-8.17 Wet Soils and High Permeability Moist Soils: The Lacey and Manchester sites have high permeability moist soils, according to the Soil Survey; also, the Lakewood site, since it is a deep borrow pit, may have a shallow seasonal high water table (SHWT) at the bottom. For these sites, soil borings should be taken by a qualified soils scientist to determine the SHWT, using soil mottling. The facility should be designed, to the maximum extent possible, to concentrate development on portions of the site where the soils are least permeable and where the depth to the SHWT is greatest.

7:7E-8.20 Noise Abatement

Conclusion

The construction of a state-of-the-art resource recovery facility in Ocean County is encouraged by the Division of Coastal Resources, provided that all applicable Rules on Coastal Resources and Development are met, because:

1. Resource recovery facilities occupy a much smaller land area and assure a longer term disposal capacity than landfills. Therefore, fewer facilities will be needed and open space areas will be preserved.

2. Offensive odors, litter and vectors can be more effectively controlled than at landfills.

3. Resource recovery will conserve energy by returning recyclable materials to the economy for use as raw materials, and through the generation of steam and electricity.

4. The potential impact on ground and surface waters will be significantly decreased from that of landfills.

5. The construction and operation of resource recovery facilities is consistent with the intent and letter of the Solid Waste Management Act of 1976.

The Manchester, Dover and Lakewood sites have considerable potential for aggravating existing traffic congestion. The Dover and Lakewood sites also may not provide an acceptable buffer from residential areas. The Waretown, Lacey, and Little Egg Harbor sites would have less local traffic impacts on commercial and residential areas because the main access to these sites would be the limited-access Garden State Parkway. However, the Little Egg Harbor site is in a designated Limited Growth Area, which has the most restrictions on development, and is also the furthest distance geographically from northern Ocean County, where most of the county's solid waste is generated. The Lacey and Waretown sites appear to have the least problems in these terms. Unacceptable secondary growth which would be induced by sewer extensions and other utilities to the facility would be a major consideration at the Lacey, Waretown, and Little Egg Harbor sites and would require careful analysis and planning.

I trust this guidance helps you to proceed with the siting, design, and development process. If you have any questions about this memorandum of record or the CAFRA application process, do not hesitate to contact this Bureau at the above address or by phone at (609) 292-0062.

Sincerely,

Marianne Merritt

Marianne Merritt
Bureau of Planning and Project Review

1 Eldred, William T., Jr. The Garbage Crisis: A Question of Dollars and Sense. New Jersey Municipalities. April, 1985.

2 American Ref-Fuel. Waste-to-Energy Systems. Houston, TX. 1984.

3 Signal RESCO. Westchester RESCO-From Dream to Reality. Hampton, NH. 1984.

MM/rk
cc: Mr. John Sparmo, Bureau of Coastal
Enforcement and Field Services
Director, N.J. Division of Waste Management
Ocean County Planning Board

RECEIVED
JUL 21 1986
ELSON T. KILLAM ASSOCIATES, INC.
ENVIRONMENTAL & HYDRAULIC ENGINEERS

State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION

DIVISION OF
FISH, GAME AND WILDLIFE
RUSSELL A. COOKINGHAM
DIRECTOR

PLEASE REPLY TO:
CN 400
TRENTON, NEW JERSEY 08625

June 27, 1986

Andrew A. Frye
Elson T. Killam Associates, Inc.
27 Bleeker St., P.O. Box 1008
Millburn, N.J. 07041

RE: Endangered Soecies Locations - Resource Recovery Sites, Ocean County

Dear Mr. Frye:

This is in response to your request for the location of endangered/threatened species in the vicinity of sites being considered for a resource recovery facility in Ocean County as indicated on the the maps you provided. Below, I have listed all endangered/threatened species information we have for each of the five sites under consideration. As you are aware the areas include significant undeveloped acreage of typical pinelands communities. We have many records of endangered and threatened species from these areas:

LAKEWOOD (STAVOLA) SITE: northern pine snake, are recorded from the periphery of this site.

MANCHESTER (ASARCO): northern pine snake are recorded from the periphery of this site. Potential habitat may also exist for Pine Barrens treefrog.

DOVER SITE (CIBA-GEIGY): we have no records of any endangered or threatened species from the immediate vicinity of this site.

OYSTER CREEK SITE / WARETOWN SITE: Pine Barrens treefrog, northern pine snake, corn snake, and wood turtles have been recorded in the immediate vicinity of these sites. We also have an unconfirmed report of the eastern mud salamander occurring in this area.

LITTLE EGG SITE: Pine Barrens treefrog, pine snakes, and timber rattlesnakes have all been records from the periphery of this site.

The following briefly summarizes the status and habitat preferences of the above mentioned species:

Pine Barrens treefrog (Hyla andersoni - E) - shallow acidic ponds and bogs in pinelands area.

northern pine snake (Pituophis melanoleucus -T) - pine/oak forests on sandy soils.

corn snake (Elaphe guttata - E) - pine/oak forests on extremely well drained sandy soils.

timber rattlesnake (Crotalus horridus - E) - in southern New Jersey this species is found in extensive tracts of pine/oak or oak/pine forest away from human encroachment. Cedar swamps and pitch-pine lowlands are used during hibernation.

wood turtle (Clemmys insculpta -T) - occurs in hardwood forests, needs clean streams in or adjacent to wet meadows and farmland.

eastern mud salamander (Pseudotriton montanus -T) - clear unpolluted springs and seepage areas including old cranberry bogs.

Potential habitat may also exist on any of these sites for:

barred owl (Strix varia- T) - breeds in moist bottomland forests.

bog turtle (Clemmys munlenbergi -E) - open sphagnum bogs, swamps and marshy meadows with clear, slow moving streams and muddy bottoms.

red-shouldered hawk (Buteo lineatus- T) - breeds in moist bottomland forests

red-headed woodpecker (Melanerpes erythrocephalus- T) - open groves of large trees and/or burned over forests with plentiful snags.

While we have no records of any of these species from the indicated areas, if suitable habitat exits, they may be present.

If you require additional information, please contact this office.

Sincerely,

Russell A. Cookingham
Director

RAC:CDJ:cy

OCEAN COUNTY PLANNING BOARD
COURT HOUSE SQUARE
C.N. 2191
Toms River, New Jersey 08754
(201) 929-2054

December 30, 1985

Mr. Dennis Suler
Elson T. Killam Assoc.
27 Bleeker St.
Millburn, NJ 07041

Re: Pinelands Requirements for Resource Recovery Facilities

Dear Dennis:

I have enclosed a response from Mr. Moore, the Executive Director of the Pinelands Commission, to my recent letter asking for clarification of the Pinelands requirements regarding resource recovery facilities. The attached letter indicates that the existing Pinelands Plan would permit resource recovery facilities to be located only within areas identified as regional growth zones.

If you have any questions concerning this, please call me.

Very truly yours,

Steven L. Pollock

Steven L. Pollock
Planning Director

SLP:mjb
Encl.
cc: Alan W. Avery, Jr., Principal Planner
Service List

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The Pinelands Commission

P.O. Box 7, New Lisbon, N. J. 08064 (609) 894-9342

December 27, 1985

Steven L. Pollock
Planning Director
Ocean County Planning Board
Court House Square
CN 2191
Toms River, NJ 08754

HAND DELIVERED

Dear Mr. Pollock:

Thank you for your letter of December 23, 1985 regarding resource recovery facilities.

Such a facility would presently be a permitted use in regional growth areas of the Pinelands. The applicable standards would be those contained in Article VI of the Comprehensive Management Plan with specific interest relating to air quality and the disposal of residual materials from the plant. Other relevant standards of the Department of Environmental Protection would also have to be met.

Please let me know if you have additional questions.

Sincerely,

Terrence D. Moore
Executive Director

TDM/km

cc: Mr. Alan Avery
Mr. William Harrison

APPENDIX A

OCEAN COUNTY RESOURCE RECOVERY PROJECT

SOIL DESCRIPTIONS FOR CANDIDATE SITES

DoA - Downer Loamy sand, 0 to 5 percent slopes.

This well drained soil is found on divides and side slopes that are nearly level to gently sloping with the slopes being convex and range from 100 to 400 feet in length. In a wooded area the typical soil profile is:
Surface layer is grayish brown loamy sand about 2 inches thick; Subsurface layer is brown loamy sand 14 inches thick; Subsoil is yellowish brown sandy loam 15 inches thick and the Substratum is brownish yellow sand to a depth of 60 inches or more.
The permeability of this soil is moderate or moderately rapid in the subsoil and moderately rapid in the substratum. Available water capacity is low to moderate and runoff is slow. The seasonally high water table is greater than six feet.
Most of the acreage of this soil is used for woodland with a few acres farmed, and a few are in pasture. Common species of trees found on this soil are: pitch pine, black oak, white oak, scarlet oak, and chestnut oak.
This soil is suited to vegetables and fruit but has a slight water erosion hazard and a severe wind erosion hazard. Erosion can be controlled by providing windbreak hedges and planting cover crops.
This soil is generally suitable for most urban uses and is in the agricultural soil capability class IIs.

Class II - Soils that have moderate limitations that reduce the choice of plants or that require moderate conservation practices. (s)- This indicates that the soil is mainly limited because it is droughty.

KlA- Klej loamy sand, 0 to 3 percent slopes.

The Klej is a nearly level, moderately well drained or somewhat poorly drained soil found in depressed areas and on low terraces. The typical soil profile is:
Surface layer brownish gray loamy sand 3 inches thick; Subsoil 33 inches of brownish yellow and yellow loamy sand with light gray mottles in the lower part and Substratum to a depth of 60 inches or more is light gray sand with yellowish brown mottles.
The permeability of this soil is rapid and if the soil is drained, available water capacity is low. Water is available to plants early in the season from the water table with the seasonal high water table at a depth of 1 1/2 to 4 feet. During years with normal rainfall, the water table starts to rise in October and is nearest to the surface in January. It starts to drop in April and is at a depth of 5 feet or more by June.
This soil is suited to cultivated crops such as peaches and vegetables but has a slight erosion hazard, which can be controlled by planting cover crops. Most of the acreage of this soil is used for woodland with typical trees including; black oak, white oak and pitch pine. Where wildfires have been severe, the pitch pine predominates. The trees grow slowly because of the low available water

capacity during the growing season.
The seasonal high water table limits this soil for most urban uses, particularly as sites for houses with basements, septic disposal fields, and sanitary landfills. The runoff is slow and the agricultural soil capability subclass is IIIw.

Class III - Soils with severe limitations that reduce the choice of plants, or that require special conservation practices, or both. (w) - indicates that water in or on the soil interferes with plant growth or cultivation.

LhA - Lakehurst sand, 0 to 3 percent slopes.

The Lakehurst sand is very similar to the Klej in that it is a nearly level, moderately well drained or somewhat poorly drained soil and found in depressed areas and on low terraces. The typical soil profile is: Surface layer very dark sand about 2 inches thick; Subsoil 33 inches of dark brown, yellowish brown, and light yellowish brown sand and has light gray mottles in the lower part; Substratum depth of 60 inches or more is light gray sand with yellowish brown mottles.
The permeability of this soil is rapid in the subsoil and substratum. Water capacity is low however, water is available to plants early in the season from the water table with the seasonal high water table at a depth of 1 1/2 to 4 feet. This soil is identical to the Klej in that during years with normal rainfall, the water table starts to rise in October and is nearest to the surface in January. It starts to drop in April and is at a depth of 5 feet or more by June.
Because of low available water capacity, rapid permeability and very low fertility this soil is not adequately suited to cultivated crops.
Most of the acreage is used for trees, although the soil is poorly suited to commercial forest production. Pitch pine, black oak, white oak, and blackgum are the common species. As with the Klej soil, trees grow slowly because the available water capacity is low during the growing season.
This soil is not appropriate for houses with basements, septic disposal fields, and sanitary landfills due to the seasonally high water table. This soil is in the agricultural capability class IVw.

Class IV - These soils have very severe limitations that reduce the choice of plants , or that require very careful management. (w)- indicates that water in or on the soil interferes with plant growth or cultivation.

LwB - Lakewood sand, 0 to 5 percent slopes.

This excessively drained soil is nearly level to gently sloping and found on divides and side slopes. The slopes are convex and range from 100 to 500 feet in length. The typical soil profile is: Surface layer is black sand 1 inch thick; Subsurface layer is light brownish gray sand 9 inches thick; Subsoil is yellowish brown sand 26 inches thick and the substratum is brownish yellow sand to a depth of 60 inches or more.
Available water capacity is low with the permeability rapid in the subsoil and rapid to moderate in the substratum. Runoff is slow.
This soil is inadequate for crops and pasture due to low fertility, low available water capacity, and rapid permeability.
Although most of the acreage is wooded, this soil is not well suited for commercial trees for the same reasons that apply to crop and pasture production. Pitch pine, blackjack oak, post oak, chestnut oak, white oak, and black oak are common species found on this soil.
This soil is generally suitable for most urban uses and the agricultural capability class is VIIs.

Class VII - These soils and landforms have limitations that nearly preclude their use for commercial crop production. (s)- indicates that the soil is mainly limited because it is droughty.

PM - Pits, sand and gravel.

This soil unit consists of deep, excessively drained to very poorly drained soil material that is dominantly made up of the spoil in a borrow pit, sand pit, gravel pit, or clay pit during mining or after mining has taken place. Slopes range from level bottoms to vertical walls around the excavation.
The soil material in this unit is predominantly sandy and is 5 to 35 percent gravel. The permeability is quite variable being moderately rapid or rapid in borrow areas and sand & gravel pits while slow in clay pits.
Correspondingly the available water capacity is low in sandy areas and moderate in clayey areas. Most areas receive moderate to large amounts of water from the areas adjacent to the pits. The water table is between the surface and a depth of more than 5 feet.
Because of the variability of characteristics, these areas need onsite investigations for reliable interpretation. This unit is not assigned to a agricultural capability class.

APPENDIX C

HIGHWAY AUTHORITY RESOLUTION

New Jersey Highway Authority

EXECUTIVE OFFICES • WOODBRIDGE, NEW JERSEY, 07095 • (201) 442-8600

Garden State Parkway
Garden State Arts Center

C E R T I F I C A T I O N

I, ANTONETTE PANTALEO, Assistant Secretary of the New Jersey Highway Authority, DO HEREBY CERTIFY that the attached is a true and correct copy of RESOLUTION 86-178 entitled "RESOLUTION AUTHORIZING THE EXECUTIVE DIRECTOR TO NEGOTIATE AN AGREEMENT WITH THE COUNTY OF OCEAN - RESOURCE RECOVERY PLANT - IMPROVEMENTS TO INTERCHANGE 69" which was duly adopted at the Regular Meeting of the New Jersey Highway Authority conducted on July 24, 1986.

Antonette Pantaleo
Assistant Secretary

RESOLUTION 86-178

RESOLUTION AUTHORIZING THE EXECUTIVE DIRECTOR TO NEGOTIATE AN AGREEMENT WITH THE COUNTY OF OCEAN RESOURCE RECOVERY PLANT - IMPROVEMENTS TO INTERCHANGE 69

WHEREAS, the Authority is advised by its Chief Engineer that the County of Ocean is under mandate from the New Jersey Department of Environmental Protection to construct a resource recovery plant to minimize garbage disposal in landfills; and

WHEREAS, in connection therewith, the County of Ocean has requested that the Authority permit the construction of either a) a dedicated interchange to be used only by trucks serving the resource recovery plant at Mile 71, one-half mile north of the existing Interchange 69, Waretown Road, or b) the construction of new ramps to and from the north at existing Interchange 69, Waretown Road; and

WHEREAS, the dedicated interchange would serve a resource recovery facility in Lacey Township on a site owned by Jersey Central Power & Light Company adjacent to the Oyster Creek Nuclear Generating Station, while construction of new ramps at the existing Interchange 69 would serve a resource recovery facility to be located off Waretown Road in Waretown; and

WHEREAS, the Chief Engineer has advised that construction of new ramps to and from the north at Interchange 69 is more advantageous to the Authority than construction of a dedicated interchange since, among other advantages, construction of new ramps will improve service to local roads, and

WHEREAS, the Chief Engineer has further advised that the dedicated interchange in Lacey Township is not advantageous to the Authority as it will establish a precident in that requests for dedicated interchanges have been rejected in the past and all Parkway interchanges connect to a public street or highway and the resource recovery facility will be located close to the Parkway and clearly visible; and

WHEREAS, the Chief Engineer has therefore recommended authorization for the Executive Director to negotiate an Agreement with the County of Ocean for construction of new ramps to and from the north at Interchange 69, said agreement subject to ratification by the Authority;

RESOLUTION 86-178 (Continued)

NOW, THEREFORE, BE IT RESOLVED by the New Jersey Highway Authority and the Members thereof, that:

1. Authorization is hereby given for the Executive Director to negotiate an agreement with the County of Ocean for construction of new ramps to and from the north at Interchange 69 in connection with the County's proposed Resource Recovery Plant, as described in the preamble of this resolution

2. The agreement, as negotiated by the Executive Director, is subject to ratification by the Commissioners at a subsequent meeting of the Authority.

APPENDIX D

SITE LOCATION MAPS AND PROPERTY DESCRIPTION

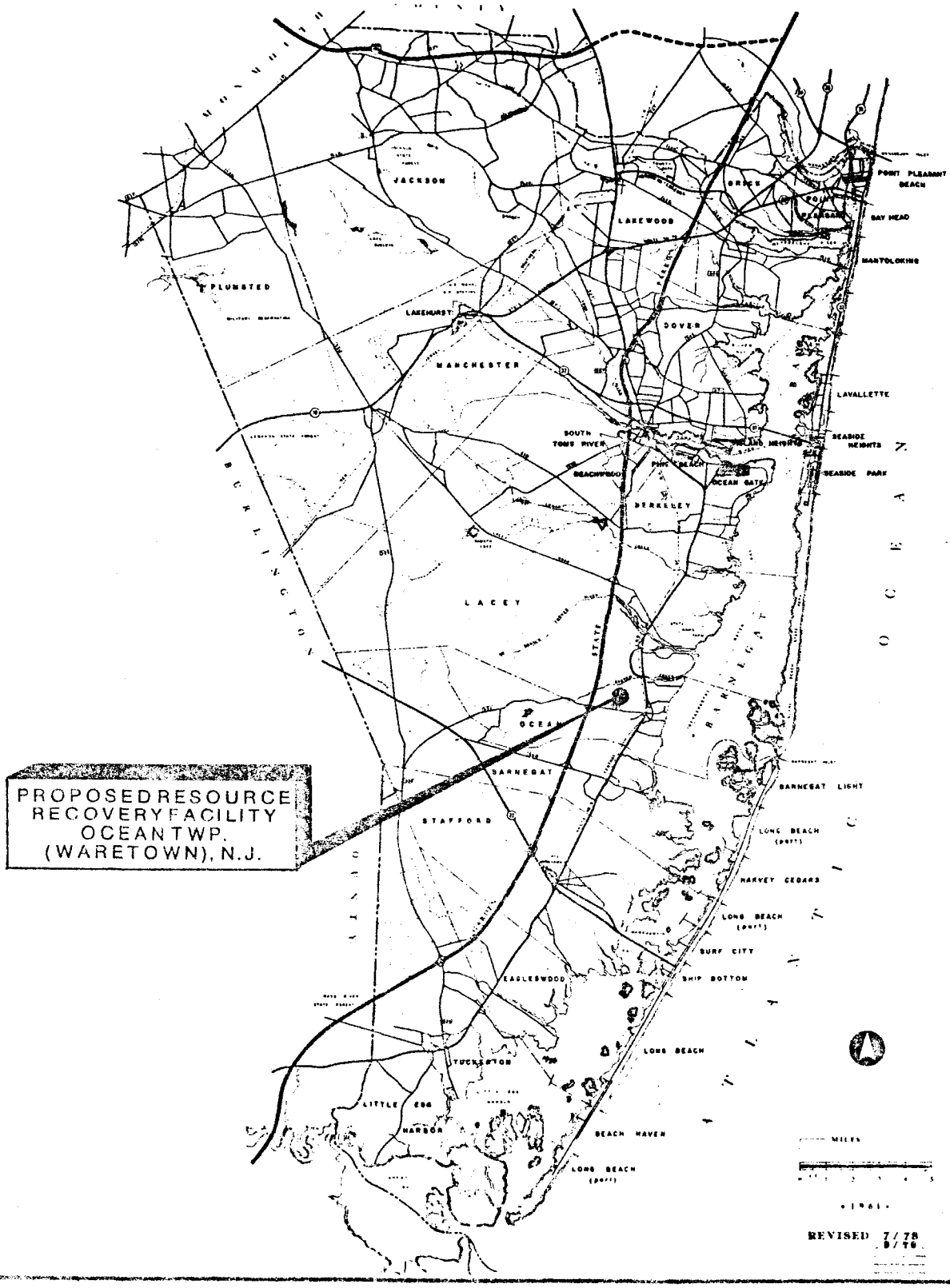
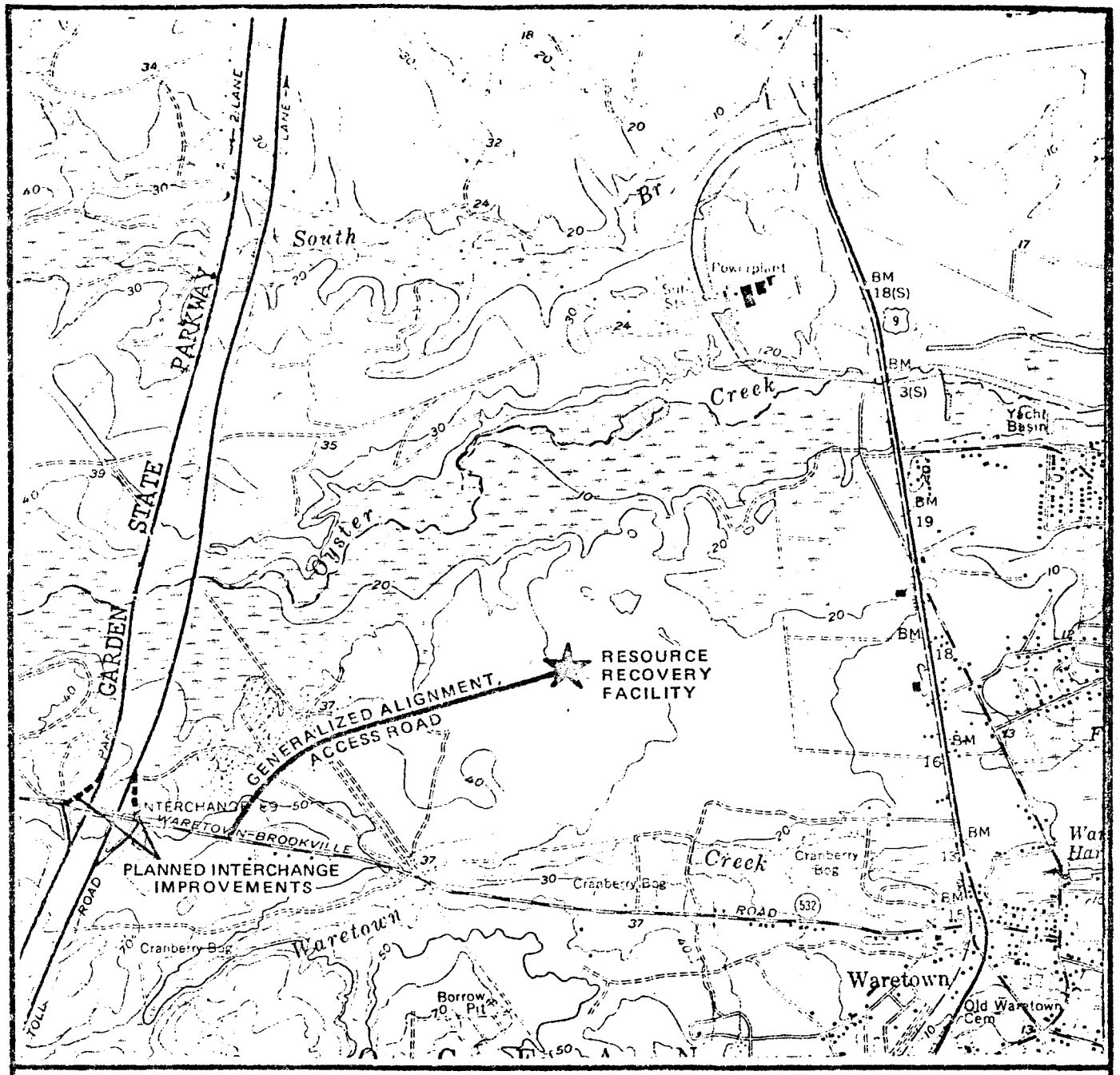


FIGURE 1

OCEAN COUNTY RESOURCE RECOVERY PROJECT SITE LOCATION MAP

MAP SOURCE:
O.C.P.B.

GBB - KILLAM
27 BLEEKER STREET
MILLBURN, NEW JERSEY 07041



OCEAN COUNTY
RESOURCE RECOVERY PROJECT
OCEAN TOWNSHIP SITE
(WARETOWN)

N

SOURCE: U.S.G.S. 7.5 MIN.
FORKED RIVER QUADRANGLE

SCALE: 1" = 2,000'

FIGURE 2
GENERAL
SITE LOCATION MAP

GBB - KILLAM
27 BLEEKER STREET
MILLBURN, N.J. 07041

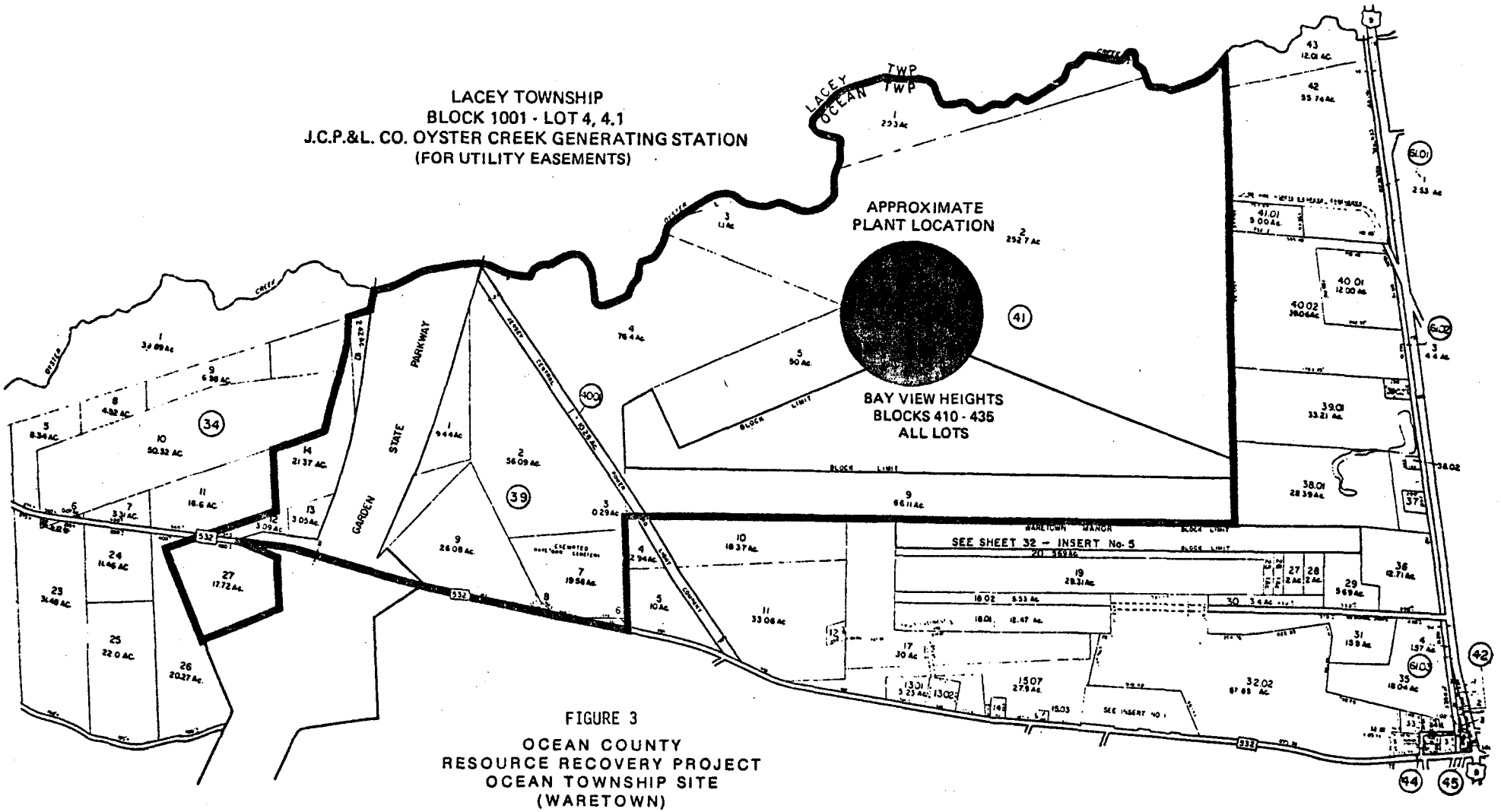


FIGURE 3

OCEAN COUNTY
RESOURCE RECOVERY PROJECT
OCEAN TOWNSHIP SITE
(WARETOWN)

PROPERTIES POTENTIALLY AFFECTED BY DEVELOPMENT OF PROPOSED RESOURCE RECOVERY FACILITY, ASSOCIATED IMPROVEMENTS AND UTILITY EASEMENTS.