

COASTAL ENERGY IMPACT
STRATEGY

JAN 1981

Coastal Zone Management Program

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WISCONSIN COASTAL ENERGY IMPACT STRATEGY

Office of Coastal Management
Wisconsin Department of Administration
January, 1981

I. Coastal Energy Facilities and Activities

Wisconsin coastal counties are currently most impacted by, and expect to be most impacted in the near future by, electric generating stations and transmission lines, coal transportation and storage facilities, petroleum processing and storage facilities, and natural gas transportation and storage facilities. Wisconsin also expects potentially significant impacts from new coastal alternative energy facilities such as alcohol fuel production plants, wood-fired power plants, and both central and dispersed wind energy conversion systems.

A. Coastal Coal-Fired Power Plants. Two major new coal-fired power plants, with a total capacity of 1600 MW, are under construction at Pleasant Prairie (Kenosha County) and Edgewater (Sheboygan County). Three locations in Brown, Oconto, and Ozaukee County are currently under consideration as sites for two 400 MW units which will be constructed during the mid-1980s. The Haven Site (Sheboygan County), originally proposed for a now-cancelled nuclear unit, may also be considered for a coal-fired plant (See Figure 2).

B. Radioactive Waste Disposal/Storage Facilities at Existing Coastal Nuclear Power Plants. Spent fuel storage pools have recently been expanded at the Point Beach and Kewaunee nuclear power plants. A major repair operation at Point Beach, the removal of defective steam generators, will require construction of barge unloading facilities and permanent disposal facilities for high-level radioactive waste. On-site disposal facilities is a prime consideration at the present time (See Figure 2).

C. Coastal Coal Transportation and Storage Facilities. Coal transportation is a major activity in the Ports of Ashland, Green Bay, Manitowoc, Milwaukee, Port Washington, Sheboygan, and Superior. Wisconsin Great Lakes ports currently receive more than 3 and 1/2 million tons of eastern coal per year and ship out 4 million tons of western coal per year. Western coal shipments from the existing Superior Midwest Energy Terminal are expected to at least double in the next five years, and new transshipment facilities are being considered for Green Bay, Kewaunee, Superior and several sites in Southeastern Wisconsin. Western coal shipments from Wisconsin could reach 10 to 20 million tons per year by 1985. Eastern coal shipments, essential for Wisconsin's utilities and paper mills, are anticipated to double by 1990. Green Bay will be most effected by increased eastern coal

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receipts. Increased shipments of both eastern and western coal will increase demand for coal carrying vessels. A major facility for the construction and repair of coal vessels (and oil tankers) is the Bay Shipyard in Sturgeon Bay, Wisconsin. This facility has constructed 15 self unloading bulk cargo carriers, suitable for carrying coal or iron ore or both, since 1970, and anticipates increased demand for such ships in the near future. The yard currently services approximately 12 ships per year. Largely as a result of work on coal ships and oil tankers, employment at Bay Shipyard has increased from 1,100 workers in 1976 to its current level of more than 1,900 workers.

Three coastal rail lines will be heavily impacted by increased unit train coal deliveries: the Burlington Northern to Superior, the Green Bay and Western to Green Bay and Kewaunee, and the Chicago and Northwestern from the Illinois border to Sheboygan. Non-unit train deliveries on other coastal rail lines will also increase (See Figure 1).

- D. Coastal Natural Gas and Petroleum Transportation and Storage Facilities. All 15 of Wisconsin's coastal counties are currently transversed by natural gas pipelines. A major natural gas pipeline is scheduled for construction across the Lake Superior coastal counties in 1981 and 1982. Douglas County is currently under consideration as a site for a natural gas processing plant. Wisconsin Natural Gas Company is currently expanding its liquified natural gas peak shaving facilities at Oak Creek in Milwaukee County. A major oil company is planning a reorganization and expansion of its terminal facilities at Jones Island in Milwaukee harbour. Coastal locations will also be impacted by oil storage facilities associated with new coal-fired power plants, since these plants rely upon fuel oil for boiler start-ups and flame stabilization.
- E. Coastal Biomass Energy Conversion Facilities. Wisconsin has abundant biomass resources, and the utilization of these resources will involve the construction of major new facilities in coastal counties. Major alcohol fuel production facilities are currently proposed for the Ports of Green Bay, Milwaukee, and Superior, and sites in Algoma, Ashland, Manitowoc, and Sheboygan are under consideration. These facilities will convert whole grain, grain dust, and grain and seed spoilage into alcohol, which will be mixed with unleaded gasoline to produce gasohol. An existing oil-and coal-fired power plant in Ashland has converted two of its steam boilers to a mixture of wood waste and western coal. Additional conversions to wood waste are expected, and related facilities such as wood densification and/or pelletization facilities are expected to be constructed in the Lake Superior coastal counties. An existing Refuse-Derived Fuel (RDF)

processing plant is located in Milwaukee, and similar facilities are under consideration in Brown and Sheboygan Counties (See Figure 3).

- F. Wind Energy Conversion Systems. There is great interest in both large and small scale wind machines, sited individually or in so-called "wind farms", throughout Wisconsin's coastal areas. Individual residences and businesses have already installed or are planning to install small scale wind energy systems. An electric utility in northern Wisconsin is collecting wind speed data on the Bayfield peninsula, in order to assess the feasibility of installing large scale wind generators there. The Eastern Wisconsin utilities have commissioned a study of central wind generating stations employing two MW or larger wind turbines. A consultant hired by the Wisconsin Public Service Commission has developed a proposal for the installation of 30,000 small-scale (40 KW) wind machines at dispersed locations throughout the eastern part of the state to displace the generation requirements of one 400 MW coal fired power plant.

II. Anticipated Coastal Energy Impacts

The economic, environmental, and social impacts of traditional facilities such as power plants and coal docks are relatively well understood. Great Lakes coastal energy facilities impacts are usually most serious in the areas of environmental and recreational loss, transportation impacts, and construction impacts. Nonetheless, the operating impacts of these facilities can be substantial. The impacts of newer energy systems such as alcohol fuel production facilities, large wood-fired utility boilers, and wind energy conversion systems are not yet well understood.

- A. Environmental and Recreational Losses. The construction and operation of coal transportation and storage facilities, power plants, and oil and natural gas transportation and storage facilities have direct and immediate impacts on the uses of coastal lands. Impacts from existing facilities are as important as the potential impacts of new and expanded facilities and activities. Construction and operation of these facilities preempts large areas of land which could be used for recreation or natural areas. The visual and noise pollution from these facilities affect not only the immediate site but the use of land and water areas adjacent to these facilities as well. Increased harbor traffic by coal and oil vessels restricts recreational use of harbor areas for fishing, boating, swimming, and other activities. Oil spills, natural gas explosions, and runoff, leachates, and fugitive dust emissions from coal piles, pose significant risks to the environment.

- B. Socio-Economic Impacts. While socio-economic impacts are generally not the greatest area of concern regarding new Great Lakes coastal energy facilities, some of these facilities do result in substantial local impacts. A good example is the increased production of coal ships and oil tankers in Sturgeon Bay. The influx of workers to this facility has a significant impact upon the local housing market and upon the local government's ability to provide educational, health and emergency services. The construction of power plants, involving up to a thousand or more construction workers over a four to five year period can significantly impact coastal communities, even though the operation of these facilities may require less than 200 permanent new workers. Social disruption resulting from the displacement of residences and farms as well as community disruption by construction traffic, noise and dust are also serious concerns.
- C. Transportation Impacts. Coal transportation and storage facilities may seriously disrupt existing traffic patterns and result in increased maintenance and repair requirements for existing transportation infrastructure. Unit train coal deliveries may result in significant delays at grade crossings for surface vehicle traffic, particularly emergency service vehicles. Commercial deliveries by truck may also be seriously affected. Delivery of coal by ship in areas where vehicle bridges must be lifted to allow vessel passage may seriously affect automobile and truck traffic as well. Increased truck traffic around coal docks may result in deterioration of roads and bridges. Increased deliveries by ship will result in increased dredging and dredge spoil disposal requirements, due to shoaling resulting from bow thrusters of modern ships.
- D. Air and Water Quality Impacts. Coal fired power plants, coal docks, and petroleum facilities may result in degradation of air and water quality because of increased air borne emissions of sulfur dioxide, nitrogen oxides, hydrocarbons, and particulates. Water quality may be impacted by construction period dust and runoff, runoff and leachates from coal piles, oil spills, and thermal and chemical pollution resulting from cooling system discharges.
- E. Biomass and Wind Energy Systems. While the impacts of large scale alternative energy systems are not yet fully understood, there are several areas which clearly require further study. More information is required about the water quality impacts, particularly the water consumption requirements, for alcohol fuel production facilities. More information is needed about increased particulate emissions from wood-fired utility boilers. More information is also needed about the impacts of wind energy conversion systems, particularly the possibility of interference

with television and microwave transmission, negative impacts on wildlife (particularly migratory birds and birds of prey), and considerable land use requirements. The study prepared for the Wisconsin Public Service Commission on dispersed siting found that installation of 30,000 wind machines (rated at 40 KW each) might require 100 square miles of land.

III. Impact Mitigation Strategy

- A. Impact Mitigation Without CEIP Assistance. The Wisconsin Coastal Management Council has established the following objectives which are the basis of the Wisconsin Coastal Management Program strategy for mitigating the negative impacts of new and expanded coastal energy facilities and activities. These objectives are:
- a. Increased Public Awareness. WCMP should increase public awareness of the coastal role in supplying Wisconsin's energy requirements and the economic, environmental and social impacts of coastal energy facilities. This is a medium priority objective.
 - b. Improved Local Government Management Capability. WCMP should improve local government capability to assess and manage impacts resulting from new or expanded coastal energy facilities. This is a high priority objective.
 - c. Improved Local Government Regulatory Capability. WCMP should improve local government capability to participate in regulatory processes governing the siting of new facilities in coastal areas. This is a medium priority objective.
 - d. Encouragement of Alternative Energy Systems. WCMP should encourage the development of environmentally acceptable alternative energy systems or technologies which are specifically suited to coastal locations (wind, solar, biomass, wave, coastal refuse derived fuel, etc.). This is a high priority objective.

Without CEIP assistance, WCMP would be severely limited in its ability to meet these impact mitigation objectives. The State has committed General Purpose Revenue to support one energy facilities analyst in the Department of Administration. This half-time position is specifically assigned to assess impacts of energy facilities and activities, develop impact mitigation strategies, and provide direct technical assistance to coastal communities.

- B. State and Local Control and Mitigation Measures. Wisconsin has one of the most comprehensive power plant siting processes in the country. The Power Plant Siting Law, enacted in 1975, requires electric utilities to file system-wide advance construction plans with the Wisconsin Public Service Commission (PSC) every two years. A proposed power plant site and/or transmission line route must be included in an approved advance plan before the utility can apply for a site specific Certificate of Public Convenience and Necessity (CPCN). A CPCN is granted only after an Environmental Impact State (EIS) has been prepared in accordance with the Wisconsin Environmental Policy Act (WEPA) and all necessary air and water quality permits have been granted by the Wisconsin Department of Natural Resources (DNR). Public hearings in the affected localities are an integral part of the siting process. The siting process requires the utility to establish the need for power from a particular facility and to prepare a comparative impact assessment of alternative sites and technologies.

Wisconsin does not have a comprehensive siting process for other types of energy facilities. WCOMP is currently evaluating the desirability of new legislation to create such a comprehensive siting process for coastal facilities. Construction of a coal dock, petroleum tank farm, pipeline, or other facility usually requires permit(s) from one or more state agency. DNR permits, for example, are required for placing structures in navigable waters, dredging, discharging air and/or water pollutants, and disposing of solid wastes. The Department of Industry, Labor and Human Relations must approve construction of all petroleum storage tanks having an individual capacity of 8,000 gallons or more. Construction of a natural gas pipeline or peak-sharing plant requires a Certificate of Authority from the PSC.

Under WEPA, the state agency granting a permit or permits must determine the environmental significance of the proposed action. If the agency determines that an action is "clearly major and significant," then an EIS is required. The EIS must address social, cultural, and economic impacts as well as physical, chemical, and biological consequences.

In addition to these controls at the state level, energy facilities siting must comply with county shoreline zoning ordinances. Municipalities may also exercise local zoning authority over facilities which affect public health and safety.

The intent of these state and local regulations is to ensure that energy facilities are constructed and operated in compliance with statutory or administrative standards. They are therefore most appropriately characterized as control measures, rather than mitigation measures. Energy developers are not legally required

to mitigate negative impacts beyond meeting minimal state standards. In response to pressure from affected parties (such as local citizens, environmental groups, and state and local agencies), a state or local authority may attach condition(s) to a permit which require(s) an energy developer to mitigate specific impacts, but conditional permits are issued on a case by case basis, and are subject to legal challenge by the energy developer. The Wisconsin regulatory processes thus provide opportunities for impact mitigation through conditional use permits, but do not mandate mitigation except in narrow instances (such as air quality impacts) and then only to the extent necessary to meet established standards.

- C. State, Local or Federal (Non-CEIP) Financial Assistance For Impact Mitigation. Municipalities and counties impacted by major new power plants receive payments from the Shared Utility Revenue fund in lieu of property taxes. The complicated distribution formula was devised in response to the development of "tax islands" around major nuclear facilities in the early 1970's. Under the current statutes, a town which is the site of a new 400 MW coal-fired plant would receive a maximum payment of \$300,000 per year, while a county could receive a maximum of \$600,000 per year.

Municipalities and counties impacted by coal and crude oil transportation receive payments from the state occupational tax of \$0.05 per ton on bituminous coal delivered to brokerages and \$0.05 per ton on crude oil delivered to refineries. Revenues so collected are divided as follows: 10% to the state, 20% to the county, and 70% to the town, city or village. The City of Superior, the state's largest local recipient of occupational taxes on coal, will receive approximately \$150,000 for 1979. Continued collection of the occupational tax is uncertain, however, pending a law suit filed by the Burlington Northern Railroad in January, 1980.

While shared utility revenue and occupational tax payments provide an important source of revenue for communities impacted by power plants and coal docks, these payments are of limited significance as a means of mitigating impacts. First, the level of payments is determined by an arbitrary formula which has no relation to actual impact of a particular facility in a particular community. The level of funding that any community may receive at a future date is unpredictable. The utility shared revenue distribution formula has been altered by legislation at least five times in the past ten years and the constitutionality of the occupational tax is now under question. Moreover, the timing of these payments to a community does not necessarily reflect the timing of needed increases in public services. Community need may be greatest during the construction period, while payments are greatest during the operating period. Finally, there is no legal requirement that

the revenues shared with affected localities must actually be applied to impact mitigation. Further analysis is required to determine whether legislative changes can improve the use of shared utility revenue and occupational tax payments to mitigate impacts.

No Wisconsin coastal community has received non-CEIP Federal financial assistance for impact mitigation. The City of Superior is not eligible for federal Energy Impacted Area Development Assistance. Sturgeon Bay may be eligible for EIADA funds. The eligibility requirement for EIADA, which is based on the percentage of new workers employed in energy industries rather than the number of new workers employed, means that few if any Wisconsin coastal communities will benefit from this program. Pending federal legislation, the Federal Public Transportation Assistance Act, may provide financial assistance for improved maintenance of rail grade crossings required as a result of coal transportation.

- D. Wisconsin Strategy for Using CEIP Assistance. In Wisconsin, CEIP is totally integrated with the Coastal Management Program and is governed by the Wisconsin Coastal Management Council. Coastal energy impacts is one of eight priority issue areas identified by the Coastal Management Council. Other issue areas are: rural shorelands; toxic and hazardous substances; erosion and flood hazards; natural areas, parks and forests, fisheries; harbors; public access; and urban waterfronts. The Council recognizes the special nature of coastal energy impacts as an issue area which intersects with all other areas.
1. Characterization of Strategy. The timing of the state's mitigation strategy is both reactive and anticipatory. Wisconsin must react to environmental and recreational losses and transportation impacts of existing coal and petroleum transshipment and storage facilities. The state must also anticipate future impacts resulting from the construction and operation of new facilities and the expansion of existing facilities. State strategy is primarily oriented to prevent environmental and recreational losses, mitigate construction period impacts, mitigate transportation disruption, maximize economic benefits and offset negative environmental impacts. Expansion of public facilities will be a relatively minor part of the overall Wisconsin strategy, but may be significant in a few communities such as Sturgeon Bay and Superior. The Wisconsin mitigation strategy calls both for a strong direct state role to be carried out by the Office of Coastal Management, but also calls for a major role by local governments particularly in the Northwest and the Bay-Lake Regions. The Wisconsin Program operates on the principle of

a state/local partnership. Wisconsin's mitigation strategy employs a number of methods to achieve these aims. One will be to improve planning for new energy facilities at the state and local levels. Another method will be to provide the background research necessary to affect changes in the existing regulatory processes. Finally the program will offer financial assistance to local communities to improve their participation in regulatory proceedings and to carry out projects implementing mitigation strategies.

2. Goals and Objectives. During the next two grant years (October, 1981 - October, 1983) Wisconsin plans to use its FY 1981 and 1982 CEIP funds to address the following specific energy impact mitigation objectives:

Coal Transportation and Storage:

Impact of rail-to-vessel and vessel-to-rail facilities and coal vessel movements on recreational use of harbors.

Impact of unit train deliveries on truck and automobile traffic.

Impact of coal handling on audible noise levels.

Impact of coal vessel traffic on dredging and dredge spoil disposal requirements.

Impact of changes in occupational tax on coal shipments.

Air and water quality impacts of existing coal storage facilities.

Impact of coal ship construction on need for public services.

Electric Generating Stations:

Offset negative impacts of coal-fired power plants through Refuse-Derived Fuel use, district heating, and recreational use of buffer zones.

Impact of expanded spent fuel storage and radioactive waste disposal facilities at nuclear power plants.

Disposal options for Flue-Gas Desulphurization (scrubber) sludge from coal-fired power plants.

Air and water quality impacts of wood-fired power plants.

Siting criteria and regulatory guidelines for wind turbines.

Impact of large wind turbines and wind farms on wildlife.

Impact of recreational fishing near cooling system outlets (increased PCS concentrations).

Petroleum Transportation and Storage Facilities:

Impact of oil spills.

Impact of changes in occupational tax on oil shipments.

Impact of decommissioning terminals and storage tanks.

Dredging requirements for terminals in small ports.

Alcohol Fuel Production Facilities:

Water quality impacts of alcohol fuel production.

Siting criteria and regulatory guidelines for alcohol fuel production facilities.

Natural Gas Pipelines and Processing Facilities:

Construction period impacts.

3. Project Selection Criteria. Section 308 projects are selected through the same process employed for the Section 306 projects. The review process consists of three stages. First, an administrative analysis by the Office of Coastal Management determines whether or not the proposal is fundable and fits the general WCMP criteria. Second, relevancy analysis by the CEIP coordinator determines eligibility for 308(c)(1) or 308(d)(4) funding and whether the project addresses one of the four CEIP objectives established by the Coastal Management Council. Third, technical analysis by three or more outside experts

determines the validity of the problem addressed and the methodology applied to the problem.

The relevancy analysis is based upon the approved intra-state allocation process, according to the following criteria:

- a. Coastal energy activity/facility determination.
- b. Size, population, and vulnerability of impacted area.
- c. Immediacy of need.
- d. Consistency with Wisconsin Coastal Management Program and other state policies.
- e. Compliance with federal regulations and guidelines.
- f. Ability of applicant to carry out proposed project.
- g. Availability of matching funds.
- h. Geographic distribution.
- i. Transferability of findings.
- j. Cost of project and availability of non-CEIP funds.

At the conclusion of the technical review, all proposals are ranked according to cumulative point scores awarded in each of the three review stages. The Coastal Management Program Manager prepares, and submits, a draft budget based on the ranked list of project proposals. Final project selection is made by the Coastal Management Council in accordance with the state's approved process.

4. Project Selection Criteria Applicability. Project selection criteria are limited to state coastal management policies. All prospective project applicants are notified of selection criteria in the annual guidelines for applications for assistance. The applicant may appeal to the Coastal Management Council.

IV. Estimated C.E.I.P. Assistance Required by Wisconsin

Estimated CEIP Assistance required by Wisconsin is presented in Table

1. These dollar estimates are based on the following assumptions:

1. No CEIP loan funds will be available;

2. Inflation will average 10% per year over the next 5 fiscal years; and
3. If funding levels increase, administration will need to increase, with the CEIP coordinator position becoming a full time position, with necessary support.

A. Estimated CEIP Assistance Required By Project Types for FY 1981 AND 1982

1.	Wisconsin Office of Coastal Management CEIP Administration, coordination, and technical assistance	\$ 73,500
2.	Planning Projects (By Local Governments and State Agencies)	
	Coal Transportation/Storage Impacts	\$ 210,000
	Electric Generating Facilities Impacts	\$ 225,000
	Other (Petroleum, Natural Gas, Biomass, etc.) Impacts	\$ 126,000
3.	Environmental Recreational Loss Projects (By Local Governments)	\$
	Coal Transportation/Storage	\$2,250,000
	Other (Petroleum, Natural Gas)	\$ 315,000
4.	Total	\$3,199,500

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TABLE 1

ESTIMATED C.E.I.P. ASSISTANCE REQUIRED BY WISCONSIN
(Thousands of Dollars)

	FY 1981	FY 1982	FY 1983	FY 1984	FY 1985	FY 1981-1985
308(c)(1) Planning Assistance						
OCM Administration/Planning	35.0	38.5	42.4	46.6	51.3	
Local/Agency Projects:						
Coal Transportation/Storage	100.0	110.0	121.0	133.1	146.4	
Electric Generating Facilities	75.0	150.0	82.5	90.8	150.0	
Other	<u>60.0</u>	<u>66.0</u>	<u>72.6</u>	<u>79.9</u>	<u>87.8</u>	
Subtotal	270.0	364.5	318.5	350.4	435.5	1,738.9
308(d)(4) E-R Loss Assistance						
Coal Transportation/Storage	<u>1,000.0</u>	1,250.0	1,500.0	1,650.0	1,815.0	
Other	<u>150.0</u>	<u>165.0</u>	<u>181.5</u>	<u>199.7</u>	<u>219.6</u>	
Subtotal	<u>1,150.0</u>	<u>1,415.0</u>	<u>1,681.5</u>	<u>1,849.7</u>	<u>2,034.6</u>	8,130.8
TOTAL	1,420.0	1,779.5	2,000.0	2,200.1	2,470.1	9,869.7

Figure 1

Coastal Coal Transportation, Transfer, and Storage Facilities in Wisconsin

Coal Terminals

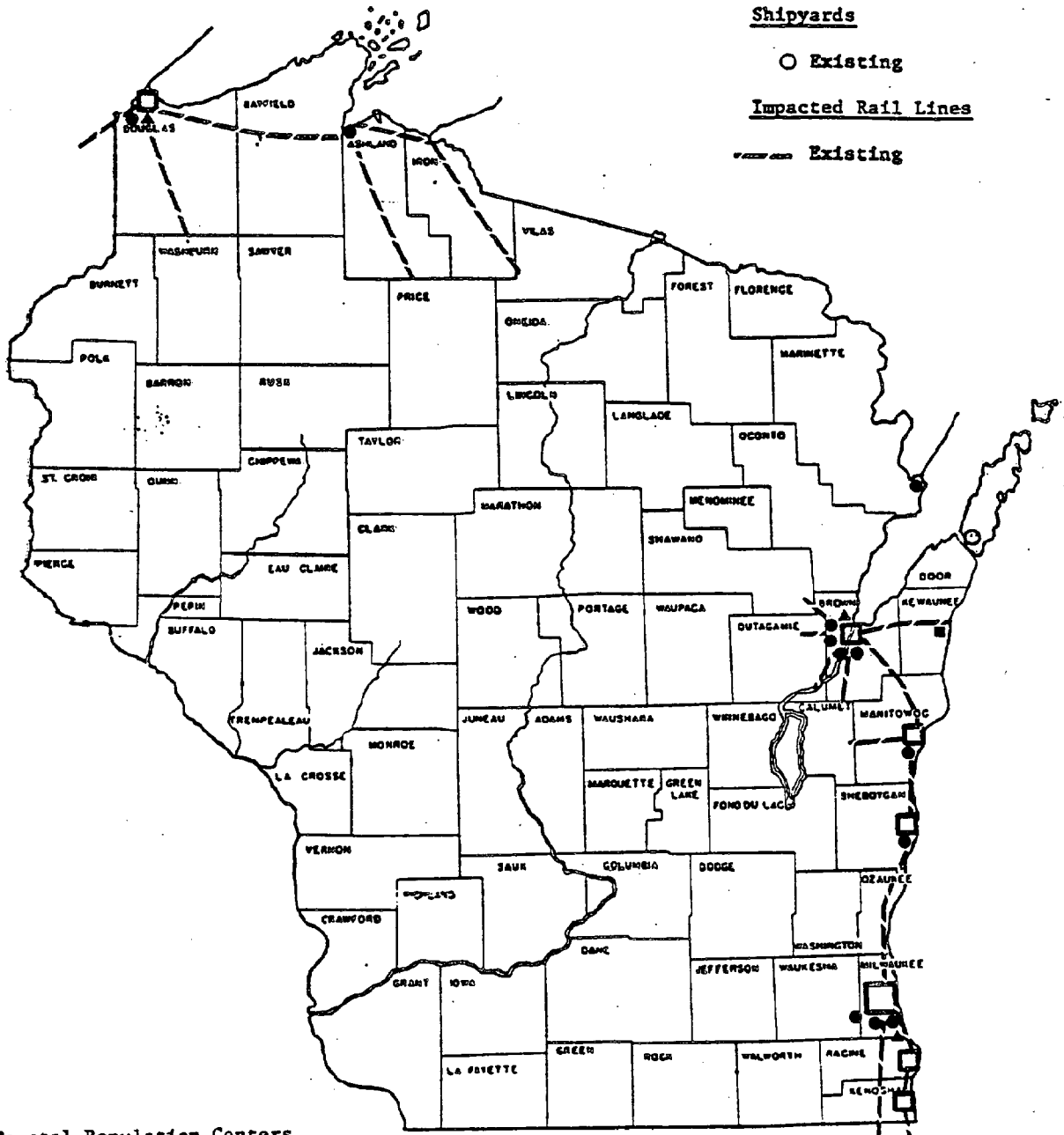
- Existing
- Planned
- ▲ Potential

Shipyards

- Existing

Impacted Rail Lines

- Existing



Major Coastal Population Centers

- 25,000 - 100,000
- Greater than 100,000

Figure 2
Coastal Power Plants in Wisconsin

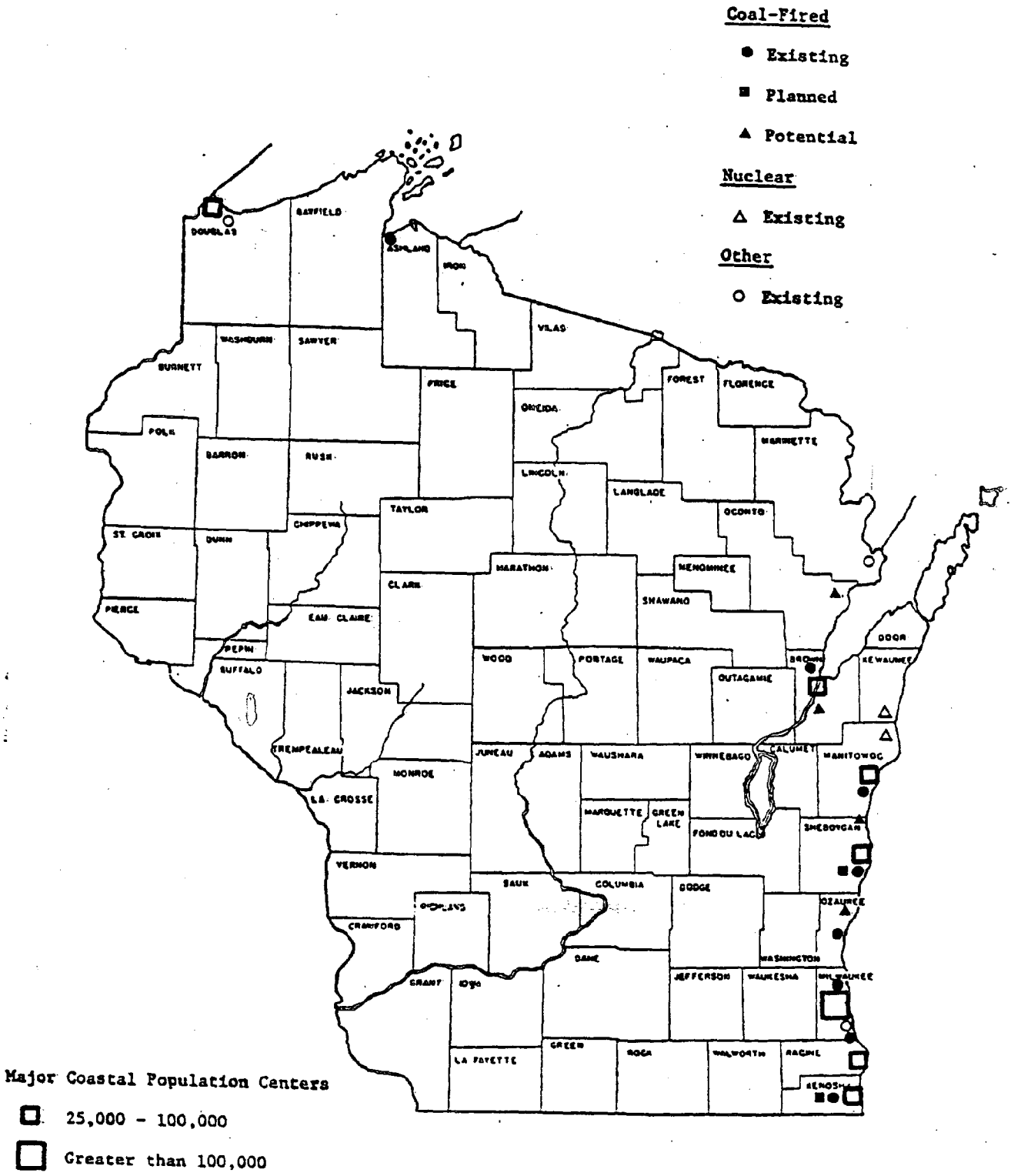


Figure 3.
Coastal Alternative Energy Facilities in Wisconsin

Refuse Derived Fuel Plants

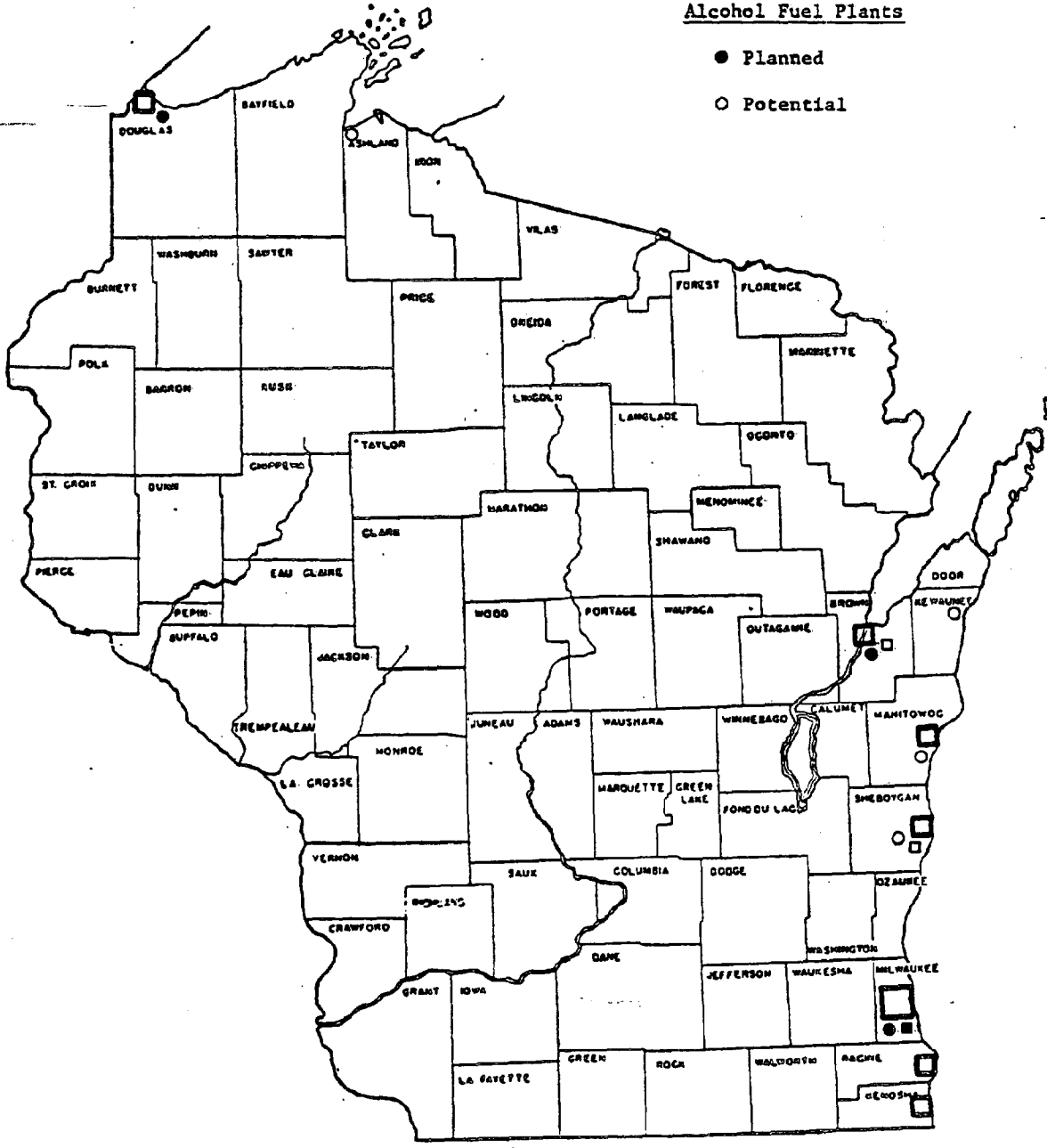
■ Existing

□ Potential

Alcohol Fuel Plants

● Planned

○ Potential



Major Coastal Population Centers

□ 25,000 - 100,000

□ Greater than 100,000

WISCONSIN COASTAL MANAGEMENT PROGRAM

Coastal Energy Impact Grants

SUMMARY

<u>Project and Recipient</u>	<u>Funding</u>		<u>Total</u>
	<u>Federal</u>	<u>Matching</u>	
Grant Year 1978-1979:			
- Study of Local Governments Assessment of Coastal Energy Facilities Impacts - Bay Lake RPC	\$ 26,000	\$ 7,000	\$ 33,000
Grant Year Total	<u>\$ 26,000</u>	<u>\$ 7,000</u>	<u>\$ 33,000</u>
Grant Year 1979-1980:			
- Economic and Environmental Impact Study of a Refuse-Derived Fuel System - Sheboygan County	\$ 40,000	\$ 10,000	\$ 50,000
- Impact Assessment of a Solar and Wind Energy System - Town of Washington Island	\$ 40,000	\$ 10,000	\$ 50,000
Grant Year Total	<u>\$ 80,000</u>	<u>\$ 20,000</u>	<u>\$100,000</u>
Grant Year 1980-1981:			
- Coastal Energy Impact Staff and Administration - Office of Coastal Management, DOA	\$ 9,600	\$ 3,100	\$ 12,700
- Planning for Consequences of Coastal Energy Facilities - City of Superior	\$ 28,000	\$ 7,000	\$ 35,000
- Coastal Energy Impact Technical Assistance - Bay Lake RPC	\$ 22,000	\$ 5,500	\$ 27,500
- Waterfront Recreation Plan for Kewaunee Harbor - City of Kewaunee	\$ 10,000	\$ 2,500	\$ 12,500
- Impact Assessment of a Solar and Wind Energy System - Town of Washington Island (Second Year)	\$ 45,000	\$ 11,250	\$ 56,250
- Alternative Energy System for Nature Center Building - Bay Beach Wildlife Sanctuary	\$ 4,200	\$ 1,968	\$ 6,168
- Replacement and Improvement of Harbor Area Recreational Resources - City of Superior	\$ 80,000	\$ 20,000	\$100,000
- Harbor Waterfront Recreation Development - City of Kewaunee	\$ 45,000	\$ 11,250	\$ 56,250
Grant Year Total	<u>\$243,800</u>	<u>\$ 62,568</u>	<u>\$306,368</u>
GRAND TOTAL FOR THREE GRANT YEARS	\$349,800	\$ 89,568	\$439,368

WISCONSIN COASTAL MANAGEMENT PROGRAM

Coastal Energy Impact Grants

I. Grant Year: 1978-1979

A. Federal C.E.I.P. Funds allocated to Wisconsin: \$27,165.00

B. Federal C.E.I.P. Funds obligated by Wisconsin: \$26,000.00

C. Projects:

1. Study of Local Governments Assessment of Coastal Energy Facilities Impacts.

a. Recipient: Bay Lake Regional Planning Commission, Green Bay.

b. Project Cost:

1) Federal: \$26,000.00

2) Local: \$ 7,000.00

3) Total: \$33,000.00

c. Purpose: To improve local government capabilities to assess and manage impacts of new coastal energy facilities and activities, and to improve local government capability to participate in the energy facilities siting and regulatory processes.

d. Products: Inventory of Coastal Energy Facilities; Paper on Legal Framework of Facilities Siting; Handbook on Energy Facility Impacts for use by citizens and local government officials; preparation of recommendations on energy facility siting for the Coastal Management Council; and provision of technical assistance to local communities in the BLRPC region.

e. Status: Inventory completed, 12/79; Legal Framework Paper completed, 10/79; Draft handbook available for public review, 11/01; Preliminary recommendations on siting laws presented to CMP Regional Task Force, 11/01; Technical assistance provided to Green Bay, Kewaunee, Oconto, and other communities throughout project period.

II. Grant Year: 1979-1980

A. Federal funds allocated to Wisconsin: \$82,283.00

B. Federal C.E.I.P. Funds obligated by Wisconsin: \$80,000.00

C. Projects:

1. Economic and environmental impact study of a Refuse-Derived Fuel System for a new coal-fired power plant (Edgewater V) in Sheboygan County.
 - a. Recipient: Sheboygan County Planning Department, Sheboygan.
 - b. Project Cost:
 - 1) Federal: \$40,000.00
 - 2) Local: \$10,000.00
 - 3) Total: \$50,000.00
 - c. Purpose: To provide Sheboygan County with the economic and environmental impact information necessary to determine whether the county should commit itself to the construction and/or operation of a refused-derived fuel system.
 - d. Products: A written report.
 - e. Status: Final report received November 5, 1980.

2. Impact Assessment of a Solar and Wind Energy System for Washington Island, Door County.
 - a. Recipient: Town of Washington Island
 - b. Project Cost:
 - 1) Federal: \$40,000.00
 - 2) Local: \$10,000.00
 - 3) Total: \$50,000.00
 - c. Purpose: To assess the economic, environmental, and social impacts of an intergrated wind and solar energy system for Washington Island. The project is to be carried out in cooperation with the State Energy Office, and coordinated with a Community Energy Conservation Study (\$32,500.00) funded through the State Energy Conservation Plan.
 - d. Status: Preliminary report on Community Energy Conservation Study received November 3, 1980. Preliminary reports on wind and solar data collection and environmental impacts expected by December 31, 1980. Project has been extended for an additional year to continue wind and solar data collection, and expand scope of impact assessment.

III. Grant Year: 1980-1981

A. Federal C.E.I.P. Funds Allocated to Wisconsin: \$253,000.00

B. Federal C.E.I.P. Funds obligated by Wisconsin: \$243,800.00

C. Projects:

1. Coastal Energy Impact Staff and Administration:

a. Recipient: Office of Coastal Management, Wisconsin Department of Administration.

b. Project Cost:

1) Federal: \$ 9,600.00

2) Local: \$ 3,100.00

3) Total: \$12,700.00

c. Purpose: Administer Section 308 funds and provide halftime energy facilities analyst for the Wisconsin Coastal Management Program.

d. Products: Annual facilities inventory update and grant application for Section 308 funds and special analyses and reports as required by Wisconsin Coastal Management Program.

e. Status: In progress.

2. Planning for Consequences of Coastal Energy Facilities

a. Recipient: City of Superior.

b. Project Cost:

1) Federal: \$28,000.00 (Section 308 (c)(1): \$ 8,650.00
Section 308 (d)(4): \$19,350.00)

2) Local: \$ 7,000.00

3) Total: \$35,000.00

c. Purpose: To assess and manage impacts resulting from expanded coal transshipment, natural gas pipeline construction, and the construction and operation of alcohol fuel production facilities.

d. Products: Written report detailing energy facilities siting plans, anticipated impacts, management options, and policy recommendations.

- e. Status: In progress.
3. Coastal Energy Impacts - Technical assistance.
- a. Recipient: Bay Lake Regional Planning Commission, Green Bay.
 - b. Project Cost:
 - 1) Federal: \$22,000.00
 - 2) Local: \$ 5,500.00
 - 3) Total: \$27,500.00
 - c. Purpose: To provide technical assistance to local communities in Brown, Door, Kewaunee and Oconto Counties impacted by energy facilities and activities.
 - d. Products: Written site-specific analyses of local communities anticipating impacts from the construction and operation of coal docks, power plants and other energy facilities. Written reports on alternative energy applications at coastal state parks and industrial plants. On-going technical assistance to be provided to these communities.
 - e. Status: In progress.
4. Waterfront Recreation Plan for Kewanee Harbor
- a. Recipient: City of Kewanee
 - b. Project Cost:
 - 1) Federal: \$10,000.00
 - 2) Local: \$ 2,500.00
 - 3) Total: \$12,500.00
 - c. Purpose: To assess the impact of a proposed coal transshipment facility on recreational use of Kewaunee Harbor.
 - d. Products: A written report.
 - e. Status: In progress.
5. Impact Assessment of Solar and Wind Energy System for Washington Island, Door County (Second Year Extension).
- a. Recipient: Town of Washington Island.

- b. Project Cost:
 - 1) Federal: \$45,000.00
 - 2) Local: \$11,250.00
 - 3) Total: \$56,250.00
 - c. Purpose: To expand data collection and impact assessment begun during first year of project.
 - d. Products: Written report.
 - e. Status: Contracting.
6. Alternative Energy System for Nature Center Building.
- a. Recipient: Bay Beach Wildlife Sanctuary, Green Bay.
 - b. Project Cost:
 - 1) Federal: \$ 4,200.00
 - 2) Local: \$ 1,968.00
 - 3) Total: \$ 6,168.00
 - c. Purpose: To investigate environmentally acceptable alternative energy systems for installation on a new nature center building.
 - d. Products: A written report containing specific engineering criteria on wind, solar and other alternative energy systems.
 - e. Status: In progress.
7. Replacement and Improvement of Recreational Resources in the Superior Harbor Area.
- a. Recipient: City of Superior.
 - b. Project Cost:
 - 1) Federal: \$ 80,000.00
 - 2) Local: \$ 20,000.00
 - 3) Total: \$100,000.00
 - c. Purpose: To replace and improve water related recreational resources impacted by existing and proposed transportation and storage of coal and oil.

d. Products: Construction of two (2) boat launching facilities (ramps, piers, and parking facilities); construction of a floating fishing pier; and construction of a shoreline fishing pier with special provisions for wheelchair access.

e. Status: Contracting.

8. Kewanee Harbor Waterfront Recreation Development

a. Recipient: City of Kewanee

b. Project Cost:

1) Federal: \$45,000.00

2) Local: \$11,250.00

3) Total: \$56,250.00

c. Purpose: To mitigate anticipated impacts of a proposed major coal transshipment facility on recreational resources.

d. Products: Upgrading of existing city owned park areas; city acquisition of a parcel of land which was formally a coal dock; and installation of timber bumpers and mooring rings on a city-owned dock wall.

e. Status: Contracting.

WISCONSIN

The strategy received from Wisconsin was excellent and very informative. It provided an excellent overview of facilities and impacts. However, in the future, we hope to get a better understanding of the direct link between facilities/activities, specific impacts, mitigation projects (pp. 15-17) priorities and budgets as in a capital improvement program.

While the state described its strategy for using CEIP assistance, it is important to clarify the state's strategy without CEIP assistance. This is the strategy which existing controls should be trying to implement. (Note: The gap between the impacts and what the state can mitigate defines the need for Federal CEIP assistance.) We suggest that the strategy without CEIP assistance be inserted between Section III and III-A. Perhaps this strategy should include items 2,a-d on pages 13-14. Also, please clarify if mitigation efforts are linked to statewide economic development and other policies and plans?

Also, while the state provided an excellent overview of mitigation measures, two questions were: Is establishing a comprehensive process to mitigate other types of energy facility/activity impacts a priority (p. 8)? Is improving the shared Utility Revenue fund (p. 10) to mitigate impacts a priority and part of the strategy?

The characterization of the state's strategy with CEIP assistance was excellent. However, if possible, we would appreciate your prioritizing the projects listed on pages 15-17.

WISCONSIN

Regarding your strategy we noted the following:

1. Excellent overview of facilities and impacts. Hope in future to get a better understanding of direct link between facilities/activities, specific impacts, mitigation projects (pp. 15 - 17) priorities and budgets. (See Format for suggestion).

2. Suggest characterizing the state's strategy without CEIP assistance between III and IIIA. Perhaps this should include item 2.a - d on pages 13 - 14.

Questions: Do energy projects link to state-wide economic development and other policies and plans? Also should it be clarified as to how the state/local mitigation measures relate to this strategy.

3. Excellent overview of mitigation measures.

Issue: Is establishing a comprehensive process to mitigate other types of energy facility/activity impacts a priority? (p. 8) Is improving the shared Utility Revenue fund (p. 10) to mitigate impacts a priority and part of the strategy?

4. Excellent characterization of strategy with CEIP assistance. Does the strategy and mitigation efforts link to other statewide economic development or other policies and plans?

5. Suggest prioritizing projects pages 15 - 17.



CZ/IP

November 21, 1980

Allen H. Miller
Program Manager
Coastal Management Program
Room B-130
1 West Wilson Street
Madison, Wisconsin 53702

Dear Mr. ^{al} Miller:

Thank you for sending us your draft of the Wisconsin Coastal Energy Impact Mitigation Strategy. In general, the nationwide response to my memo of July 7, 1980 was most informative and will be extremely important in justifying CEIP budget requests, preparing for Congressional oversight hearings, speeding the review of specific projects, and evaluating state CEIP activity. Similarly, we hope that the strategy will help you devise the direction you want to give to your state's CEIP activities.

With respect to the four areas of interest in the July 7 memorandum, our overall findings are as follows:

1. States provided a good general overview of energy facilities and coastal energy activities. In some cases, however, it was difficult to determine if the energy facility/activity was new or expanding.
2. States provided a good aggregate description of energy activity impacts. However, in many cases it was difficult to relate impacts to specific facilities identified for CEIP assistance.
3. States generally need to clarify their existing mitigation process, i.e., what the state is doing now and how it is working. Obviously, the state CZM program should play a major role here.
4. States generally did not identify priorities for types of projects; this is understandable given the short deadline for response. We would appreciate your identifying priorities, nonetheless. The strategy should become a mitigation mechanism for your State; project priorities will help a State CEIP withstand pressures to meet immediate political needs rather than long term energy mitigation objectives.

With respect to your specific submission, we have provided detailed comments in Attachment No. 1.



10TH ANNIVERSARY 1970-1980

National Oceanic and Atmospheric Administration

A young agency with a historic
tradition of service to the Nation

Given these general findings and the specific comments on your submission, we would like to suggest the following two steps to help us with budget issues and Congressional oversight:

1. To help us prepare CEIP's Fiscal Year 1982 and Fiscal Year 1983 budget requests, please reflect your budget estimates on the attached form. If you can estimate needs for FY-84, 85, and 86, please do so. One form should be filled out for each year. This will establish some consistency between state budget information. Because of the likelihood of changes by the new Administration in the Fiscal Year 1982 Budget and the relationship of out year projections to the FY-82 figure, we would appreciate receiving this information by February 6, 1981. In putting this information together, note that the Section 308(d)(4) environmental/recreational loss mitigation grant program was eliminated by the Coastal Zone Management Improvement Act of 1980 and replaced with Section 308(c)(3). Therefore, please delete prior 308(d)(4) estimates and include new Section 308(c)(3) estimates. As you know this section authorizes grants to "prevent, reduce or ameliorate any avoidable loss in the state's coastal zone of any valuable environmental or recreational resource, if such loss results from the transportation, transfer or storage of coal or from alternative ocean energy activities".

2. To help us prepare for the upcoming Congressional oversight hearings, we hope you will put your strategy in final form by responding as soon as possible to the general and specific findings. Many of you are beginning to exceed our 5-10 page initial guideline. While brevity is still preferred, we understand that some of you will need more pages to provide us with all the information we need.

We would like to receive some 8-1/2 x 11 inch or smaller graphics and maps to show the location of:

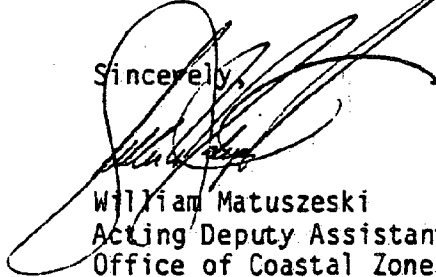
- energy facilities/activities - existing, planned, probable or possible with date
- areas of concern - environmental resources, recreational resources
- population areas affected
- other impacts - transportation routes, oil spills, etc.

Also, we are requesting that every state add a one or more page statement describing the results, benefits and value of prior CEIP assistance. Photographs/slides and specific accomplishments which directly link energy impacts with CEIP projects will be most helpful.

Thank you again for your efforts. We look forward to receiving your final strategies and associated materials by March 15, 1981 if at all possible.

We are confident that with your help we can build a strong basis for continued and improved support of CEIP in Congress and in the new Administration. If you have any questions, please contact me (202)634-1672, or your CEIP Area Manager (202)254-8000.

Sincerely,



William Matuszeski
Acting Deputy Assistant Administrator
Office of Coastal Zone Management

WISCONSIN

The strategy received from Wisconsin was very informative. It provided an excellent overview of facilities and impacts. However, in the future, we hope to get a better understanding of the direct link between facilities/activities, specific impacts, mitigation projects (pp. 15-17) priorities and budgets.

While you described the State strategy for using CEIP assistance, it is important to clarify the State's strategy without CEIP assistance, i.e., the strategy which existing controls should be trying to implement. (Note: The gap between the impacts and what the State can mitigate defines the need for Federal CEIP assistance.) We suggest that the strategy without CEIP assistance be inserted between Section III and III-A. Perhaps this strategy should include items 2.a-d on pages 13-14. Also, please clarify if mitigation efforts are linked to statewide economic development and other policies and plans?

We have two questions regarding your mitigation measures: Is establishing a comprehensive process to mitigate other types of energy facility/activity impacts a priority, (p.8)? Is improving the shared Utility Revenue fund to mitigate impacts a priority and part of the strategy, (p. 10)?

CEIP FUND REQUIREMENTS FOR FY 1982
(Dollars in thousands)

STATE: Wisconsin

ACTIVITY	GRANT PROGRAMS				LOANS	TOTAL
	300 (c)(1)	300 (c)(2)	300 (c)(3)	300(b)		
Activity Center Inspection	General Planning	ACS Participation	DIW/RIC Loss Mitigation	General Planning	Public Facilities	
Oil and Gas						
Oil and Gas Transport-Carbon, Storage and Transfer (TTS)						
Coal TTS	110		1,250		7,000	8,360
Nuclear Alternative Energy	66		165			231
Electric Generation and other Regulated Energy Facilities not included above	150					150
Program Administration	39			1/		39
TOTAL	365		1,415		7,000	8,780

1/ This Section may be used for program administration if Section 300(c)(1) funds are not available.

CEIP FUND REQUIREMENTS FOR FY 1993

(Dollars in thousands)

STATE: Wisconsin

ACTIVITY	GRANT PROGRAMS						TOTAL
	300 (c)(1)	300 (c)(7) DES Participation	300 (c)(9) DIP/RIE Loss Mitigation	General Planning	300(b) DIP/RIE Loss Mitigation	Public Facilities	
DES O&E and Cap							
O&E and Cap Transpor- tation, Storage and Transfer (TST)							
Cost TST	121		1,500			7,000	8,621
Open Alternative Energy	73		182				255
Electric Generation and other Capital Energy Facilities not included above	83						83
Program Administration	42						42
TOTAL	319		1,682			7,000	9,001

1/ This Section may be used for program administration if Section 300(c)(11) funds are not available.

CEIT FUND REQUIREMENTS FOR FY 1987
 (Values in Thousands)

STATE: Wisconsin

ACTIVITY	GRANT PROGRAMS				TOTAL
	300 (c)(1)	300 (c)(2)	300 (c)(3)	300 (c)(4)	
Activity Counseling Institute				Public Facilities	
USE: Oil and Gas					
Oil and Gas Transportation, Storage and Transfer (TST)					
Cost TIS	133		1,650		1,783
Other Alternative Energy	80		200		280
Electric Generation and other Federal Energy Facilities not included above	71				91
System Administration	47			IV	47
TOTAL	351		1,850		2,201

IV - this Section may be used for program administration if Section 300(c)(1) funds are not available.

CEIP FUND REQUIREMENTS FOR FY 1995
 (Dollars in Thousands)

STATE: Wisconsin

ACTIVITY	GRANT PROGRAMS					TOTAL
	300 (c)(1)	300 (c)(2)	300 (c)(3)	300(b)	300(c)(4)	
Activity Category	General Planning	PCS Participation	EM/RMX Long Mitigation	General Planning	Public Facilities	
PCS Off and On						
Off and On Transition- ation, Moving and Transfer (TMS)						
Cost TMS	146		1,815			1,961
Open Alternative Energy	88		220			308
Electric Generating and other fossil fueled facilities not included above	150					150
Program Administration	51			1		51
TOTAL	435		2,035			2,470

1/ This Section may be used for program administration if Section 300(c)(1) funds are not available.



State of Wisconsin

COASTAL MANAGEMENT COUNCIL

Original B. Matuszeski
cc: E. Miller
J. Mylroie
H. K. K. K.
R. Sussman
E. Green



Lee Sherman Dreyfus
Governor

c/o Room B-130
1 West Wilson Street
Madison, Wisconsin 53702

October 6, 1980

TO: Bill Matuszeski, Acting Deputy
Assistant Administrator, OCZM

FROM: Al Miller, Program Manager
Wisconsin Office of Coastal Management

SUBJECT: Wisconsin CMP Energy Strategies; Your Memo 7/7/80

Attached is a draft paper describing Wisconsin's energy impact strategy. As you are aware, the energy dimension of Coastal Management is well integrated in Wisconsin's program. We do not consider energy as a separate entity in our program. Substantively it is one of eight issues of focus in our program. Only administratively does it differ in that funding is under a different section of the CZMA and Federal administrative procedures vary somewhat.

The attached paper describes:

- (1) anticipated facility development and activities
- (2) potential impacts
- (3) existing control and mitigation measures
- (4) a rough estimate of assistance that could be adequately used.

The efforts of OCZM to coordinate 306 and 308 activities is an important one. We think you'll find the attached paper responds to your inquiries and we look forward to working with the CEIP staff in this effort.

AM:ff

cc: George Evenson, Chrm.
Coastal Management Council

RECEIVED
OCT 11 1980
MADISON, WISCONSIN

DRAFT

WISCONSIN COASTAL ENERGY IMPACT STRATEGY

October, 1980

I. Coastal Energy Facilities and Activities

Wisconsin coastal counties are currently most impacted by, and expect to be most impacted in the near future by, electric generating stations and transmission lines, coal transportation and storage facilities, petroleum processing and storage facilities, and natural gas transportation and storage facilities. Wisconsin also expects potentially significant impacts from new coastal alternative energy facilities such as alcohol fuel production plants, wood-fired power plants, and both central and dispersed wind energy conversion systems.

A. Coastal Coal-Fired Power Plants. Two major new coal-fired power plants, with a total capacity of 1600 MW, are under construction at Pleasant Prairie (Kenosha County) and Edgewater (Sheboygan County) and a 600 MW unit is being planned for the Town of Belgium (Ozaukee County). Three locations in Brown, Door, and Oconto County are currently under consideration as sites for two 400 MW units which will be constructed during the mid-1980s. The Haven Site (Sheboygan County), originally proposed for a now-cancelled nuclear unit, will also be considered for a coal-fired plant.

B. Radioactive Waste Disposal/Storage Facilities at Existing Coastal Nuclear Power Plants. Spent fuel storage pools have recently been expanded at the Point Beach and Kewaunee nuclear power plants. A major repair operation at Point Beach, the removal of defective steam generators, will require construction of permanent disposal

facilities for high-level radioactive waste. On-site disposal facilities is a prime consideration at the present time.

C. Coastal Coal Transportation and Storage Facilities. Coal transportation is a major activity in the Ports of Ashland, Green Bay, Manitowoc, Milwaukee, Port Washington, Sheboygan, and Superior. Wisconsin Great Lakes ports currently receive more than 3 and 1/2 million tons of eastern coal per year and ship out 4 million tons of western coal per year. Western coal shipments from the existing Superior Midwest Energy Terminal are expected to at least double in the next five years, and new transshipment facilities are being considered for Green Bay, Kewaunee and Superior. Western coal shipments from Wisconsin could reach 10 to 20 million tons per year by 1985. Eastern coal shipments, essential for Wisconsin's utilities and paper mills, are anticipated to double by 1990. Green Bay will be most effected by increased eastern coal receipts. Increased shipments of both eastern and western coal will increase demand for coal carrying vessels. A major facility for the construction and repair of coal vessels (and oil tankers) is the Bay Shipyard in Sturgeon Bay, Wisconsin. This facility has constructed 15 self unloading bulk cargo carriers, suitable for carrying coal or iron ore or both, since 1970, and anticipates increased demand for such ships in the near future. The yard currently services approximately 12 ships per year. Largely as a result of work on coal ships and oil tankers, employment at Bay Shipyard has increased from 1,100 workers in 1976 to its current level of more than 1,900 workers.

D. Coastal Natural Gas and Petroleum Transportation and Storage Facilities. All 15 of Wisconsin's coastal counties are currently transversed by natural gas pipelines. A major natural gas pipeline is scheduled for construction across the Lake Superior coastal counties in 1981 and 1982. Douglas County is currently under consideration as a site for a natural gas processing plant. Wisconsin Natural Gas Company is currently expanding its liquified natural gas peak shaving facilities at Oak Creek in Milwaukee County. A major oil company is planning a reorganization and expansion of its terminal facilities at Jones Island in Milwaukee harbour. Coastal locations will also be impacted by oil storage facilities associated with new coal-fired power plants, since these plants rely upon fuel oil for boiler start-ups and flame stabilization.

E. Coastal Biomass Energy Conversion Facilities. Wisconsin has abundant biomass resources, and the utilization of these resources will involve the construction of major new facilities in coastal counties. Major alcohol fuel production facilities are currently proposed for the Ports of Green Bay, Milwaukee, and Superior. These facilities will convert whole grain, grain dust, and grain and seed spoilage into alcohol, which will be mixed with unleaded gasoline to produce gasohol. An existing oil-and coal-fired power plant in Ashland has converted two of its steam boilers to a

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mixture of wood waste and western coal. Additional conversions to wood waste are expected, and related facilities such as wood densification and/or pelletization facilities are expected to be constructed in the Lake Superior coastal counties.

F. Wind Energy Conversion Systems. There is great interest in both large and small scale wind machines, sited individually or in so-called "wind farms", throughout Wisconsin's coastal areas. Individual residences and businesses have already installed or are planning to install small scale wind energy systems. An electric utility in northern Wisconsin is collecting wind speed data on the Bayfield peninsula, in order to assess the feasibility of installing large scale wind generators there. The Eastern Wisconsin utilities have commissioned a study of central wind generating stations employing two MW or larger wind turbines. A consultant hired by the Wisconsin Public Service Commission has developed a proposal for the installation of 30,000 small-scale (40 KW) wind machines at dispersed locations throughout the eastern part of the state to displace the generation requirements of one 400 MW coal fired power plant.

II. Anticipated Coastal Energy Impacts

The economic, environmental, and social impacts of traditional facilities such as power plants and coal docks are relatively well understood. Great Lakes coastal energy facilities impacts are usually most serious in the areas of environmental and recreational loss, transportation impacts, and construction impacts. Nonetheless, the

operating impacts of these facilities can be substantial. The impacts of newer energy systems such as alcohol fuel production facilities, large wood-fired utility boilers, and wind energy conversion systems are not yet well understood.

A. Environmental and Recreational Losses. The construction and operation of coal transportation and storage facilities, power plants, and oil and natural gas transportation and storage facilities have direct and immediate impacts on the uses of coastal lands. Impacts from existing facilities are as important as the potential impacts of new and expanded facilities and activities. Construction and operation of these facilities preempts large areas of land which could be used for recreation or natural areas. The visual and noise pollution from these facilities affect not only the immediate site but the use of land and water areas adjacent to these facilities as well. Increased harbor traffic by coal and oil vessels restricts recreational use of harbor areas for fishing, boating, swimming, and other activities. Oil spills, natural gas explosions, and runoff, leachates, and fugitive dust emissions from coal piles; pose significant risks to the environment.

B. Socio-Economic Impacts. While socio-economic impacts are generally not the greatest area of concern regarding new Great Lakes coastal energy facilities, some of these facilities do result in substantial local impacts. A good example is the increased production of coal ships and oil tankers in Sturgeon Bay. The influx of workers to this facility has a significant

impact upon the local housing market and upon the local government's ability to provide educational, health and emergency services. The construction of power plants, involving up to a thousand or more construction workers over a four to five year period can significantly impact coastal communities, even though the operation of these facilities may require less than 200 permanent new workers. Social disruption resulting from the displacement of residences and farms as well as community disruption by construction traffic, noise and dust are also serious concerns.

C. Transportation Impacts. Coal transportation and storage facilities may seriously disrupt existing traffic patterns and result in increased maintenance and repair requirements for existing transportation infrastructure. Unit train coal deliveries may result in significant delays at grade crossings for surface vehicle traffic, particularly emergency service vehicles. Commercial deliveries by truck may also be seriously affected. Delivery of coal by ship in areas where vehicle bridges must be lifted to allow vessel passage may seriously affect automobile and truck traffic as well. Increased truck traffic around coal docks may result in deterioration of roads and bridges. Increased deliveries by ship will result in increased dredging and dredge spoil disposal requirements, due to shoaling resulting from bow thrusters of modern ships.

D. Air and Water Quality Impacts. Coal fired power plants, coal docks, and petroleum facilities may result in degradation of air

and water quality because of increased air borne emissions of sulfur dioxide, nitrogen oxides, hydrocarbons, and particulates. Water quality may be impacted by construction period dust and runoff, runoff and leachates from coal piles, oil spills, and thermal and chemical pollution resulting from cooling system discharges.

- E. Biomass and Wind Energy Systems. While the impacts of large scale alternative energy systems are not yet fully understood, there are several areas which clearly require further study. More information is required about the water quality impacts, particularly the water consumption requirements, for alcohol fuel production facilities. More information is need about increased particulate emissions from wood-fired utility boilers. More information is also needed about the impacts of wind energy conversion systems, particularly the possibility of interference with television and microwave transmission, negative impacts on wildlife (particularly migratory birds and birds of prey), and considerable land use requirements. The study prepared for the Wisconsin Public Service Commission on dispersed siting found that installation of 30,000 wind machines (rated at 40 KW each) might require 100 square miles of land.

III. Impact Mitigation Strategy

- A. State and Local Control and Mitigation Measures. Wisconsin has one of the most comprehensive power plant siting processes in the

country. The Power Plant Siting Law, enacted in 1975, requires electric utilities to file system-wide advance construction plans with the Wisconsin Public Service Commission (PSC) every two years. A proposed power plant site and/or transmission line route must be included in an approved advance plan before the utility can apply for a site specific Certificate of Public Convenience and Necessity (CPCN). A CPCN is granted only after an Environmental Impact State (EIS) has been prepared in accordance with the Wisconsin Environmental Policy Act (WEPA) and all necessary air and water quality permits have been granted by the Wisconsin Department of Natural Resources (DNR). Public hearings in the affected localities are an integral part of the siting process. The siting process requires the utility to establish the need for power from a particular facility and to prepare a comparative impact assessment of alternative sites and technologies.

> Wisconsin does not have a comprehensive siting process for other types of energy facilities. Construction of a coal dock, petroleum tank farm, pipeline, or other facility usually requires permit(s) from one or more state agency. DNR permits, for example, are required for placing structures in navigable waters, dredging, discharging air and/or water pollutants, and disposing of solid wastes. The Department of Industry, Labor and Human Relations must approve construction of all petroleum storage tanks having an individual capacity of 8,000 gallons or more. Construction of a natural gas pipeline or peak-sharing plant requires a Certificate of Authority from the PSC.

Under WEPA, the state agency granting a permit or permits must determine the environmental significance of the proposed action. If the agency determines that an action is "clearly major and significant," then an EIS is required. The EIS must address social, cultural, and economic impacts as well as physical, chemical, and biological consequences.

In addition to these controls at the state level, energy facilities siting must comply with county shoreline zoning ordinances. Municipalities may also exercise local zoning authority over facilities which affect public health and safety.

The intent of these state and local regulations is to ensure that energy facilities are constructed and operated in compliance with statutory or administrative standards. They are therefore most appropriately characterized as control measures, rather than mitigation measures. Energy developers are not legally required to mitigate negative impacts beyond meeting minimal state standards. In response to pressure from affected parties (such as local citizens, environmental groups, and state and local agencies), a state or local authority may attach condition(s) to a permit which require(s) an energy developer to mitigate specific impacts, but conditional permits are issued on a case by case basis, and are subject to legal challenge by the energy developer. The Wisconsin regulatory processes thus provide opportunities for impact mitigation through conditional use permits, but do not mandate mitigation except in narrow instances

(such as air quality impacts) and then only to the extent necessary to meet established standards.

B. State, Local or Federal (Non-CEIP) Financial Assistance For Impact

Mitigation. Municipalities and counties impacted by major new power plants receive payments from the Shared Utility Revenue fund in lieu of property taxes. The complicated distribution formula was devised in response to the development of "tax islands" around major nuclear facilities in the early 1970's. Under the current statutes, a town which is the site of a new 400 MW coal-fired plant would receive a maximum payment of \$300,000 per year, while a county could receive a maximum of \$600,000 per year.

Municipalities and counties impacted by coal and crude oil transportation receive payments from the state occupational tax of \$0.05 per ton on bituminous coal delivered to brokerages and \$0.05 per ton on crude oil delivered to refineries. Revenues so collected are divided as follows: 10% to the state, 20% to the county, and 70% to the town, city or village. The City of Superior, the state's largest local recipient of occupational taxes on coal, will receive approximately \$150,000 for 1979. Continued collection of the occupational tax is uncertain, however, pending a law suit filed by the Burlington Northern Railroad in January, 1980.

While shared utility revenue and occupational tax payments provide an important source of revenue for communities impacted by power

plants and coal docks, these payments are of limited significance as a means of mitigating impacts. First, the level of payments is determined by an arbitrary formula which has no relation to actual impact of a particular facility in a particular community. The level of funding that any community may receive at a future date is unpredictable. The utility shared revenue distribution formula has been altered by legislation at least five times in the past ten years and the constitutionality of the occupational tax is now under question. Moreover, the timing of these payments to a community does not necessarily reflect the timing of needed increases in public services. Community need may be greatest during the construction period, while payments are greatest during the operating period. Finally, there is no legal requirement that the revenues shared with affected localities must actually be applied to impact mitigation.

No Wisconsin coastal community has received non-CEIP Federal financial assistance for impact mitigation. The City of Superior is not eligible for federal Energy Impacted Area Development Assistance. Sturgeon Bay may be eligible for EIADA funds. The eligibility requirement for EIADA, which is based on the percentage of new workers employed in energy industries rather than the number of new workers employed, means that few if any Wisconsin coastal communities will benefit from this program. Pending federal legislation, the Federal Public Transportation Assistance Act, may provide financial assistance for improved

maintenance of rail grade crossings required as a result of coal transportation.

- C. Wisconsin Strategy for Using CEIP Assistance. In Wisconsin, CEIP is totally integrated with the Coastal Management Program and is governed by the Wisconsin Coastal Management Council. Coastal energy impacts is one of eight priority issue areas identified by the Coastal Management Council. Other issue areas are: rural shorelands; toxic and hazardous substances; erosion and flood hazards; natural areas, parks and forests, fisheries; harbors; public access; and urban waterfronts. The Council recognizes the special nature of coastal energy impacts as an issue area which intersects with all other areas.

1. Characterization of Strategy. The timing of the state's mitigation strategy is both reactive and anticipatory. Wisconsin must react to environmental and recreational losses and transportation impacts of existing coal and petroleum transshipment and storage facilities. The state must also anticipate future impacts resulting from the construction and operation of new facilities and the expansion of existing facilities. State strategy is primarily oriented to prevent environmental and recreational losses, mitigate construction period impacts, mitigate transportation disruption, maximize economic benefits and offset negative environmental impacts. Expansion of public facilities will be a relatively minor part of the overall Wisconsin strategy, but may be significant in a few

communities such as Sturgeon Bay and Superior. The Wisconsin mitigation strategy calls both for a strong direct state role to be carried out by the Office of Coastal Management, but also calls for a major role by local governments particularly in the Northwest and the Bay-Lake Regions. The Wisconsin Program operates on the principle of a state/local partnership. Wisconsin's mitigation strategy employs a number of methods to achieve these aims. One will be to improve planning for new energy facilities at the state and local levels. Another method will be to provide the background research necessary to affect changes in the existing regulatory processes. Finally the program will offer financial assistance to local communities to improve their participation in regulatory proceedings and to carry out projects implementing mitigation strategies.

2. Goals and Objectives. The Wisconsin Coastal Management Council has not formally adopted five year goals for CEIP. The Council has, however, established the following objectives which are the basis of the Wisconsin Coastal Management Program strategy for mitigating the negative impacts of new and expanded coastal energy facilities and activities. These objectives are:

- a. Increased Public Awareness. WCMP should increase public awareness of the coastal role in supplying Wisconsin's energy requirements and the economic,

environmental and social impacts of coastal energy facilities. This is a medium priority objective.

- b. Improved Local Government Management Capability. WCMP should improve local government capability to assess and manage impacts resulting from new or expanded coastal energy facilities. This is a high priority objective.
- c. Improved Local Government Regulatory Capability. WCMP should improve local government capability to participate in regulatory processes governing the siting of new facilities in coastal areas. This is a medium priority objective.
- d. Encouragement of Alternative Energy Systems. WCMP should encourage the development of environmentally acceptable alternative energy systems or technologies which are specifically suited to coastal locations (wind, solar, biomass, wave, coastal refuse derived fuel, etc.). This is a high priority objective.

During the next two grant years (October, 1981 - October, 1983) Wisconsin plans to use its FY 1981 and 1982 CEIP funds to address the following specific energy impact mitigation objectives:

Coal Transportation and Storage:

Impact of rail-to-vessel and vessel-to-rail facilities and coal vessel movements on recreational use of harbors.

Impact of unit train deliveries on truck and automobile traffic.

Impact of coal handling on audible noise levels.

Impact of coal vessel traffic on dredging and dredge spoil disposal requirements.

Impact of changes in occupational tax on coal shipments.

Air and water quality impacts of existing coal storage facilities.

Impact of coal ship construction on need for public services.

Electric Generating Stations:

Offset negative impacts of coal-fired power plants through Refuse-Derived Fuel use, district heating, and recreational use of buffer zones.

Impact of expanded spent fuel storage and radioactive waste disposal facilities at nuclear power plants.

Disposal options for Flue-Gas Desulphurization (scrubber) sludge from coal-fired power plants.

Air and water quality impacts of wood-fired power plants.

Siting criteria and regulatory guidelines for wind turbines.

Impact of large wind turbines and wind farms on wildlife.

Impact of recreational fishing near cooling system outlets (increased PCB concentrations).

Petroleum Transportation and Storage Facilities:

Impact of oil spills.

Impact of changes in occupational tax on oil shipments.

Impact of decommissioning terminals and storage tanks.

Dredging requirements for terminals in small ports.

Alcohol Fuel Production Facilities:

Water quality impacts of alcohol fuel production.

Siting criteria and regulatory guidelines for alcohol fuel production facilities.

Natural Gas Pipelines and Processing Facilities:

Construction period impacts.

3. Project Selection Criteria. Section 308 projects are selected through the same process employed for the Section

306 projects. The review process consists of three stages. First, an administrative analysis by the Office of Coastal Management determines whether or not the proposal is fundable and fits the general WCMP criteria. Second, relevancy analysis by the CEIP coordinator determines eligibility for 308(c)(1) or 308(d)(4) funding and whether the project addresses one of the four CEIP objectives established by the Coastal Management Council. Third, technical analysis by three or more outside experts determines the validity of the problem addressed and the methodology applied to the problem.

The relevancy analysis is based upon the approved intra-state allocation process, according to the following criteria:

- a. Coastal energy activity/facility determination.
- b. Size, population, and vulnerability of impacted area.
- c. Immediacy of need.
- d. Consistency with Wisconsin Coastal Management Program and other state policies.
- e. Compliance with federal regulations and guidelines.

- f. Ability of applicant to carry out proposed project.
- g. Availability of matching funds.
- h. Geographic distribution.
- i. Transferability of findings.
- j. Cost of project and availability of non-CEIP funds.

At the conclusion of the technical review, all proposals are ranked according to cumulative point scores awarded in each of the three review stages. The Coastal Management Program Manager prepares, and submits, a draft budget based on the ranked list of project proposals. Final project selection is made by the Coastal Management Council in accordance with the state's approved process.

4. Project Selection Criteria Applicability. Project selection criteria are limited to state coastal management policies. All prospective project applicants are notified of selection criteria in the annual guidelines for applications for assistance. The applicant may appeal to the Coastal Management Council.

IV. Estimated C.E.I.P. Assistance Required by Wisconsin

Estimated CEIP Assistance required by Wisconsin is presented in Table

1. These dollar estimates are based on the following assumptions:

1. No CEIP loan funds will be available;
2. Inflation will average 10% per year over the next 5 fiscal years; and
3. If funding levels increase, administration will need to increase, with the CEIP coordinator position becoming a full time position, with necessary support.

A. Estimated CEIP Assistance Required By Project Types for FY 1981

AND 1982

1.	Wisconsin Office of Coastal Management	
	CEIP Administration, coordination, and technical assistance	
		\$ 73,500
2.	Planning Projects (By Local Governments and State Agencies)	
	Coal Transportation/Storage Impacts	\$ 210,000
	Electric Generating Facilities Impacts	\$ 225,000
	Other (Petroleum, Natural Gas, Biomass, etc.) Impacts	\$ 126,000
3.	Environmental Recreational Loss	
	Projects (By Local Governments)	\$
	Coal Transportation/Storage	\$2,250,000
	Other (Petroleum, Natural Gas)	\$ 315,000
4.	Total	\$3,199,500

ESTIMATED C.E.I.P. ASSISTANCE REQUIRED BY WISCONSIN
(Thousands of Dollars)

TABLE 1

	FY 1981	FY 1982	FY 1983	FY 1984	FY 1985	FY 1981-1985
308(c)(1) Planning Assistance						
OCM Administration/Planning	35.0	38.5	42.4	46.6	51.3	
Local/Agency Projects:						
Coal Transportation/Storage	100.0	110.0	121.0	133.1	146.4	
Electric Generating Facilities	75.0	150.0	82.5	90.8	150.0	
Other	<u>60.0</u>	<u>66.0</u>	<u>72.6</u>	<u>79.9</u>	<u>87.8</u>	
Subtotal	270.0	364.5	318.5	350.4	435.5	1,738.9
308(d)(4) E-R Loss Assistance						
Coal Transportation/Storage	1,000.0	1,250.0	1,500.0	1,650.0	1,815.0	
Other	<u>150.0</u>	<u>165.0</u>	<u>181.5</u>	<u>199.7</u>	<u>219.6</u>	
Subtotal	<u>1,150.0</u>	<u>1,415.0</u>	<u>1,681.5</u>	<u>1,849.7</u>	<u>2,034.6</u>	<u>8,130.8</u>
TOTAL	1,420.0	1,779.5	2,000.0	2,200.1	2,470.1	9,869.7
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