SH&E INC.
CONSULTANTS

DRAFT

PORT PLANNING DEVELOPMENT STUDY

PORT OF MILWAUKEE

AUGUST 1982

Simat, Helliesen & Eichner, Inc.
Boston • New York • Washington

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Submitted by

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Boston Washington, DC New York

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I. INTRODUCTION

The Port of Milwaukee has played an important role in both the economic development and the transportation network of the region and the state. In recent years, however, it has been faced with a number of circumstances that require immediate attention and comprehensive planning. Among these are:

- The continuing decline of liner service on the Great Lakes/ Seaway System has resulted in general cargoes shifting to other modes and routings. General cargo tonnage has declined by more than 50 percent since 1975, and it is doubtful that previous levels of general cargo traffic or liner service will ever be regained.

- The reorganization of the Milwaukee Road and the cessation of service by the Grand Trunk, coupled with the railroad deregulation giving rail carriers new operating freedom, have placed the port in a new environment with respect to both competitive and complementary services.

- The discontinuance of the Chessie Ferry service and the unlikelihood of state subsidy for future ferry services, have left the port without the potential to recapture the lost cargoes.

- The relocation of oil storage areas from Jones Island has opened up significant land parcels in the center of the port's operating area.

- The immediate availability of additional waterfront lands for potential port-related development has the Port Commission faced with the decision of whether there is a current or future need to ensure such parcels are acquired or reserved for port use.

- The changing competitive environment and the U.S. trend in recent years toward regional and/or autonomous port authorities raises the question of whether the current administrative and organizational structure of the Port of Milwaukee can adequately address the needs of the port and its users, as well as the region.

Simat, Helliesen & Eichner, Inc. (SH&E) was retained by the Board of Harbor Commissioners to thoroughly analyze these circumstances and then make recommendations on the direction the port should take in developing its facilities and services to serve the transportation needs of the region and its industries.

The research effort included the following activities, the findings of which are presented in this report:

- Examination of existing and potential port properties;
- Analysis of past and future cargo demands;
- Review of previous studies of various cargoes and facilities;
- Survey of industry, port users and others concerned with the future of the port;
- Evaluation of existing and alternative port agency structures; and
- Formulation of development options and recommendations on port planning over the next ten years.

2. EXISTING AND POTENTIAL PORT PROPERTIES/USES

The Port of Milwaukee is in a period of transition in terms of the acquisition, disposition, and utilization of properties under the control of the Board of Harbor Commissioners. This chapter addresses the status of leased property, the Greenfield and P.V. Atlas sites, the C&NW railbridge 1551, and the energy transition.

2.A BACKGROUND

The transition in property use was initiated by the acquisition of additional land by the Milwaukee Metropolitan Sewerage District (MMSD) as part of an expansion of the city's sewage disposal plant. The MMSD acquired land adjacent to the East Berth terminal and took over additional parcels of land on Jones Island formerly occupied by Stearns Marine Terminals and American Oil. In addition, liquid bulk transfer and storage facilities became obsolete because of a pipeline service started in 1962. As a result, Phillips, Texaco, and American allowed the leases on Jones Island to expire and abandoned their tank farms. The Phillips site was taken over by TANCO who uses or plans to use the tank facilities for caustic soda, agricultural fertilizers, and petroleum products. Marathon Oil has also given up its lease. Shell and Mobil may follow suit. Accordingly, the use of the liquid cargo pier has been reduced substantially. Ninety percent (90%) of the petroleum pier has been purged and converted to non-petroleum use. There are still some dedicated petroleum lines.

Private lands have also experienced a change in utilization because of the continuing decline in the city's economic base. As a result, there has been very little marine-related activity on the Milwaukee River and a continuing decrease in activity on the Menomonee River and Burnham Canal. Chessie System has ceased car ferry operations at its slip adjacent to the city heavy-lift dock and the Grand Trunk has abandoned its ferry operation upstream of the C&NW

railroad bridge on the Kinnickinnic River. There is still some active navigation on the Kinnickinnic River upstream to the Gillen Co. site with larger vessels serving the Medusa Cement Company on the south bank and Milwaukee Solvay Coke Company on the north bank.

During the past year, two waterfront land parcels have become available: the so-called Greenfield Avenue site, and the P.V. Atlas site. The Board of Harbor Commissioners has obtained the Greenfield site and has an option on the P.V. Atlas site.

2.B STATUS OF LEASED PROPERTY

The February 1982 summary of port lease agreements shows active leases with 27 companies or organizations. In total, the Board of Harbor Commissioners controls 411 acres of land in the waterfront area; these areas are shown in Figure 1.

Table 1 is a tabular summary of the active lease agreements currently in effect. As of February 12, 1982, the Board of Harbor Commissioners had 183.4 acres of land exclusive of rail right-of-way under active lease, or 44.5 percent of its total available land. Of the 183.4 acres, 100.4 acres, or approximately 55 percent, is income-producing. The remaining 83 acres, or 45 percent, is leased under $1.00 base rentals to Milwaukee World Festival, the U.S. Army, U.S. Coast Guard, and U.S. Navy. Therefore, of the total of 411 acres controlled by the city under the Board, only 100.4 acres, or approximately 24.4 percent, is income-producing.

Of the total 183.4 acres of leased land (this figure excludes railway right-of-way), the largest single leasehold is maintained by Milwaukee World Festival with 62.7 acres. The next largest leasehold is with Meehan Seaway Services Ltd., with 17.8 acres.

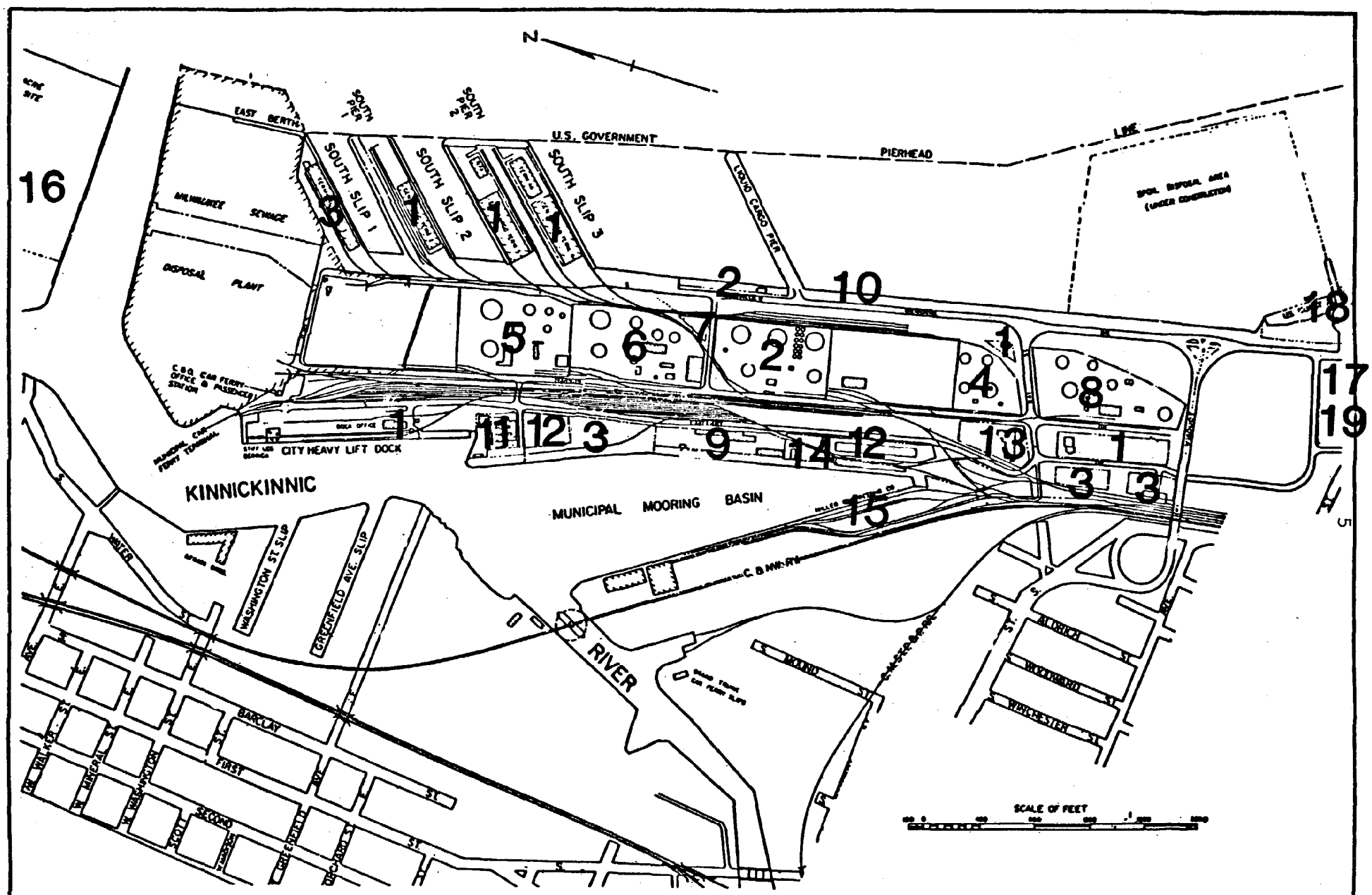


FIGURE 1: GUIDE TO EXISTING PORT PROPERTY LEASES

TABLE 1

TABULAR SUMMARY OF BOARD OF HARBOR COMMISSIONERS LEASES

	TENANT/Facility	Acreage	Lease Expiration	Base Rental (Annual)	Renewal Option	Brief Description of Site (Boundaries)
1	MEEHAN SEAWAY SERVICE LTD.					
	1. North Side, SO Pier 1	2.0	12/31/83	Part of Subtotal A, shown below.	Term is extended to 12/81/86 unless either party cancels term by written notice within timeframe under agreement.	Right of usage of dock, dock apron, roadways, railroad track contiguous to dock.
	2. General Cargo Terminal 2	1.1	12/31/83	"	"	1.1 acre terminal, right of usage of adjacent dock, dock apron, platform, roadways, auto parking areas, open storage, railroad tracks.
	3. General Cargo Terminal 3	1.7	12/31/83	"	"	1.7 acre terminal, usage at adjacent areas and facilities as depicted for Terminal 2 above.
	4. General Cargo Terminal 4	1.7	12/31/83	"	"	"
				Subtotal A - $160,000		
	5. City Heavy Lift Dock	2.3	12/31/83	$ 17,500	"	Use of North Gear Room and Lunchroom facilities in Dock Office Building.
	6. Container Terminal	4.7	12/31/83	Part of Subtotal B, shown below.	"	Storage area.
	7. Maintenance Facility and Back-up Container Storage	4.0	12/31/83	"	"	Back-up storage, including building.
				Subtotal B - $ 16,800		
	8. Hiring Hall	0.3	12/31/83	$ 13,125	"	Includes 2,100 sq. ft. building.
	TOTALS	17.8	12/31/83	$207,425		
2	THE JACOBUS COMPANY					
	Petroleum Products Terminal	9.9	12/31/82	$35,770	One five-year option: 1/1/83 through 12/31/87.	1700 S. Lincoln Memorial Drive.

N = NORTH HARBOR AREA

X = NOT SHOWN

TABLE 1 (Continued)

TABULAR SUMMARY OF BOARD OF HARBOR COMMISSIONERS LEASES

	TENANT/Facility	Acreage	Lease Expiration	Base Rental (Annual)	Renewal Option	Brief Description of Site (Boundaries)
3	DOMTAR, INC.					
	1. Bulk Terminal 1	1.8*	3/31/85	$25,000 for 7/17/78 - 5/31/84 $26,000 for 6/1/84 - 3/31/85	None	Includes $59,400 sq. ft. terminal building
	2. 1551 S. Carferry Drive	4.0	3/31/85	$20,400	None	Tennant-owned terminal.
	3. South of E. Bay St. and West of S. Carferry Dr.	1.1	3/31/85	$ 6,000	None	Bare ground lease, used for storage.
	4. 2225 S. Carferry Drive	1.2	Expired 5/31/81	$ 6,240	Month to month extension, pending negotiations of a permanent extension or new agreement.	Bare ground lease, used for storage.
	TOTALS	8.1		$57,640 for 7/17/78 - 5/31/84 $58,640 for 6/1/84 - 3/31/85		
X	STATE OF WISCONSIN Department of Natural Resources Bureau of Air Pollution and Solid Waste Control	N/A	8/31/82	$900 for 9/1/80 - 8/31/81 $1,000 for 9/1/81 - 8/31/82	None	1225 S. Carferry Drive, Second Floor, Municipal Dock Office
4	MARATHON OIL CO.					
	Petroleum Terminal	4.4	7/31/82	$14,675.04	None	1980 S. Harbor Drive.
5	MOBIL OIL CORP.					
	Petroleum Terminal	10.0	2/28/85	$52,200	Two five-year options: 3/1/85 - 2/28/90 and 3/1/90 - 2/28/95	1414 S. Harbor Drive.
6	SHELL OIL CO.	10.0	2/28/85	$40,000	Five-year option: 3/1/85 - 2/28/90	1626 S. Harbor Drive.

TABLE 1 (Continued)

TABULAR SUMMARY OF BOARD OF HARBOR COMMISSIONERS LEASES

TENANT/Facility	Acreage	Lease Expiration	Base Rental (Annual)	Renewal Option	Brief Description of Site (Boundaries)
WEST SHORE PIPELINE CO.	0.5	7/31/82	$ 1,808.50**	Negotiable	1631 S. Lincoln Memorial Drive.
TANCO TERMINALS, INC.	10.0	2/28/83	$68,970	Three-year option: 3/1/83 - 2/28/86 Four five-year options: 3/1/86 - 2/28/91 3/1/91 - 2/29/96 3/1/96 - 2/28/2001 3/1/2001 - 2/28/2006	2100 S. Harbor Drive.
ADVANCE RENTING VENTURE	3.0	12/31/85	$ 6,000	Twenty years: 1/1/86 - 12/31/2005	1711 S. Carferry Drive.
ROLAND H. BECKER	0.6	12/31/86	$ 2,400	None	100 N. Marshall Street, North Harbor Tract.
C&J TRANSPORT CO.	3.1	3/31/82	$13,325	None	639 E. Polk Street, North Harbor Tract.
CONTINENTAL GRAIN CO.	4.2	Month to month	60¢/truck, per day, or part thereof.	None. 60-day notice required for termination of lease.	East of S. Lincoln Memorial Drive. Area South of Liquid Cargo Pier.
DUCHOW'S ISLAND YACHTS, INC.	1.9	7/31/86	$17,040	Two five-year options: 8/1/86 - 7/31/91 8/1/91 - 7/31/96	1431 S. Carferry Drive.
INTERNATIONAL SALT CO.	4.3	9/30/87	$21,996	None	1835 S. Carferry Drive. Two parcels: Parcel I - 2.55 acres. Parcel II - 1.77 acres.
ROAN, INC.	2.5	2/28/89	$13,000 to be renegotiated for period 3/1/84 - 2/28/89	None	1050 E. Bay Street.

TABLE 1 (Continued)

TABULAR SUMMARY OF BOARD OF HARBOR COMMISSIONERS LEASES

	TENANT/Facility	Acreage	Lease Expiration	Base Rental (Annual)	Renewal Option	Brief Description of Site (Boundaries)
14	EDWARD E. GILLEN CO.					
	1.	1.0	12/31/83	$ 6,900	One five-year option: 1/1/84 - 12/31/88; raising rental to $8,640 annually.	1801 S. Carferry Drive
	2.	0.3	Month to Month	$ 1,500	None	200' x 30' along Municipal Mooring Basin dock, south of leasehold 1.
	TOTALS	1.3		$ 8,400		
15	MILLER COMPRESSING CO.					
	1.	6.5	4/30/87	$32,384	One ten-year option: 5/1/87 - 4/30/97	1000 E. Bay Street
	2.	0.6	Month to Month	$ 1,380	None	Triangular section east of Miller leasehold.
	TOTALS	7.1		$33,764		
16	MILWAUKEE WORLD FESTIVAL, INC.	62.7	5/31/84	$1.00 for term 6/1/79 to 5/31/84	None	200 N. Harbor Drive, North Harbor Tract.
N	SPECIALTY RESTRAINTS OF WISCONSIN, INC.	1.7	1/31/88	$ 6,000	Three ten-year options: 2/1/88 - 1/31/98 2/1/98 - 1/31/2008 2/1/2008 - 1/31/2018	550 N. Harbor Drive, Municipal Passenger Pier, North Harbor Tract.
17	U.S. ARMY (ARMORY)	4.8	6/30/2000	$1.00 for entire term.	None	2372 S. Logan Avenue, Abbott Tract. 4.77 acres, plus Parcel B, reserved for public highway purposes.
18	U.S. COAST GUARD BASE	7.5	6/30/89	$1.00 per term and all renewal terms.	Annual renewal to 6/30/89 with twenty-five year option: 7/1/89 - 6/30/2014, with annual renewal to 6/30/2014	2420 S. Lincoln Memorial Drive.

TABLE 1 (Continued)

TABULAR SUMMARY OF BOARD OF HARBOR COMMISSIONERS LEASES

	TENANT/Facility	Acreage	Lease Expiration	Base Rental (Annual)	Renewal Option	Brief Description of Site (Boundaries)
N	U.S. COAST GUARD (Icebreaker Berth)	1.2	11/30/92	$1.00	Annual notice of intent to renew required from USCG at least 45 days prior to anniversary date of lease.	Erie Street Dock, North Harbor Tract.
19	U.S. NAVAL & MARINE CORPS RESERVE TRAINING CENTER	6.8	6/30/2002	$1.00 for current and all renewal terms.	Annual renewal to 6/30/2002.	2401 S. Lincoln Memorial Drive.
X	CHICAGO & NORTHWESTERN TRANSPORTATION COMPANY and CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC RAILROAD CO.	N/A	2/4/63	Various - see Appendix A.	Automatic annual renewals, unless terminated by either party on written notification, one year in advance.	Use of municipal facilities and tracks in performance of switching service to South Harbor Tract.
X	ROGER CHAPMAN, d/b/a INTERNATIONAL MARINE SYSTEMS	N/A	Four months	$2,680	None	Clayburn Street Dock, West Bank Milwaukee River.
N	S.C. JOHNSON & SON, INC.		5/31/83	$300	None	North Harbor Tract, parking lot east of Port Administration Building.

*Includes only area exterior to terminal building.

**Includes $1,000 annual easement fee.

Table 2 shows the utilization of leased land as of February 1982. Meehan Seaway Services with 17.8 acres accounts for all of the leased general cargo facilities. The general cargo facilities accounted for 9.7 percent of the leased lands. Leased land dedicated to dry bulk operations accounted for 10.6 percent of the land as of February 1982, and liquid bulk accounted for nearly 25 percent. Land dedicated to non-marine use accounted for 43.5 percent of the leased land.

As shown in Figure 2, the expiration of the Marathon Oil lease and the pending expiration of the Shell and Mobil leases will substantially reduce the amount of leased land dedicated to liquid bulk cargo (from 24.4 percent to 12.8 percent). Both leases have a 1985 expiration date, although they may be extended through 1990 and 1995.

Unless action is taken to correct the trend, by 1985 over 50 percent of the Board of Harbor Commissioners leased waterfront land could be dedicated to non-marine use, of which 93 percent will be non-income-producing.

2.C GREENFIELD AVENUE AND P.V. ATLAS PROPERTIES

The two new properties that have the potential for new port activity are Greenfield Avenue and P.V. Atlas. Greenfield has already been acquired by the city. The property has potential because it fronts on the inner harbor, provides for 27-foot draft vessels, and because it can possibly be expanded to accommodate 1,000-ft. vessels. The property is served by the C&NW and can be served by the Milwaukee, and has adequate highway access. However, before it can be used as a site for bulk storage it must be stabilized. The site was used for salt storage at one time and proved to be unsuitable. The land sank approximately 10 to 12 feet. The site will have to be bulkheaded and stabilized. The stabilization measures will have to support loads in excess of 750 lbs. per square foot. It should be noted that 750 lbs. per square foot will support a 10-foot high stack of a commodity such as salt. Most bulk commodities stored in the open such as pellets, coal, salt, and potash require piles higher than 10 feet. Also, enough property should be secured at this site so that a 1,000-foot vessel not extend into the access channel to the municipal mooring basin.

TABLE 2

LEASED LAND UTILIZATION AS OF FEBRUARY 1982

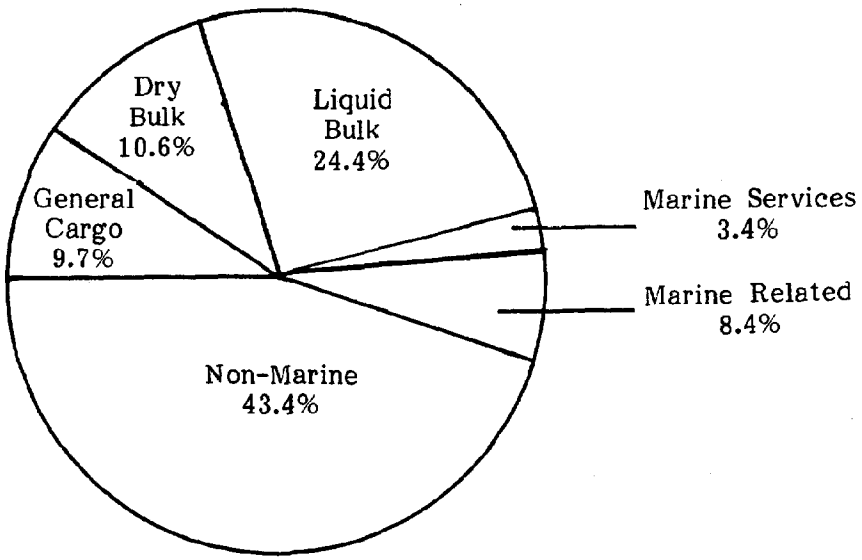
Tenant	General Cargo	Dry Bulk	Liquid Bulk	Marine Services	Marine-Related	Non-Marine
MEEHAN	17.8					
JACOBUS			9.9			
DOMTAR		8.1				
MARATHON			4.4*			
MOBIL			10.0			
SHELL			10.0			
WEST SHARE			0.5			
TANCO			10.0			
ADVANCE				3.0		
BECKER						0.6
C&J						3.1
CONTINENTAL					4.2	
DUCHOWS				1.9		
INTERNATIONAL		4.3				
RUAN					2.5	
GILLEN				1.3		
MILLER		7.1				
WORLD FESTIVAL						62.7
SPECIALTY						1.7
U.S. ARMY						4.8
U.S. COAST GUARD					8.7	
U.S. NAVY						6.8
TOTALS	17.8	19.5	44.8	6.2	15.4	79.7

*Expired July 31, 1982.

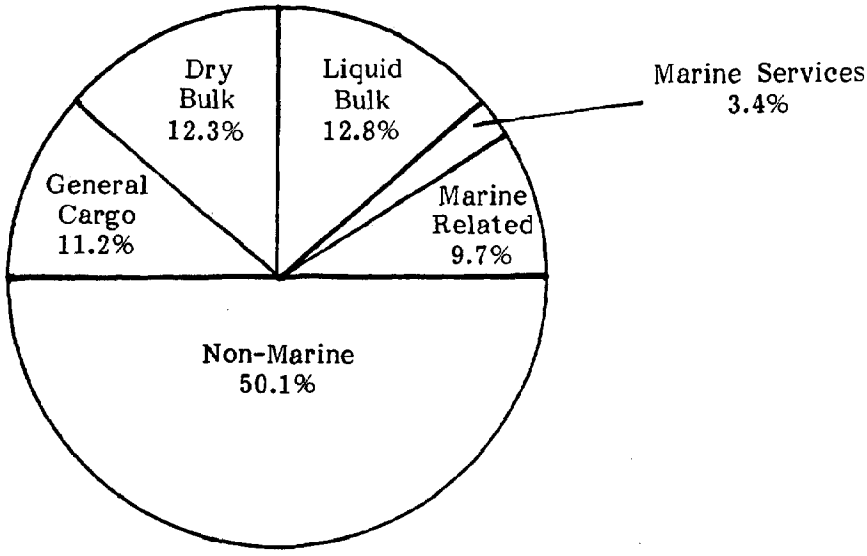
FIGURE 2

UTILIZATION OF LEASED LAND
AS OF FEBRUARY 1982 AND AFTER EXPIRATION
OF MARATHON, MOBIL & SHELL LEASES

February 1982



After Expiration - February 28, 1985



* Mobil & Shell have options to 1995 & 1990 respectively.

The Greenfield property should be reserved for a bulk commodity that has the potential for being carried in 1,000-foot vessels. Thousand-foot vessels are constrained to the Great Lakes upstream of the Welland Canal and are most likely to engage in the transport of ore, pellets, coal, and possibly potash.

The P.V. Atlas property (31 acres) and adjacent property currently under option have potential for continued marine-related use. This property was formerly used by the Grand Trunk car ferry. It appears to be well bulkheaded, with an interlocking steel facewall, although no inspection was made below the waterline. The soil appears stable. The rail lines serving the car ferry have been removed. The ferry slip remains in place and appears to be operable, with some repair. There are heavy duty bollards in place along the quay wall adjacent to the Kinnickinnic River. The property has the advantage of being served by both the Milwaukee and the C&NW railroads.

Access to the P.V. Atlas property is constrained by the C&NW railroad bridge 1551. The bridge affords a horizontal clearance of only 64 feet and a depth of approximately 21 feet. Some laker vessels and small ocean vessels can transit through the bridge. For instance, the Medusa Challenger serves the Medusa plant upstream of the bridge. This vessel is a dedicated cement carrier (self-unloader) of 6,967 gross tons. It is 552 feet in length with a 56-foot beam. It has a loaded draft of approximately 21 feet.

The P.V. Atlas property would be suitable immediately for any activity that could be served by a vessel drawing less than 21 feet with a beam of less than 64 feet. However, this restricts the number of vessels that can gain access to the property. Of the some 105 self-unloaders in the Canadian and U.S. Great Lakes fleet (self-unloaders are the most modern vessels and most likely to be employed in any new capital-intensive venture), only 22, or approximately 20 percent, are narrow enough to enter through the bridge restriction. Even in those cases, the restrictive draft would force the vessel to come in less than "full and down." For instance, the T.W. Robinson, a 588-foot self-unloader with a 60'3" beam, draws 22'8" at mid-summer draft.

Domtar would consider the site, provided that larger vessels could gain entry. For instance, much of their cargo is carried by the Algoma Central Railway fleet. The self-unloader Algoway (Canadian flag) is typical at 14,640 gross registered tons. It has a beam of 72 feet and draws 28.8 feet at mid-summer draft. Approximately 8-10 acres of land are needed to service a vessel of this type. The unloading boom stretches approximately 215 feet outboard of the ship.

The team made inquiries of potential users of the property and found a preference for the Board of Harbor Commissioners to acquire the property and lease it to the user on a tenant basis rather than have the user purchase the property outright.

There seems to be some interest in establishing a multi-use bulk terminal at this site which could handle a variety of cargoes, including feed pellets, salt, potash, wood chips, seed, etc. Obviously, however, the bridge would have to be removed.

2.D C&NW RAIL BRIDGE 1551

The primary restriction to the P.V. Atlas site is the C&NW bridge 1551. This is a swing bridge mounted in the center of the river on a cement cylinder with a 40-foot diameter. The swinging portion of the bridge is 230 feet long. It affords a 64-foot clearance on either side, and has a minimum depth of approximately 21 feet. There is a power cable at the bridge site 7 feet below the existing river bottom.

The channel adjacent to the supporting cylinder cannot be dredged further because it would undermine the grillage (pilings). The bridge is old, having been constructed in the late 1800's. It is a maintenance and manpower expense to the railroad and will eventually have to be removed or replaced. The bridge is maintained in an open position until it is needed and then personnel are dispatched to open it. The C&NW recently removed a similar bridge over the

Mississippi River at Winona, Minnesota for $140,000. The average bid was $300,000.

The C&NW currently uses bridge 1551 to serve a TOFC yard and several customers, including Hanson Storage, Afram Bros., Badger Feed, and others. Within three years, the TOFC terminal will be moved to the Butler Yards. Some customers--Hansons and Florida Sheet--require the transit of two bridges. Bridge 1551 could be removed and the current customers on the spur could still be served through the Menomonee Belt exchange.

It would appear that the time might be right to approach the C&NW about the possibility of removing the bridge. An offer to defray some of the expenses might expedite a decision. Also, it should be noted that bridge removal costs are low now, due to the recession.

2.E ENERGY TRANSITION: PETROLEUM TO COAL

One of the primary issues addressed by this study is the role of the port in moving energy resources through the state. The port's role as a transfer and storage center for petroleum is now diminished.

The flow of coal into and out of the Milwaukee area is subject to a number of variables, including worldwide supply of and demand for energy resources. Traditionally, coal has come in to the three key area power stations--Oakcreek, Valley, and Pleasant Prairie. Oakcreek is presently using Midwestern coal exclusively. This coal comes in by unit train and is unloaded at Oakcreek. Some coal is then transshipped at the Oakcreek site and barged to the Valley power plant. Pleasant Prairie will be on Western coal for the next twenty years. It is possible that the Valley plant could shift to Western coal, requiring water transport from the coal terminal at Superior, Wisconsin. This, however, will depend on factors such as coal price competition and sulfur, moisture and BTU content at various competing suppliers.

The more likely scenario for Milwaukee is that of a coal-loading terminal. Currently, there is only one railroad carrying coal east out of the Wyoming and Montana Powder River Basin—the Burlington Northern (BN). However, the C&NW is pursuing a plan together with the Union Pacific, which will give it access to the Powder River Basin. The plan involves ICC invoked trackage rights for the C&NW over BN tracks. Although the BN will try to delay or frustrate the plan through litigation, it is likely that the C&NW could begin to haul coal by 1984, if not sooner.

When coal begins to move over the C&NW, there will be an emphasis on moving unit trains to consuming sites on the C&NW and to a loading terminal or terminals that can move the coal by water to eastern U.S. and Canadian generating sites and/or possibly overseas to European steam generators.

At the time of the team's interviews with C&NW, they had made no commitment for a coal loading terminal on the Lakes. At that time they were interested in proposals. Milwaukee is not an ideal site for a lakeside coal terminal for C&NW, because it is north of the mainline track west to the Wyoming fields. However, an aggressive entrepreneur, aided by incentives from the Board of Harbor Commissioners, might be able to establish a terminal in the Port of Milwaukee.

Of particular interest to the port is the possibility that U.S. Western coal could begin to move in substantial volumes to western Europe. This possibility is enhanced by the potential for rail competition from the Powder River Basin which should help drive rail rates down.

The marketability of Western coal in Europe is dependent on several factors, the most important of which is cost per million BTU's. Montana/ Wyoming coal has a low BTU rating, 8,600 to 9,600 BTU's per pound as compared to 11,500 BTU's per pound for West Virginia and Pennsylvania bituminous. Table 3 shows the total cost breakdown for delivering coal to Europe. Note that the cost is $3.07 to $3.38 per million BTU. Table 4 compares the delivered BTU cost

TABLE 3

MONTANA/WYOMING COAL
DELIVERED COST IN EUROPE
VIA GREAT LAKES ST. LAWRENCE SEAWAY

	9,600 BTU/lb.	8,600 BTU/lb.
F.O.B. Mine	$12.00	$11.00
Rail to Superior	16.00	16.00
Elevation	3.00	3.00
Laker to St. Lawrence	12.00	12.00
Toll - Seaway	.90	.90
Transfer Quebec	3.00	3.00
Ocean Freight Europe	12.20 100K DWT	12.20
TOTAL	$59.10 net ton	$58.10 net ton
	$3.07 per million BTU	$3.38 per million BTU

TABLE 4

COMPARISON: DELIVERED COST PER MILLION BTU IN EUROPE

11,500 BTU	11,500 BTU	9,600 BTU	8,600 BTU
West Virginia	Pennsylvania	Montana	Montana
Hampton Roads	Baltimore	Superior	Superior
$2.50	$2.48	$3.07	$3.38

of West Virginia, Pennsylvania and Montana coal in Europe per million BTU. The Eastern U.S. coal has a definite advantage in price.

There are ways of making Western coal more competitive in Europe. Table 5 shows the impact of drying out excess moisture to elevate the BTU content and then reducing transportation through a combination of improved efficiency, competition, and marginal cost pricing. Note that a mid-stream transfer in the Lower St. Lawrence River to a deepdraft 150,000 DWT tanker facilitates a lower ocean freight rate. The bottom line of $2.45 per million BTU is in the ballpark with the prices shown in Table 4.

Another technique could be employed to reduce even further the price of Western coal. Midwestern coal (the type used in Oakcreek) generally has higher BTU qualities, but also has a higher sulfur content, which keeps it from being competitive in Europe. As shown in Table 6, the blending of Western and Midwestern coal can produce a delivered price of $2.19 per million BTU.

Admittedly, there are a number of "ifs" in the long-range viability of moving large volumes of Western coal. However, the potential definitely exists. There are few experts that will discount the viability of coal as primary fuel in the next ten to twenty years. The Port of Milwaukee could serve as the eastern coal terminus for the C&NW and as a site for blending Western and Midwestern coal.

Coal moving to a western European location either via the Lower St. Lawrence aboard deepdraft vessels, or aboard shallower draft salties that can serve power-generating plants on constrained channels, could serve Milwaukee under long-term charters on contracts of affreightment. Such semi-continuous service would be ideal for combination vessel innovations such as container deckloads.

TABLE 5

HOW TO MAKE WESTERN COAL MORE COMPETITIVE

10,500 BTU - Drying

F.O.B. Mine	$13.20	Pay for drying
Rail to Superior or Milwaukee	13.50	15% reduction from competition
Elevation	2.70	10% reduction from competition
Laker to St. Lawrence	10.20	15% reduction, combination cargoes and backhauls
Toll - Seaway	.90	No change
Transfer Quebec	1.00	Mid-stream transfer
Ocean Freight	10.00	*150,000 DWT - 20% reduction
	$51.50 net ton	
	$ 2.45 per million BTU	

*Cannot be paralleled at U.S. East Coast ports.

TABLE 6

BLENDING WESTERN COAL WITH MID-SHIP TRANSFER

	50% Western 10,500 BTU	50% Midwestern 12,500 BTU	Mixed 11,500 BTU	
F.O.B. Mine	$13.20	$14.85	$14.03	
Rail Milwaukee	13.50			
Rail Milwaukee		11.00		
Total Rail			12.25	
Elevation Milwaukee	2.70			
Elevation Milwaukee		1.25		
Total Elevation			1.95	
Laker Milwaukee	10.20			
Laker Milwaukee		10.20		
Total Laker			10.20	
Toll			.90	
Transship Mid-Stream			1.00	
Ocean Freight Europe	150,000 DWT		10.00	
			$50.33	net ton
			$ 2.19	million BTU

3. DEMAND ANALYSIS

As stated in the study proposal, traditional forecasting methods of applying regression analysis to historical cargo figures are useful only if one anticipates the future will be a continuation of the past. As a result of the historical data analyses, a review of various commodity and Lakes/Seaway forecasts, and the survey of port users, it was clear that the demand analysis would have to be based primarily on the latter two, as well as on the consultant's professional judgment.

The demand analysis is presented on the basis of individual commodities or, where smaller volumes are considered, on the basis of cargo type. Each is discussed in terms of (1) historical data; (2) other forecasts and considerations; and (3) Port of Milwaukee forecasts.

3.A COAL

Historical Data — As shown in Table 6, coal tonnage at the Port of Milwaukee has been a domestic import and has ranged from a high of 1.12 million tons in 1973 to a low of 0.76 million tons in 1981, for an average annual decline of 4.7 percent for the nine-year period. During that period, coal has maintained an average 22 percent of the port's total volume.

Other Forecasts and Considerations — The incoming domestic coal forecast has been taken from the February 1982 Wisconsin Division of State Energy report entitled Coal Transportation to Wisconsin: An Overview. The study predicts a continuing decline in coal receipts at Milwaukee through 1985 and a 4.10 percent annual increase through 1990. This forecast appears reasonable considering current receipts and foreseeable demand.

TABLE 6

COAL

A. HISTORICAL DATA

Commodity	Year	Great Lakes (Domestic)			Canadian			Overseas			Combined Total	% of Total Port Tonnage
		In	Out	Total	In	Out	Total	In	Out	Total		
COAL	1981	760,399		760,399							760,399	20.2%
	1980	1,005,754		1,005,754							1,005,754	23.7
	1979	888,000		888,000							888,000	18.2
	1978	945,000		945,000							945,000	21.0
	1977	999,025		999,025		NONE			NONE		999,025	25.8
	1976	926,791		926,791							926,791	25.5
	1975	827,828		827,828							827,828	23.1
	1974	898,751		898,751							898,751	22.0
	1973	1,118,333		1,118,333							1,118,333	20.2

B. FORECAST

	1984				758,000	
	1986				1,240,150	
	1988				2,302,080	
	1990				6,949,200	
	1992				8,465,596	

Currently there are no shipments out of the Port of Milwaukee because of the lack of transshipment facilities. The only coal transshipment facility in the state is the Superior Midwest Energy Terminal (SMET). SMET now serves two domestic generating plants with approximately 4 million tons annually. It has annual throughput of 12 million tons.

The forecasts of coal shipments out of Milwaukee are based on the assumption that the C&NW will have service available from the Powder River Basin by 1984 and that Milwaukee can attract a terminal operator and have facilities in place by 1986.

It is anticipated that the domestic market will be the first served. The export market will follow for the reasons cited in Chapter 2 of the study.

Forecast -- The forecast predicts domestic receipts to bottom out in 1986 and then resume a slow but steady growth to nearly one million tons through 1992.

Shipments of coal are forecasted to start for domestic shipments in 1986. The Wisconsin study predicts 11 million tons by 1985 and 15 million by 1990. Milwaukee's share by 1988 is forecasted to be 10 percent or one million tons to grow to 3,523,656 tons by 1992. This is a conservative estimate and assumes that the facility would have been built because of a long-term contract to serve one generating station and a one-generating station capacity has been predicted through 1990.

The export forecast is more difficult. The study team believes Western coal will be competitive through the Great Lakes/St. Lawrence Seaway gateway for the reasons cited in Chapter 2. The Wisconsin study suggests that the export total may reach 30 million tons by 1990. Thirty million tons is far too optimistic for the State of Wisconsin when you consider that total U.S. coal exports for 1990 are predicted to be 176 million tons. The National Coal Association has forecasted that Western coal exports will be 12 million tons by 1985 and 21 million by 1990. Accordingly, and assuming Milwaukee can attract a coal

transshipment terminal, the study team sees 1988 as the probable first year of export coal shipment, with 500,000 tons outbound, rising to 4 million tons by 1992.

3.B GRAIN

Historical Data -- Grain volume was low in the early to mid-70's, dropping to less than a 10 percent share of port tonnage in 1975-76. In recent years, however, grain has represented a one-fourth to one-third share of total tonnage. Volume in the past four years has exceeded one million tons, with the majority (nearly 90 percent) being overseas exports. This is in contrast to earlier (1973-75) years when grain traffic with Canada accounted for as much as two-thirds of the grain tonnage. (See Table 7.)

Other Forecasts and Considerations -- Because of the great interest in recent years of establishing a cooperative grain elevator at the Port of Milwaukee, a great deal has already been written on the future potential of the port's grain volume. Generally, it is agreed that in future years Wisconsin grain output will increase and that the Port of Milwaukee will capture a significant share of the export volume. The overall outlook for grain exports via the Seaway, however, is not very optimistic. The recent SLSDC/SLSA forecast[1/] projects grain shipments to grow at an annual compound rate of only 2.9 percent through the year 2000. For this reason, Milwaukee will have to compete heavily with, and perhaps divert cargoes from, other Lakes ports.

Any projections are highly sensitive to U.S. policy on user fees, public transportation investment decisions, private terminal and equipment investments, and political, economic and agronomic assumptions in the world grain forecast.

Forecast -- The forecast grain tonnage assumes that the Lakes/Seaway will maintain recent shares of U.S. grain exports, that Milwaukee will retain its port

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[1/] Data Resources, Inc./Acres Consulting Services Ltd., Seaway Commodity Flow Forecast: 1980 to 2000, February 1982.

TABLE 7

GRAIN

A. HISTORICAL DATA

Commodity	Year	Great Lakes (Domestic)			Canadian			Overseas			Combined Total	% of Total Port Tonnage
		In	Out	Total	In	Out	Total	In	Out	Total		
GRAIN	1981	4,800		4,800		22,708	22,708		1,040,028	1,040,028	1,067,536	28.4%
	1980					22,102	22,102		1,361,645	1,361,645	1,383,747	32.6
	1979				15,120	58,459	73,579		1,562,737	1,562,737	1,636,316	33.6
	1978				39,767	408,263	448,030		638,573	638,573	1,086,603	24.2
	1977				59,880	184,248	244,128		318,225	318,225	562,353	14.5
	1976				60,866	82,669	143,535		172,240	172,240	315,775	8.7
	1975					153,054	153,054		96,851	96,851	249,905	7.0
	1974				189,146	164,721	353,867		175,899	175,899	529,766	13.0
	1973				205,588	301,652	507,240		301,129	301,129	808,369	14.6

B. FORECAST

	1984				1,369,665	
	1986				1,450,257	
	1988				1,535,592	
	1990				1,625,948	
	1992				1,721,620	

share of those exports, and that new elevator capacity will not be in place before the late 1980's. Once the elevator is in place and operating, the grain volume is likely to show a significant increase.

3.C SALT

Historical Data — The volume of salt moving into Milwaukee over the past nine years has been relatively stable, with average annual volumes of 286,500 tons. This has constituted an average 6-7 percent share of total port volume. (See Table 8.)

Other Forecasts and Considerations — The recent Seaway System forecasts project that future levels of salt tonnage will not change significantly. The two salt companies operating at Milwaukee see little change in the level of their operations, although Domtar is still seeking an alternate site for a portion of its operations. International Salt stated their intention to continue at current levels as long as they have the water access in Milwaukee.

Forecast — Using the annual average over the last nine years as a base, the forecast shows at best only slight growth in salt tonnage over the next ten years.

TABLE 8

SALT

A. HISTORICAL DATA

Commodity	Year	Great Lakes (Domestic)			Canadian			Overseas			Combined Total	% of Total Port Tonnage
		In	Out	Total	In	Out	Total	In	Out	Total		
SALT	1981	222,683		222,683							222,683	5.9%
	1980	133,639		133,639	121,086		121,086				254,725	6.0
	1979	117,953		117,953	197,275		197,275				315,228	6.5
	1978	275,906		275,906	102,390		102,390				378,196	8.4
	1977	139,399		139,399	66,845		66,845				206,244	5.3
	1976	238,101		238,101	216,282		216,282		2,355	2,355	456,738	12.6
	1975	299,121		299,121	8,963		8,963				308,084	8.6
	1974	297,647		297,647	28,031		28,031				325,678	8.0
	1973	178,226		178,226	132,645		132,645				310,871	5.6

B. FORECAST

	1984					289,372	
	1986					292,273	
	1988					298,148	
	1990					304,140	
	1992					310,254	

Wisconsin Coastal Management Program

Progress Report

For WCMP Staff Use	
WCMP Project Number:	829.4
Date Received:	

(CM 415/80)

Submit this Progress Report to: Wisconsin Dept. of Administration
Office of Coastal Management
101 S. Webster Street, 7th Floor
Madison, WI 53702

Project Title:	Purchase Order Number:	
Port of Milwaukee Master Plan	ADB - 00878	
Project Duration in MONTHS: 12	Report Period From: 1 July 1982	To: FINAL 31 August 1982 (
Project Type (Check one or more):	CMP funds spent to date: 36,000	% of budgeted funds: 98%
☒ Improve SCA Management SCA Number MIL-6	Match spent to date: 11,846	% of budgeted funds 129%
☐ Implement State Law	Signature of project manager:	
☐ CEIP (Coastal Energy Impact Project)	ROY F. HOFFMANN, USN (Ret.)	
☐ Demonstration	Municipal Port Director	

Objectives of Project (as contracted):

The Master Plan will enable the Harbor Commission to make intelligent decisions to allot appropriate land use in this area and to establish land reservations to accommodate real port potential. The plan will give immediate attention to development of the area in the near-term. The out-years of the plan will develop variations from anticipated lease expirations and will enable the changing membership of the Harbor Board to plan objectives in a phased and logical sequence.

Thoroughly discuss progress made toward accomplishing objectives during this reporting period:

On 8 July 1982, the subcontractor made an interim progress report and conducted a briefing for the Board of Harbor Commissioners and Port staff. At that time, the degree of completion of the seven tasks making up the project was addressed, and it was learned that the overall completion was 63%. Preliminary conclusions as to Land Use, Organization and Marketing, and Future Growth were presented and discussed. Direction was given to the subcontractor as to zones of emphasis to be pursued during the balance of the work. Between 8 July and 15 July, the subcontractor's Engineering Specialist inspected the Port properties and conferred with Port engineering, operating, and executive staff. On 26 July, in response to a request, the subcontractor was furnished data on the organizational structure of the Port

2. Progress (continued)

and its place within the City's corresponding structure; financial operating data for the most current period; a roster of Port employee positions; and a schedule of equipment owned by the Port. The subcontractor's report was completed and submitted in draft form on 25 August. After a prior review by senior Port staff, it was presented to the Board of Harbor Commissioners at a public meeting on the same day. This presentation was made in depth and was supported by visual graphics; it stimulated considerable discussion and questioning.

Five copies of the report are submitted herewith, in accordance with the requirements of the contract.

3. Problems/Concerns (Issues, project, or administrative concerns):

This project proceeded satisfactorily within the time constraints applicable to the contract.

4. Impact thus far, if any, of the project on the shoreline, coastal resources, or coastal residents:

The Port of Milwaukee has been provided with a Master Plan which makes specific recommendations as to action to be taken to convert the Port's organizational structure to that of a public corporation with a broader base, and to formulate a revised marketing strategy and implementation plan. In addition, recommendations are made for securing and amplifying additional general cargo and bulk cargo service, and for the acquisition, development and utilization of existing and available waterfront land. The Board of Harbor Commissioners will form a committee to study and evaluate the report and make recommendations to the Board. The plans, background data and recommendations after evaluation will be of great value to the decision-makers in effective management of the SCA area.

Signature of person authorized to receive funds:

3.D CEMENT, CLINKER, LIMESTONE, AND SAND

Historical Data — These four commodities are considered together because their volumes all respond to the same market—namely, construction of buildings, highways, and other concrete-user projects.

Cement is produced by heating an accurately proportioned, finely ground mixture of limestone, silica, alumina and iron oxide in a rotary kiln. These kilns are the largest "moving parts" constructed for any machine built. Energy requirements for the process are significant—what emerges from the kiln is a fused mixture called "clinker." Clinker is mixed with gypsum and ground to a fine powder to form portland cement. Cement has little use alone, but when combined with water, sand, gravel and aggregates, it becomes concrete. Concrete is a widely-used building material which can be poured on-site, or used in the form of precast panels or heavy prestressed columns and beams in building and construction. As noted above, the major uses are in construction of highways, buildings, water projects, and similar structures.

Milwaukee is an importer of these products, which are used for local construction. Consequently, volumes are completely dependent upon the pace of local construction activity. This is very difficult to forecast. Road construction and other major projects are often related to political decisions, while building construction is most closely related to the state of the local economy.

Other Forecasts and Considerations -- The most relevant recent forecast of cement movements in the Great Lakes was done by Data Resources, Inc./Acres Consulting Services Ltd. in the Seaway Commodity Flow Forecast: 1980 to 2000 (February 1982). In that study, these movements were projected to be unchanged over the 20-year forecast horizon, and at a level equivalent to the most recent five-year period.

Forecast — Given the uncertainties of the national and local economies over the next several years, it is not justified to project either an upward or a downward trend in construction activity in the Milwaukee area over the relevant

time period. Therefore, cement and related movements are projected to be of the same magnitude as in the past, with no long-term trend change. Using the last five years as a basis, this would yield an expected tonnage of 628,000 tons per year, as is indicated in Table 9.

3.E SCRAP

Historical Data — The volume of scrap has varied in the past, with volumes ranging from a low of 17,998 tons to a high of 179,130. The scrap shipments have all been outbound, foreign destination shipments. Generally, they average 2 percent of the port's total tonnage. (See Table 10.)

Other Forecasts and Considerations — The Seaway Commodity Flow Forecast predicts scrap shipments to remain at current levels through the year 2000.

Forecast -- Scrap shipments are forecast to remain at an average level of 100,000 tons per year, with actual tonnage varying above or below that level in any given year.

3.F IRON AND STEEL

Historical Data — Iron and steel move into Milwaukee for the most part from Canada. A variety of shapes is involved. for the most part the movements are oriented to the local heavy equipment industry, although the local construction industry also accounts for some tonnage.

The future of iron and steel flows through the Port of Milwaukee is tied to the fortunes of the local heavy equipment industry, and to a lesser extent on the dynamics of sources and markets for the steel industry. The local heavy equipment industry is projected to be generally on a downward path, partly due to long-range economic conditions, partly due to increasing overseas competition, and partly due to a shift in production away from the Milwaukee area.

TABLE 9

CEMENT, CLINKER, LIMESTONE, AND SAND

A. HISTORICAL DATA

Commodity	Year	Great Lakes (Domestic) In	Great Lakes (Domestic) Out	Great Lakes (Domestic) Total	Canadian In	Canadian Out	Canadian Total	Overseas In	Overseas Out	Overseas Total	Combined Total	% of Total Port Tonnage
CEMENT	1981	416,587		416,587							416,587	
	1980	447,306		447,306							447,306	
	1979	536,318		536,318							536,318	
	1978	600,517		600,517							600,517	
	1977	432,879		432,879							432,879	
	1976	443,748		443,748		NONE			NONE		443,748	
	1975	392,232		392,232							392,232	
	1974	348,943		348,943							348,943	
	1973	418,934		418,934							418,934	
SAND	1981	65,534		65,534							65,534	
	1980	65,965		65,965							65,965	
	1979	98,270		98,270							98,270	
	1978	70,949		70,949		NONE			NONE		70,949	
	1977	74,122		74,122							74,122	
	1976	68,999		68,999							68,999	
	1975	77,416		77,416							77,416	
	1974	74,939		74,939							74,939	
	1973	94,021		94,021							94,021	
LIMESTONE	1981	11,687		11,687							11,687	
	1980											
	1979											
	1978					NONE			NONE			
	1977											
	1976											
	1975	12,669		12,669							12,669	
	1974	300,623		300,623							300,623	
	1973	274,405		274,405							274,405	
CLINKER	1981											
	1980	51,500		51,500							51,500	
	1979	101,951		101,951							101,951	
	1978	75,700		75,700					NONE		75,700	
	1977	91,024		91,024							91,024	
	1976	32,016		32,016							32,016	
	1975				32,796		32,796				32,796	
	1974	77,049		77,049							77,049	
	1973				75,764		75,764				75,764	
FOUR COMMODITIES	1981										493,808	13.1%
	1980										564,762	13.3
	1979										736,539	15.1
	1978										747,211	16.6
	1977										597,894	15.4
	1976										544,763	15.0
	1975										515,113	14.4
	1974										801,554	19.6
	1973										863,124	15.6

TABLE 9 (Continued)

CEMENT, CLINKER, LIMESTONE, AND SAND

B. FORECAST

Commodity	Year	Great Lakes (Domestic)			Canadian			Overseas			Combined Total
		In	Out	Total	In	Out	Total	In	Out	Total	
	1984										628,000
	1986										628,000
	1988										628,000
	1990										628,000

TABLE 10

SCRAP

A. HISTORICAL DATA

Commodity	Year	Great Lakes (Domestic)			Canadian			Overseas			Combined Total	% of Total Port Tonnage
		In	Out	Total	In	Out	Total	In	Out	Total		
SCRAP	1981								41,598	41,598	41,598	1.1%
	1980								179,130	179,130	179,130	4.2
	1979							115,207		115,207	115,207	2.4
	1978								83,253	83,253	83,253	1.8
	1977								83,635	83,635	83,635	2.2
	1976								111,984	111,984	111,984	3.1
	1975		11,783	11,783					149,054	149,054	160,837	4.5
	1974								17,998	17,998	17,998	0.4
	1973								166,790	166,790	166,790	3.0

B. FORECAST

	1984				100,000	
	1986				100,000	
	1988				100,000	
	1990				100,000	
	1992				100,000	

Forecast — Given the above, we project a gradual diminishing in iron and steel movements over the forecast horizon to 1992. Based on examination of available tonnage data, which is quite variable in the case of steel, we believe 50,000 tons of steel and 35,000 tons of iron is a reasonable level for the base year of 1984. We assume an overall decline in receipts of 10 percent for the period to 1992. The resulting forecast appears in Table 11.

3.G LIQUID BULK

Historical Data — Petroleum products moving through the Port of Milwaukee have shown no discernible pattern of growth or decline, even though there has been a significant reduction in petroleum transfer and storage capacity at the port. In 1981, the port registered a record 838,503 tons of petroleum products, although presumably some of this total was routed directly to users and not stored on Jones Island. Traditionally, petroleum accounts for 10 to 15 percent of the port's tonnage.

Non-petroleum products, on the other hand, are showing a significant growth trend, of 16 percent annually. (See Table 12.)

Other Forecasts and Considerations — The Seaway Commodity Flow Forecast predicts no growth in the petroleum industry through the year 2000. Because of the reduction of facilities on Jones Island and the dedication of most of the petroleum pier to other liquid bulk, the study team sees a continual decline in petroleum, which could fall off dramatically at the 1985, 1990 or 1995 threshold, depending on the status of the remaining bulk petroleum facilities on Jones Island.

On the other hand, non-petroleum shipments, particularly those moving overseas, have a potential for growth. TANCO and Liquid Lakes are engaged in that business and portions of the petroleum pier have been purged to handle the cargo.

TABLE 11
IRON AND STEEL

A. HISTORICAL DATA

Commodity	Year	Great Lakes (Domestic)			Canadian			Overseas			Combined Total	% of Total Port Tonnage
		In	Out	Total	In	Out	Total	In	Out	Total		
PIG IRON	1981				52,558		52,558				52,558	
	1980				31,206		31,206				31,206	
	1979				14,139		14,139	11,474		11,474	25,613	
	1978				27,954		27,954				27,954	
	1977	7,446		7,446	17,183		17,183				24,629	1981 1.8%
	1976	6,630		6,630	12,681		12,681				19,311	1980 1.0
	1975	22,936		22,936	23,058		23,058				45,994	1979 4.0
	1974	7,976		7,976	13,887		13,887				21,863	1978**
	1973	4,188		4,188	21,241		21,241				25,429	1977**
STEEL	1981							16,908		16,908	16,908	1976**
	1980	8,054		8,054	1,536		1,536	3,434		3,434	13,024	1975 3.4
	1979	132,604		132,604	22,780		22,780	18,161	822	18,983	174,367	1974 1.9
	1978	included in General Cargo										1973 2.5
	1977	"		"	"	"	"					
	1976	"		"	"	"	"					
	1975	1,285		1,285	5,515		5,515	70,781		70,781	77,581	
	1974							53,850		53,850	53,850	
	1973				8,943		8,943	110,097		110,097	119,040	

B. FORECAST

	1984				86,000	
	1986				82,875	
	1988				80,750	
	1990				78,625	
	1992				76,500	

**Cannot be computed since exact steel tonnage is not known.

TABLE 12

LIQUID CARGO

A. HISTORICAL DATA

Commodity	Year	Great Lakes (Domestic)			Canadian			Overseas			Combined Total	% of Total Port Tonnage
		In	Out	Total	In	Out	Total	In	Out	Total		
PETROLEUM	1981	828,249	10,254	838,503							838,503	22.3%
	1980	446,728		446,728							446,728	10.5
	1979	429,778		429,778							429,778	8.8
	1978	473,813		473,813							473,813	10.5
	1977	540,119		540,119							540,119	13.9
	1976	438,031		438,031							438,031	12.1
	1975	464,876		464,876							464,876	13.0
	1974	542,737		542,737							542,737	13.3
	1973	781,209		781,209							781,209	14.1
LIQUID CARGO (non-Petroleum)	1981	35,956		35,956				1,564	13,584	15,148	51,104	1.4%
	1980							2,894	14,925	17,819	17,819	0.4
	1979	5,802		5,802				4,232		4,232	10,034	0.2
	1978							5,344		5,344	5,344	0.1
	1977							10,122		10,122	10,122	0.3
	1976							8,649		8,649	8,649	0.2
	1975											---
	1974								3,930	3,930	3,930	0.1
	1973								13,113	13,113	13,113	0.2

B. FORECAST

PETROLEUM	1984										400,000	
	1986										360,000	
	1988										300,000	
	1990										300,000	
	1992										300,000	
LIQUID CARGO (non-Petroleum)	1984										55,200	
	1986										59,700	
	1988										64,600	
	1990										69,800	
	1992										75,500	

Forecast — For petroleum products, the team is predicting a continuous decline from the 1980 base year to a stable amount in 1992. For non-petroleum products, we are predicting a 4 percent per year growth from the 1981 base of 51,104 tons.

3.H GENERAL CARGO

Historical Data — General cargo has historically averaged from 4 to 6 percent of the port's total tonnage, with no discernible pattern or trend. Outbound shipments, primarily PL-480 cargoes, have dominated the flow. (See Table 13.)

Other Forecasts and Considerations — General cargo on the Great Lakes and Great Lakes/St. Lawrence Seaway System has been predicted by many to continue to decline because of the lack of container service and other factors. The study team is predicting a level volume of general cargo through 1984, as the System goes through a transition. Then factors such as the Great Lakes Marketing Corporation and combination bulk/container carriers will begin to have an influence. At the same time, railroad intra-mode competition will be reduced and highway deterioration and fuel costs will increase the operating costs of motor carriers. These factors, together with the aggressive marketing of Meehan Seaway Services, should begin to show results by 1986. Bagged grains and foodstuffs outbound will continue to dominate, with some new inbound commodities such as newsprint making inroads. Occasional heavy-lift units will also continue to be transshipped at the port.

Forecast — The year 1984 will produce 200,000 tons of general cargo, with volumes growing to 272,000 tons by 1991.

3.I TOTAL PORT TONNAGE

[TO BE PROVIDED]

TABLE 14

TABLE 14

TOTAL PORT TONNAGE

A. HISTORICAL DATA

Commodity	Year	Great Lakes (Domestic)			Canadian			Overseas			Combined Total
		In	Out	Total	In	Out	Total	In	Out	Total	
TOTALS	1981	2,357,355	10,254	2,367,609	96,579	22,708	119,287	53,549	1,221,396	1,274,945	3,761,841
	1980	2,263,474	40,342	2,303,816	156,642	22,102	178,744	61,910	1,701,879	1,763,789	4,246,349
	1979	2,516,129	125,530	2,641,479	250,272	58,459	308,731	231,329	1,691,648	1,922,977	4,873,187
	1978	2,728,990	225,704	2,954,694	207,680	406,263	615,943	92,769	837,735	930,504	4,501,141
	1977	2,557,243	290,548	2,847,791	164,526	184,248	348,774	98,045	578,751	676,797	3,873,362
	1976	2,393,882	304,122	2,698,004	292,377	82,669	375,046	96,365	460,670	557,035	3,630,085
	1975	2,420,533	337,251	2,757,784	70,332	153,054	223,386	188,846	414,133	602,979	3,584,149
	1974	2,902,552	363,661	3,266,213	231,064	164,721	395,785	91,911	327,701	419,612	4,081,610
	1973	3,374,142	524,400	3,898,542	480,434	301,652	782,086	207,102	635,263	842,365	5,522,993
% OF TOTAL	1981	62.7	0.3	63.0	2.6	0.6	3.2	1.4	32.5	33.9	100.0
	1980	53.3	0.9	54.2	3.7	0.5	4.2	1.5	40.1	41.6	100.0
	1979	51.6	2.6	54.2	5.1	1.2	6.3	4.7	34.7	39.4	100.0
	1978	60.6	5.0	65.6	4.6	9.0	13.6	2.1	18.6	20.7	100.0
	1977	66.0	7.5	73.5	4.3	4.8	9.1	2.5	14.9	17.4	100.0
	1976	66.0	8.4	74.4	8.0	2.3	10.3	2.6	12.7	15.3	100.0
	1975	67.6	9.4	77.0	1.9	4.3	6.2	5.3	11.5	16.8	100.0
	1974	71.1	8.9	80.0	5.7	4.0	9.7	2.3	8.0	10.3	100.0
	1973	61.1	9.5	70.6	8.7	5.5	14.2	3.7	11.5	15.2	100.0

B. FORECAST

WITH COAL	1984				3,885,237
	1986				4,428,255
	1988				5,541,670
	1990				10,307,185
	1992				11,949,470
WITHOUT COAL	1984				3,127,237
	1986				3,188,105
	1988				3,239,590
	1990				3,357,985
	1992				3,483,874

TABLE 13

GENERAL CARGO

A. HISTORICAL DATA

Commodity	Year	Great Lakes (Domestic)			Canadian			Overseas			Combined Total	% of Total Port Tonnage
		In	Out	Total	In	Out	Total	In	Out	Total		
GENERAL CARGO	1981							35,077	126,186	161,263	161,263	4.3%
	1980							55,582	146,179	201,761	201,761	4.8
	1979		760	760	958		958	82,255	128,089	210,344	212,062	4.4
	1978							87,425	115,909	203,334	203,334	4.5
	1977							87,924	176,891	264,815	264,815	6.8
	1976		1,112	1,112				54,534	171,736	226,270	227,382	6.3
	1975	59,886	2,680	62,566				118,065	168,228	286,293	348,859	9.7
	1974	1,228	4,227	5,455				38,061	129,874	167,935	173,390	4.2
	1973		2,096	2,096				97,005	154,231	251,236	253,332	4.6

B. FORECAST

	1984				200,000	
	1986				215,000	
	1988				232,500	
	1990				251,472	
	1992				272,000	

TABLE 14

TOTAL PORT TONNAGE

[TO BE PROVIDED]

4. REVIEW OF PREVIOUS PORT STUDIES

A number of studies have been done for the port in recent years. Most of these focused on the feasibility of a particular type of cargo or service at the port. This chapter of the report examines those studies, as well as studies done for the state and the city, which have implications for future port development. The studies reviewed include:

A. Coal Transportation to Wisconsin: An Overview (February 1982)

B. Upland Disposal Area Siting Study for Dredged Materials from the Port of Milwaukee (December 1981)

C. The Economic and Financial Feasibility of Constructing and Operating a Grain export Elevator at the Port of Milwaukee (July 1981)

D. Barge Transportation Feasibility and Development Study (December 1980)

E. Feasibility of a Cross-Lake Passenger Auto Air Cushion Ferry Service (August 1980)

F. Proposed Wisconsin Cooperative Elevator for the Port of Milwaukee (May 1980)

G. Feasibility of a Cooperative Port Elevator in Milwaukee (January 1980)

H. Planning for Container Handling: Deep Sea Container Line Service 1980-1985 (January 1980)

I. Market Study of the Port of Milwaukee (March 1978)

J. Port of Milwaukee Evaluation of Potential Container Cargo 1980 and 1990 (August 1974)

K. Port of Milwaukee - Capital Improvements Program (June 1973).

In addition to the synopses provided here, several of the studies are cited in other chapters of this report.

4.A COAL TRANSPORTATION TO WISCONSIN: AN OVERVIEW (February 1982)

Wisconsin Division of State Energy
Department of Administration

The study was undertaken as a joint effort on the part of the Wisconsin Coastal Management Program and the Wisconsin Division of State Energy to identify potential environmental and energy conflicts associated with the impact of expanded coal movements to and through the coastal areas of Wisconsin.

The study projects an increase in coal shipments to Wisconsin from 21 million tons in 1980 to 42 million tons in 1990. The potential also exists for an additional 10 to 15 million tons per year by the mid-1980's for transshipment via the Great Lakes and St. Lawrence Seaway to European export markets.

The Great Lakes coastal areas of Wisconsin are expected to experience the primary impact of the increase in coal movements. Based on projected western coal use at lakeside power plants in Michigan and New York, deliveries to the Superior Midwest Energy Terminal (SMET) are expected to increase from 4.0 million tons in 1980 to 15.4 million tons by 1990. By 1990, more than 30 million tons could be shipped through SMET, a second transshipment terminal in Superior, and proposed terminals in Kewaunee and Southeastern Wisconsin in order to meet the potential demand for industrial and utility use of western coal in the Great Lakes region, and the demand for western coal exports to Europe.

As coal is a bulky, high-volume fuel, coal transportation is a key issue linked to increasing coal demand. The ability of Wisconsin's transportation network to carry the projected increase in coal volumes through 1990 is the focal point of the study. Wisconsin receives coal by rail, by Great Lakes vessel, by river barge, and by truck. The study examines the comparative cost of transportation of the various modes serving the state and the potential impact of these costs on the coal trade in Wisconsin. For each of the modes independently, information in developed on the current operating structure, physical facilities, and the capacity for expansion to meet the projected increase in demand.

The environmental impacts of the various modes are compared and analyzed from the standpoint of shipping requirements, storage, and specific site characteristics in an effort to identify problem areas associated with each of the modes. The study concludes that careful site selection, engineering design, and community impact planning can significantly reduce the potential adverse impacts of expanded coal use in Wisconsin.

4.B UPLAND DISPOSAL AREA SITING STUDY FOR DREDGED MATERIALS FROM THE PORT OF MILWAUKEE (December 1981)

Southeastern Wisconsin Regional Planning Commission
in cooperation with the Port of Milwaukee

The report is a study of the potential for upland alternatives for the disposal of dredged materials resulting from the Port Authority Dredging Program. The Milwaukee Harbor can be considered to consist of distinct hydraulic units--the inner harbor and the outer harbor. The three rivers (Kinnickinnic, Menomonee, and Milwaukee) are polluted, for the most part, throughout their lengths. Yet, it is the inner harbor that is "grossly" polluted with wastewater, sewerage, and decomposing plant life, which is a hinderance to commercial navigation and related activities, and an eyesore for the harbor and Lake Michigan.

It is the intention of the Port of Milwaukee to accommodate the draft of large "salties" which require a 27-foot draft (compatible with the Seaway). The U.S. Army Corps of Engineers (COE) is responsible for maintaining necessary draft requirements, excluding private facilities within the harbor, and to maintain minimum depths within 75 feet of the mooring berths.

In past years, the dredged materials were dumped in deepwater portions of Lake Michigan. Since the prohibition of the above procedure, the polluted dredged materials have been dumped at a confined disposal facility constructed by the COE in 1975. However, this facility is capable of facilitating dredged materials only up until 1985.

Four feasible alternatives for the upland disposal of dredged materials are presented. A fifth solution could be envisioned as a combination of the four principal alternatives. The four alternatives are:

(1) Use of a landfill or lagoon specifically designed for disposing of dredged materials. The estimated capital cost is $3,952,000, with average annual operating maintenance costs of $202,600.

(2) Use of a new or existing general refuse sanitary landfill, with estimated capital cost of $454,000 and annual operating and maintenance costs of $646,000.

(3) Use as a soil conditioner for agricultural land, with estimated capital cost of $771,000 and operating and maintenance costs of $429,000.

(4) Tested and used for filling material in commercial construction. (Estimated capital costs of $378,000; operating and maintenance costs of $186,000).

All four alternatives have been deemed feasible for further extensive analyses. A planning period up to the year 2000 was chosen for the analysis of the four alternatives.

The report presents the recommended considerations with respect to environment, technology, economics, society, and regulations. It was not the purpose of this study to make conclusions or recommendations as to the best alternative.

4.C THE ECONOMIC AND FINANCIAL FEASIBILITY OF CONSTRUCTING AND OPERATING A GRAIN EXPORT ELEVATOR AT THE PORT OF MILWAUKEE (July 1981)

Battelle Columbus Laboratories and
Clayton Brown and Associates

This report addresses the necessary economic and financial factors to assess the feasibility of the construction and operation of a 3.25 million bushel grain export elevator for the Port of Milwaukee. It addresses in detail the

supply/demand of the port's grain market and pertinent transportation systems, and also suggests necessary lessee qualifications and recommendations for financing and managing the venture.

Corn is the dominant grain commodity exported at the Port of Milwaukee with soybeans forecasted to contribute less than 10 percent of total grain exports. The proposed "baseline" operation of a 60 million bushel annual throughput would amount to about 7.5 percent of total off-farm sales of corn in the drawing area (parts of Wisconsin, Iowa and Illinois) in 1985, and 6.6 percent in 1990.

Assuming a financial period of 30 years, 100 percent debt financed, at an interest rate of 10.5 percent, the 60 million bushel annual throughput elevator, with average gross margins of returns at approximately 9¢ per bushel, should be profitable. Even though grain exports for the U.S. are expected to increase steadily (along with the supply in the Milwaukee drawing region), the annual throughput of 60 million bushels will be attainable only if the management lessee guarantees a 30 million bushel per year delivery capability. Battelle feels AGRI industries (currently interested in the proposed elevator) is the most logical, if not the only, potential lessee.

Upon review of two preliminary designs for the elevator by two reputable engineering firms (R.S. Fling & Partners and Axelson Engineering), Battelle estimated total capital costs at $28.8 million in 1982 dollars, which includes the addition of recommended grain dryers and shipping bins.

To be competitive in U.S. exports, the Port of Milwaukee must be able to draw grain from Northern Iowa, due, in part, to transportation costs and the competition of the Port of Chicago, although the construction of the export elevator could stimulate local farmers into producing more corn.

The regional impact on the Port of Milwaukee of the construction of the proposed elevator was assessed at $13.8 million (1978 dollars), including 536 new jobs, while the operating impact was assessed at $1.3 million (1978 dollars) including 76 more jobs. These estimates were based on calculations of simulated

construction and operating revenue models. These estimates assume that the elevator would stimulate production of an additional one million bushels of corn in the Milwaukee drawing region.

There are two sources of funds that should be used to finance the recommended $33,000,000 (suggested capital finance at 10.5 percent interest): bond proceeds and investment income.

In conclusion, the construction and operation of a grain export elevator at the Port of Milwaukee can be profitable if certain baseline operating conditions are met. Furthermore, it is recommended that the Port of Milwaukee initiate detailed engineering designs, further environmental and economic impact analyses (if deemed necessary), and contractual negotiations with potential lessees.

4.D BARGE TRANSPORTATION FEASIBILITY AND DEVELOPMENT STUDY (December 1980)

Booz•Allen & Hamilton, Inc.

This study analyzed the feasibility of four potential barge services at the Port of Milwaukee.

The study found there is a potential market for a waterline feeder service between Milwaukee/Chicago and Montreal provided it was a reliable, frequent, year-round service at a cost below $550/container and a transit time less than one week. A chartered, self-propelled, 300-TEU capacity, foreign flag ship was suggested for the service.

A Ro/Ro cross-Lake Michigan trailer service was found to be feasible on a cost basis, but it was felt the trucking industry may impose institutional barriers that would interfere with its development. A barge towed astern was found to be the more economical system for such a service.

Barge service between Milwaukee and other Lakes ports and/or Milwaukee and the Mississippi River System was found to have limited potential due to a need for very large lot sizes to obtain lakewise barge cost savings, the high cost of Lake-certified river barges, and restrictive bridge clearances on the Illinois Waterway in Chicago. There is some market for irregular barge services for steel movements from Chicago or heavy-lift export movements to the Gulf of Mexico.

4.E FEASIBILITY STUDY OF A CROSS-LAKE PASSENGER AUTO AIR CUSHION FERRY SERVICE (August 1980)

Transportation and Economic Research Associates, Inc.

The study was undertaken to determine the feasibility of a high-speed passenger/automobile ferry service across Lake Michigan, serving the Port of Milwaukee. The study was prepared in two distinct phases. Phase I determined the market potential of the proposed ferry system, while Phase II determined the financial feasibility.

Phase I

To establish a base year for the market potential forecasts, TERA conducted a traffic survey representative of the potential users at key locations in the Lake Michigan area. The results of the survey indicated that 57.6 percent of the respondents would use the ferry service. The traffic survey also determined the sensitivity of the potential passengers to the frequency, speed, and fares of the proposed ferry system. Because the results of the gravity-flow model analysis did not conform to the empirical data, TERA made projections by demographics and data obtained from the 1977 Census of Transportation. However, the estimated demand of passengers/autos is insensitive to prices equal to or below $18/auto and $10/passenger, yet the system revenues would be maximized at the $20/$21 level (which is compatible with fares of existing ferries).

Phase II

Based on conclusions established in Phase I, it is determined that the proposed ferry system should be tailored to the high-speed, premium market; in other words, the proposed ferry system should operate frequently at high speeds with premium fares.

This recommendation limited the vessel type considerably. Through further analysis of costs (constructional and operational), ice transiting capabilities, speed, and necessary channel depths, conclusions were drawn that the Air Cushioned Vehicle (ACV) type vessel was optimum for the proposed system. In particular, the choice was a pair of British Hovercraft Corporation SR.N4MK3 "Super 4" ACV's or equivalent.

It was also concluded that the optimal service frequency was two hours. Furthermore, in order to conform with normal traffic patterns, the recommended service hours were 7 a.m. to 7 p.m.

Based on conclusions drawn from financial analyses and traffic patterns, Grand Haven was the recommended market in Michigan, with Milwaukee serving the Wisconsin side.

The estimated cost for the first year's operation of the ferry system was $62.2 million. This estimate ("bottom-line" of a detailed cost breakdown) was primarily based on costs experienced by comparable equipment presently in service. Based on analysis of fare structures of existing ferry systems, as compared and contrasted with the Lake Michigan premium service market, the fares were set at $33.33 per automobile and $11.10 per passenger. It was concluded that the ferry system would operate at a net loss until 1992, and finally begin to make a profit (including investment amortization) in the year 2000.

The study concluded that the proposed ACV ferry system would not be attractive to private enterprise unless it were eligible for some type of assistance or subsidy.

4.F PROPOSED WISCONSIN COOPERATIVE ELEVATOR FOR THE PORT OF MILWAUKEE (May 1980)

R.S. Fling & Partners, Inc.

This study was prepared to assist the Port of Milwaukee in evaluating the feasibility of a new cooperative elevator and shiploading facility. In addition to the study, preliminary ideas for the proposed facility were depicted in preliminary design drawings. An outline of the design criteria set forth by the Port Director and potential lessees is as follows:

Rail Receiving:	40,000 BPH
Rail Loadout:	40,000 BPH
Truck Receiving:	2 Truck Dumps at 20,000 BPH each
Storage:	3,250,000 — 1,000,000 Bu. Hoppered Concrete Silo; 2,250,000 Bu. Steel Tanks
Shiploading:	80,000 BPH
Drying:	5,000 BPH
Cleaning & Weighing:	80,000 BPH

The proposed design site consists of approximately 13 acres of land, with Greenfield Avenue, the Kinnickinnic River, and the C&NW Railroad right-of-way as the boundaries. This location allows easy access by road, rail, and water (with a 27-foot draft). However, the design site is not large enough for sufficient rail track to be constructed to store 100 to 125 rail cars; instead, space was allocated for 79 rail cars on site, with additional requirements to be located in rail yards off the site.

The proposed design system accounts for regulatory safety measures, along with an essentially "dust-free" environment for the employees. Considerations were also given to "other than grain" cargo facilities.

The operation of the proposed facility would be essentially remotely controlled from control rooms, such as an automatic microprocessor-based bulk weigher and possible automatic grain samplers.

The estimated cost of constructing the proposed facility was based upon prevailing costs of a similar facility built in the summer of 1980. The total estimated cost was assessed at $24,804,000, excluding engineering fees. This estimate includes a 10 percent contingency factor to help avoid budget overruns.

4.G FEASIBILITY OF A COOPERATIVE PORT ELEVATOR IN MILWAUKEE (January 1980)

Cooperative Marketing and Purchasing Division
Economics, Statistics, and Cooperatives Service
U.S. Department of Agriculture

The study was conducted to determine the feasibility of cooperatives constructing and operating a port elevator in the Port of Milwaukee. The two existing elevators in Milwaukee (owned by Continental Grain Co. and Cargill, Inc.) are very old, and have relatively small storage capacity.

There are several grain marketing problems facing southern Wisconsin cooperatives, namely: slow unloading at the two port elevators in Milwaukee; excessive turnaround time for trucks to Milwaukee; inadequate storage capacity; and relatively low bids at times.

The cost of a new 3-million bushel concrete port elevator is estimated at $28 million for 1982. Based on an assumed 9¢/bushel net margin and 20-year financing at 9 percent interst, the breakeven annual throughput would be 74.5 million bushels (40 million bushels greater than the most optimistic projection for 1982).

It was established that the Wisconsin study area (as defined in the report) would be the major source of grain for a new elevator. Projections state that there will be steady increases in production of corn (corn being the major grain exported in Milwaukee). Projections also show that Great Lakes exports of grain will continue to increase with U.S. exports.

Milwaukee currently has a 5.8 million bushel capacity with two elevators, whereas Chicago (Milwaukee's major competitor in the Great Lakes region) has a 51.9 million bushel capacity with 6 elevators. There are several problems associated with grain exports in Chicago that make Milwaukee the more favorable location—for example, lakers dislike the navigational hazards associated with Chicago channels. Yet, Chicago grain exporters have much more competitive bids for corn because of the abundance of elevators. River terminals in the Milwaukee drawing area barging grain to the Gulf are also competitors—although it is possible that the Gulf has been saturated with shipments in recent years, which is favorable to Milwaukee.

The report concludes that, at the time of the report (January 1980), it was not feasible to construct and operate a new cooperative port elevator at Milwaukee. Recommendations are made for future studies if conditions warrant, and to initiate negotiations with cooperatives for possible joint endeavors for operating a new port elevator, should it become feasible.

4.H PLANNING FOR CONTAINER HANDLING: DEEP SEA CONTAINER LINE SERVICE 1980-85 (January 1980)

PRC Harris, Inc.

This report examines several parameters concerning the potential of a container line service for the Port of Milwaukee. It also develops a facility scheme and equipment requirements for adapting the port for container vessel handling capabilities. The facility scheme is recommended to be accomplished within one year's time, also minimizing cost.

The Port of Milwaukee presently does not have facilities specifically designated or designed for container handling. The development of such facilities is hampered by the lack of available open space in the vicinity of berthing areas. The development is also restricted by environmental requirements—e.g., container vessel berths should be in relatively calm water. The recommended berthing location is the city heavy-lift dock.

The recommended siting of container storage is 8-9 acres located immediately behind the heavy-lift dock, now occupied by C&O Railway, who is acting to discontinue service to that area.

The forecasted container storage inventory is 630 container units--with slight fluctuations over time—which require an initial area of some 8 acres. Initial traffic forecasts include 448,300 tons carried by Manchester Line and Deep Sea Container service. The estimated cost of port modification is $4.6 million. This includes the C&O area and procurement of necessary equipment.

Container storage expansion can be accommodated between the elevated interstate highway and the switching yards currently occupied by municipally-owned tank farms.

4.I MARKET STUDY OF THE PORT OF MILWAUKEE (March 1978)

Simat, Helliesen & Eichner, Inc.

The purpose of this market study was to develop profiles of current and potential users of the port and make recommendations on how to improve the market penetration of the port. The research effort included an extensive literature search and data base review, field interviews, and a mail survey.

The study conclusions centered around seven key areas:

1. The port hinterland which was shown to include the States of Wisconsin, Minnesota, Iowa, Illinois, Missouri, Nebraska, South and North Dakota, within a 375-mile radius of the port.

2. Current users are primarily in Wisconsin, with smaller shares from Minnesota and Illinois. They are primarily exporters of general and breakbulk cargoes.

3. Potential users are also primarily Wisconsin firms, many of whom had once used the port.

4. The shipper requirements in selecting to use a port include door-to-door costs, port handling equipment, port storage facilities, security, the efficiency of port personnel, sailings and service/carrier selection, and year-round service.

5. On the Lakes, Chicago is the chief competitor of Milwaukee for most types of cargoes, and Duluth is a competitor for grains. New York, Baltimore and New Orleans are primary coastal competitors.

6. Milwaukee is regarded as a clean, convenient and efficient port. Port competitors offer more diverse and regular service to a wider range of markets.

7. The greatest market potential for the port appears to be in agricultural products and machinery.

The study then provided long-range planning recommendations in the areas of services and facilities, a marketing program, and ongoing research.

4.J PORT OF MILWAUKEE EVALUATION OF POTENTIAL CONTAINER CARGO, 1980 AND 1990 (August 1974)

James C. Buckley, Inc.

The study evaluates long-term requirements for facilitating container traffic for the Port of Milwaukee. The report takes into consideration recent developments in container technology and associated economics of energy and containerization. A major source of data for the analysis was Port of Milwaukee - Capital Improvements Program prepared by Tippetts-Abbett-McCarthy-Stratton (TAMS) in June 1973.

The container-handling capacity of present facilities in Milwaukee—480,000 tons—is sufficient to meet projected traffic—260,000 tons—in 1990. Present facilities are capable of handling even the most optimistic projection for 1990 —380,000 tons.

Potential for large increases of container traffic in the Great Lakes is hampered by the development of containerships too large to transit the Seaway and the economics of underutilized coastal ports. For the most part, the potential for container traffic in the Great Lakes/St. Lawrence Seaway System is limited to serving as a feeder route to the major ports of Montreal and Halifax. Furthermore, it is not anticipated that recent developments concerning the economics of energy have any significant impact on the future of container traffic.

4.K PORT OF MILWAUKEE - CAPITAL IMPROVEMENTS PROGRAM (June 1973)

Tippetts-Abbett-McCarthy-Stratton

This study was conducted to assess the need for physical improvements to existing port facilities, based upon the physical and economic requirements of the Municipal Harbor Terminal at the Port of Milwaukee in relation to other competing port operations.

The study begins by describing existing facilities and operations. Most of the municipally-owned facilities are located on Jones Island, on the west side of the mooring basin, or at the North Harbor. The port is served by steamship lines providing service the world over and has ample rail access and improving highway access.

The study projects that general cargo will increase from 691,000 tons in 1971 to 1,125,000 tons in 1990. However, except for some slight improvements recommended for the general cargo terminals to increase operating efficiency, no major improvements are expected to be necessary until 1985. At that time it is anticipated that a new container terminal with a 200,000 ton capacity will be needed. Four alternatives were investigated, and a North Harbor location was recommended.

Although a new container facility will not be required until 1985, the study notes that accelerated implementation could attract additional cargo volumes to the area, above those quantities currently forecasted.

The study concludes by stating that the current leasing practices appear reasonable, and develop a reasonable return for the city. The study notes that the harbor facilities currently require subsidies and will continue to do so in the future, but estimates they are small in comparison to the benefits that the port operation contributes to the city.

5. INTERVIEW/SURVEY PROGRAM

Through a combination of personal interviews, telephone interviews, and mail surveys, the research team obtained data and information from a select sample of companies, organizations, and individuals with an interest in the port and its future. The results of the survey/interview program are presented in tabular form and an analysis of each respondent category is provided.

5.A PURPOSE

The purpose of the program was to elicit ideas and opinions on:

- Anticipated trends or changes in cargo flows and service/ facility requirements;
- Value of the port as a city, regional and state resource;
- Current and future use of waterfront propeties; and
- Administrative structure of the Port.

5.B PROFILE OF RESPONDENTS

A complete list of persons contacted during this phase of the study is provided in Appendix B. The number of respondents in each category is shown in Table 15.

Of those categorized as "port users", twenty had used the Port of Milwaukee in the past, ten are current users, and ten expect to use the port in the future. The current users are profiled in Table 16.

TABLE 15

NUMBER OF RESPONDENTS BY CATEGORY

Category	Number
Exporter	16
Importer	10
Non-User Industry	1
Railroad	7
Motor Carrier	-
Lake Carrier	-
Saltie	1
Customs Broker	3
Freight Forwarder	8
Port Personnel	10
Terminal Operator	2
Port Tenant	8
Labor Union	1
Government:	
City	8
County/Region	2
State	1
Federal	-
Civic Organizations	4
Banks	2
Attorneys	2

Note: Where appropriate, respondents have been included in more than one category.

TABLE 16

CURRENT USES OF PORT SERVICES/FACILITIES

Type of Cargo	Export (No. of Responses)	Import (No. of Responses)
Container	11	7
Breakbulk	7	1
Liquid Bulk	3	-
Dry Bulk	2	3
Ro/Ro	1*	-
Heavy Lift	4	-
Other	1	-

*If available.

5.C FUTURE OF THE PORT

All those surveyed were asked what types of services they felt were likely to have the greatest potential in the future operation of the port. The responses, summarized in Table 17 would seem to indicate the port should continue to serve the region's heavy equipment industries and look to expand its agricultural services/facilities.

TABLE 17
PROJECTED SERVICE REQUIREMENTS

Type of Service	No. of Respondents
Grain/Agriculture	24
Heavy Equipment	8
Container	4
Coal and Other Dry Bulk	3
Breakbulk	2
Liquid Bulk	1
Project Cargoes	1

The respondents were evenly divided in evaluating the importance of the port to the city, region, state, and industries. Eighteen felt it was very important and nineteen felt it was somewhat important. Only one respondent felt the port was unimportant and therefore dispensable.

Most respondents felt the waterfront areas in the immediate vicinity of Jones Island should be reserved for port activities and/or port-related industries. Few felt there was a present need to acquire and/or expand into adjacent areas currently or projected for recreational use. Despite this finding, most did feel there is an urgent need for more comprehensive and coordinated planning of waterfront land use. Currently, there is no formal means of communication or coordination among the agencies responsible for commercial, recreational, cultural, and transport uses.

5.D ADMINISTRATION OF THE PORT

The overwhelming majority of those surveyed felt the port could be administered more effectively and efficiently if it were organized as some type of autonomous regional authority. The reasons for this belief were varied, but the predominate arguments for a change in administration were:

- The port provides a service not only to the city, but to the region and state as well. The broader geographic area should be represented and provide a broader base in the operation of the port.
- A significant share of port users are outside the city and, as a result, have no real voice on the way the port is administered.
- As an agency of the city, port appointments and port-related issues have become too political.
- The port needs to operate like a business and port personnel should be selected and evaluated on their ability to promote and run that business.

When asked to specify what form of administrative structure they would recommend, the respondents made the following suggestions (see Table 18):

TABLE 18

ALTERNATIVE ORGANIZATIONAL/ADMINISTRATIVE STRUCTURE FOR THE PORT

Structure	No. of Respondents
Autonomous Regional Authority (Port Only)	17
Autonomous Regional Authority (with Airport)	10
County/Regional Agency	2
State Agency	2
Waterfront Development Agency (includes commercial, recreational, cultural uses)	2
City Agency (as is)	0

The future alternative administrative structures for the port are discussed in greater detail in Chapter 6 of this report.

5.E CONCLUSIONS

Because of the number and variety of persons interviewed, the study team was exposed to widely divergent interests and opinions regarding the port and waterfront land use. Nevertheless, a number of sound conclusions can be drawn from the findings:

- Although cargo volumes have declined, the port is still regarded as an important resource for the city, region, and state.
- The types of cargoes moving through the port and the services/facilities required over the next ten years are changing. The port must shift its emphasis to those cargoes which can move most efficiently and economically by water.
- The port continues to have little public recognition. Both the public and private sector need to be made aware of the port's operations, capabilities, and importance to the area transportation network.
- There is a need to change the administrative and organizational structure of the port.

The information and opinions offered during the survey/interview program were an important factor in the recommendations presented in the remainder of this report.

6. EVALUATION OF PORT ORGANIZATIONAL STRUCTURE

6.A EXISTING

The port itself consists of both private and public facilities and lands. The public lands and facilities are managed by the Port of Milwaukee, U.S.A., a city agency governed by a seven-member Board of Harbor Commissioners appointed by the Mayor for three-year terms. The Board of Harbor Commissioners oversees the policies, promotion, and programs of the port. The city agency maintains a professional staff of marine specialists, administrators, engineers, and traffic experts to administer the day-to-day operations of the port.

The current organization for the Port of Milwaukee is shown in Table 19.

In the latest record year, 1981, the Port of Milwaukee had operating revenues from all sources of $1,330,751 and expenses for maintaining staff and facilities of $1,717,096. For 1981 the port suffered a net operating loss of $863,363 (of which $477,018 was for depreciation). The actual city subsidy amounted to $386,345.

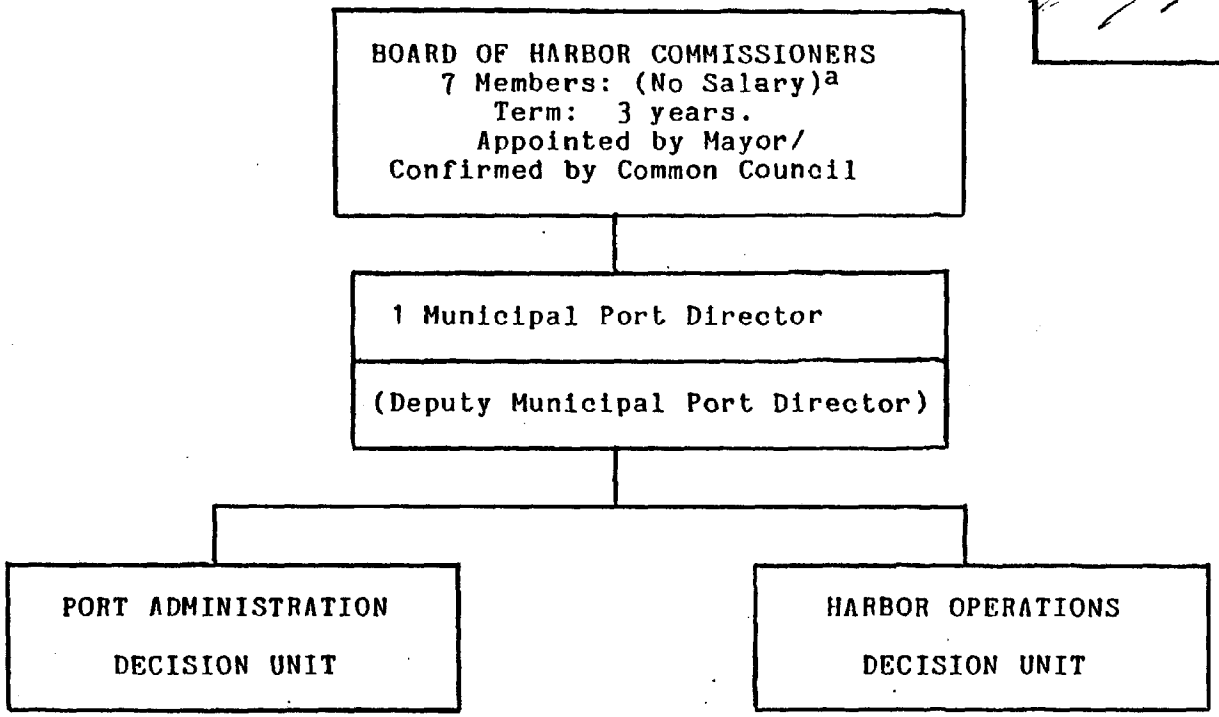
The incoming revenue in 1981 can be divided into seven general sources, as follows:

	Percent
Land and Building Rental	48%
Track Rental and Maintenance	8
Billable Equipment	14
Billable Labor	3
Billable Utilities	5
Wharfage/Dockage/Mooring/Access	21
Miscellaneous	1
	100%

TABLE 19

ORGANIZATION CHART FOR PORT OF MILWAUKEE

DEPT: PORT OF MILWAUKEE
DEPT. HEAD REPORTS TO:
BOARD OF HARBOR COMMISSIONERS
DEPT. HEAD APPOINTED BY:
BOARD OF HARBOR COMMISSIONERS
DEPT. HEAD SIGNATURE:
DATE: APR 25 1982

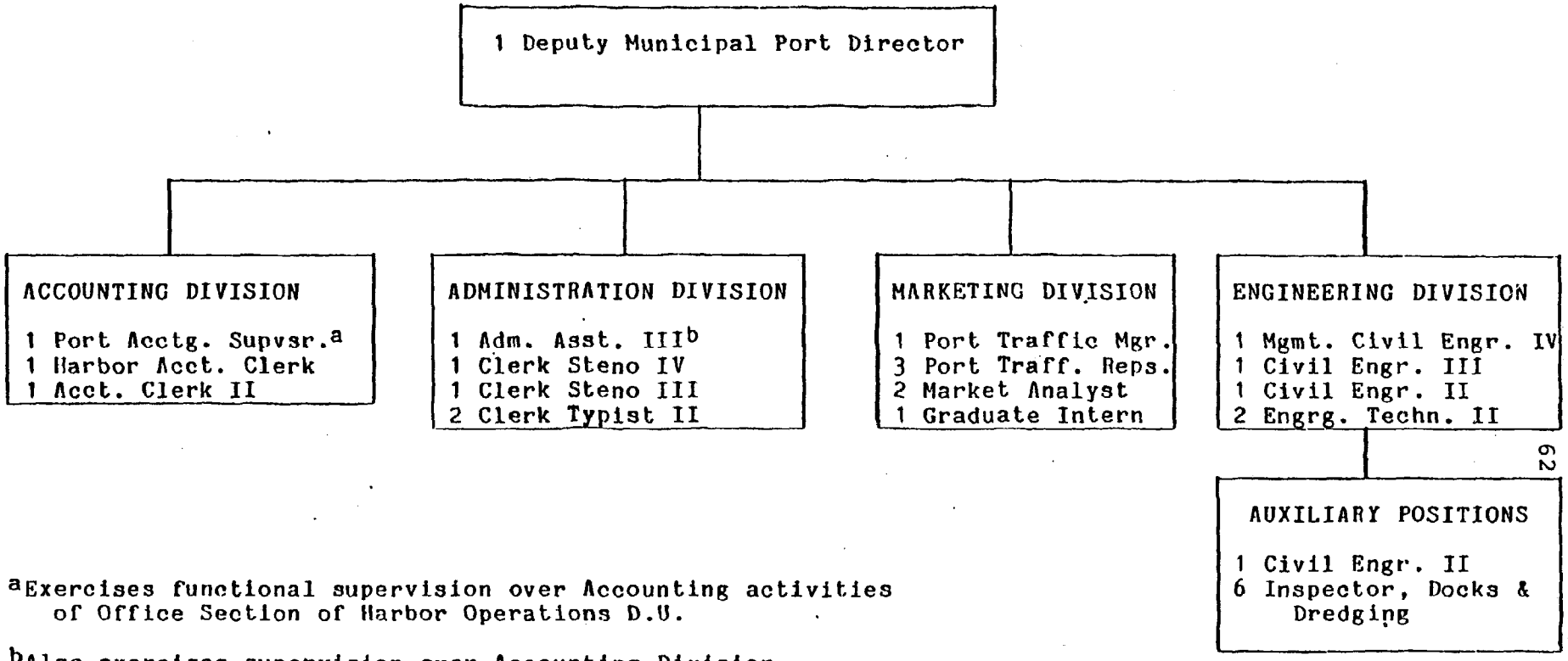


aAuthority: Wisconsin Statutes, Section 30.37

TABLE 19 (Continued)

DEPARTMENT: HARBOR COMMISSION

DECISION UNIT: ADMINISTRATION



[a]Exercises functional supervision over Accounting activities of Office Section of Harbor Operations D.U.

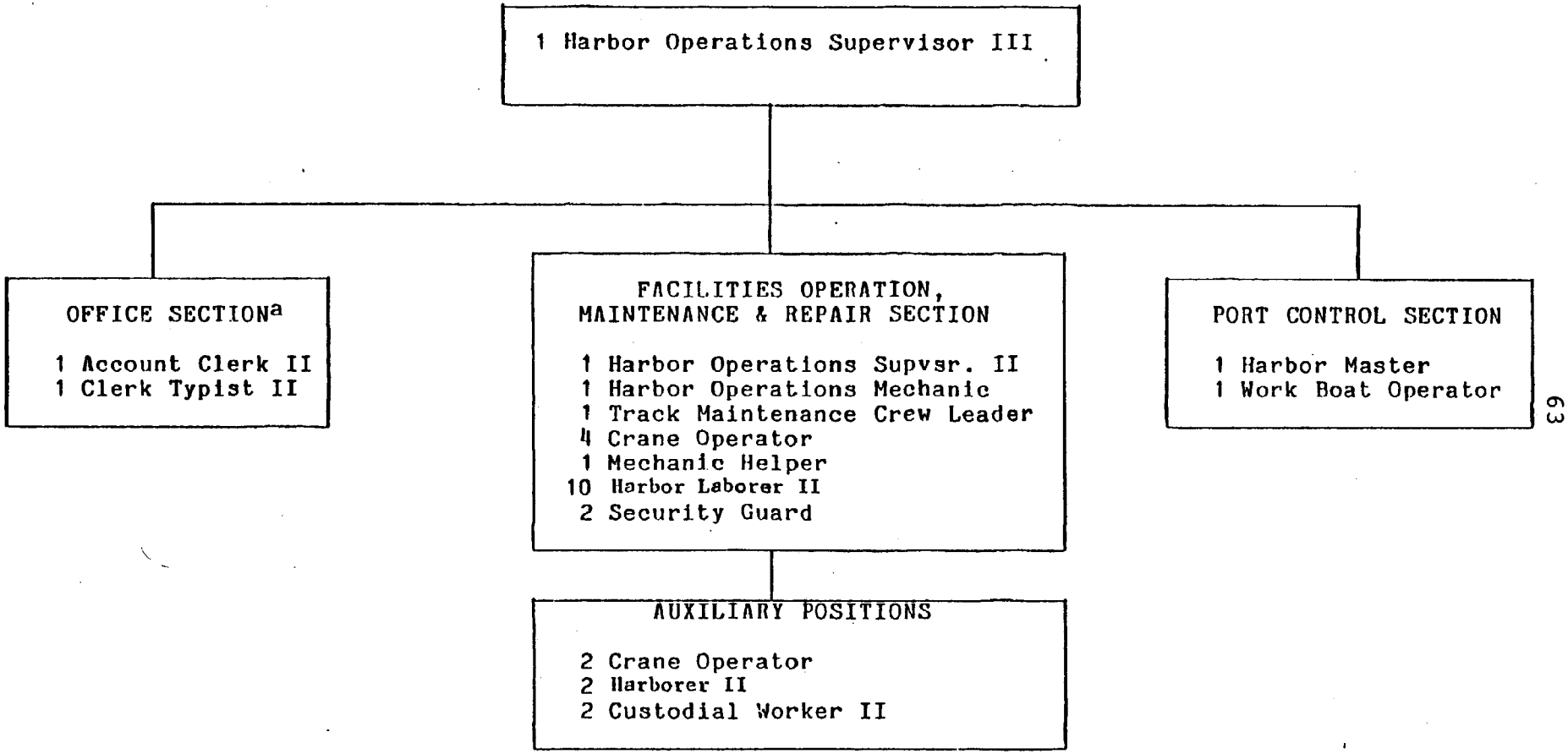
[b]Also exercises supervision over Accounting Division in absence of Port Accounting Supervisor

D.U. MANAGER SIGNATURE

TABLE 19 (Continued)

DEPARTMENT: HARBOR COMMISSION

DECISION UNIT: HARBOR OPERATIONS



[a]Port Accounting Supervisor (Administration D.U.) exercises functional supervision over Accounting activities of Office Section.

D.U. MANAGER SIGNATURE _____

The expenses can be classified generally as:

	Percent
Administration	
Executive	8%
Office/Accounting	12
Marketing	16
Engineering	8
Miscellaneous	1
Operations	
Management	7
Maintenance and Repair	42
Miscellaneous Services	6
	100%

The staff roster of the Port of Milwaukee consists of the positions, classifications, and numbers shown in Table 20.

6.B EVALUATION OF CURRENT STRUCTURE

There is little doubt that the structure under which the Port of Milwaukee is organized has served the City of Milwaukee well in the past. Its association with the city and its organizational structure is logical and functional. The individuals who have served the port staff have done so with distinction and are generally held in high esteem by the Milwaukee business and civic communities. However, times have changed, not only for Milwaukee, but for the Great Lakes Region and the nation as a whole. The City of Milwaukee, like many of its sister cities on the Great Lakes, is suffering economic re-adjustment. Many mature industries are failing or moving on to more efficient facilities in the southeastern and southwestern U.S. The current recession has accelerated this adjustment. As a result, the City of Milwaukee finds itself with a declining population, from 710,400 in 1970 to 623,300 in 1981.[1/] The tax base is declining but the demand for city services remains high. The result is a continuing squeeze on city revenue.

1/ Sales & Marketing Management, 1971 Survey of Buying Power (10 July 1971) and 1982 Survey of Buying Power (26 July 1982).

TABLE 20

PORT OF MILWAUKEE STAFF

Title	No. of Positions Total	Vacant	Current Payroll
Harbor Commissioners	7	(1)	Unpaid
Municipal Port Director	1	-	1
Deputy Municipal Port Director	1	-	1
Administrative			
Administrative Assistant III	1	-	1
Clerk-Stenographer IV	1	-	1
Clerk-Stenographer III	1	-	1
Clerk-Typist II	1	-	1
Clerk-Typist I	1	-	1
Accounting			
Port Accounting Supervisor	1	-	1
Harbor Accounting Clerk	1	-	1
Accounting Clerk II	1	-	1
Marketing			
Port Traffic Manager	1	-	1
Port Traffic Representative	3	(1)	2
Market Analyst	2	-	2
Engineering			
Management Civil Engineer IV	1	-	1
Civil Engineer III	1	-	1
Field Section			
Civil Engineer II	1	-	1
Engineering Technician II	1	(1)	-
Engineering Technician I	1	-	1
Auxiliary Positions			
Civil Engineer II	1	(1)	-
Inspector, Docks & Dredging	6	(6)	-
Harbor Operations			
Supervisor III	1	-	1
Harbor Office Section			
Accounting Clerk II	1	-	1
Clerk-Typist II	1	-	1

TABLE 20 (Continued)

Title	No. of Positions Total	Vacant	Current Payroll
Cargo-Handling, Maintenance and Repair			
Harbor Operations Supervisor II	1	-	1
Crane Operator	4	(1)	3
Operations Mechanic	1	-	1
Track Maintenance Crew Leader	1	-	1
Signal Maintenance Worker	10	(3)	7
Mechanic Helper	1	-	1
Security Guard	2	-	2
Port Control			
Harbor Master	1	-	1
Work Boat Operator	1	-	1
Auxiliary Positions			
Crane Operator	2	(2)	-
Signal Maintenance Worker	2	(2)	-
Cust. Worker II	2	(2)	-
TOTALS	59	(19)	40

Under a scenario of increasingly severe budget shortfalls, it will be only a matter of time before the city begins to see the port as a financial liability or perhaps even as a source of funds from either land rental or the outright sale of port-owned lands. While the latter action would be regrettable in our opinion, there is some sentiment that a port in Milwaukee can survive without an overseeing agency of any type, and that lands currently owned by the city should be placed in private ownership. However, this is not the prevailing mood.

The study team conducted a series of interviews with port users and tenants concerning the future development and organization of the port. The interviews (see Appendix B for a list of interviewees) were specific on the question of port organization. Chapter 5 discusses the results of the interviews,

The interviewees, primarily past or current users of the Port of Milwaukee, universally see the port as an important asset for the city. When asked to recommend an alternative organization, none of those answering the question thought a city agency should be retained. Most of those asked thought some form of autonomous port authority was desirable.

Many of those interviewed had revealing comments on the current organization of the port. While not at liberty to identify individual interviewees, the following selected quotations provide a basis for additional thought. These are opinions and, while some may be unfair and/or inaccurate, they do represent, at the very least, the perception of the port organization by an important group —the port customers.

- There is not enough industry representation on the Board of Harbor Commissioners.
- The port has adequate facilities, but lacks a real selling capability.
- The Harbor Commission is not based broadly enough. There must be input from region and state.

- The port is impeded by its current administrative structure; it should be allowed to operate like a business.
- The port needs more effective sales and marketing personnel.
- Take it away from the city.
- The port is critical to at least ten industries. Without the port, even more of these operations would leave Milwaukee.
- Port staff must have the freedom and resources to sell. Could not understand criticism of staff for lunching with shippers, compared with expense accounts for other ports, particularly New Orleans.
- Much of the industry which depends on the port is outside the city and has no aldermanic representation. As a result, the Mayor and Common Council and are not concerned about industry or the port. The public doesn't care about or, at best, does not know about the port and the degree to which key industry depends on it.
- The Port of Duluth succeeds with a staff of twelve; why does Milwaukee need a staff of 41?
- The port definitely should not be an agency of the city. The Mayor traditionally appoints people to the Boards where they have no knowledge.
- The city has been sympathetic to the port, but it needs a broader funding base.
- The Commission is too political.
- The Commission has authority over more than the downtown waterfront right now, but does not exercise it. DCD has some

jurisdiction. There is no formal mechanism for collaboration among the agencies. The result is conflict.

- The North Harbor decision was not in the port's interest. Many other sites are suitable for Summerfest. At least, Summerfest should pay commercial rates for the land. They now pay only $1 per year.

- The elevator project failed due to politics and economics.

- The port authority should retrench and reduce overhead. Also, they need a new charter. What are they supposed to be doing?

- Feel the port is hindered by the fact it is a city agency—would be better as a regional or state agency. The problem is the city is protective of what it has, despite the fact that the port cost the city nearly $800,000 last year.

- Milwaukee must stay ahead of Chicago. It currently has lower longshore rates and better productivity. It should advertise productivity.

- Not impressed with port sales effort. Carriers get no help from the port. The Port of Milwaukee should have part-time resident salespeople in Chicago, St. Paul, Peoria, and Moline. They need to do better on reefer cargo.

It is clear that events and circumstances have perhaps made the municipal department form of port administration inappropriate for Milwaukee. The study team has concluded that some type of change is justified. In the pressure of modern city management, it is easy to lose sight of the commercial importance of the port. The Great Lakes cities all owe their existence to their waterfront locations and their ability to accommodate port facilities during the westward settlement of the nation. Water continues to be the low cost form of domestic transportation for those communities located on navigable waterways. In the future, there will be greater, not less, reliance on water transportation, because

fuel will continue to rise in cost relative to other goods and services. Transportation consumers will increasingly seek out the low cost mode. While motor carrier transport has made significant inroads into traditional rail and waterway traffic, this trend has been arrested and will reverse in the years ahead. Increasing fuel costs, highway congestion, and a deteriorating highway system will cause significant inefficiencies in the nation's motor carrier system. Railroads, while they are gaining traffic through more favorable regulation, will be reduced in absolute numbers and miles of track through mergers and abandonment. The result will undoubtedly be a healthier private railroad system, but reduced levels of intra-mode competition. It is important, therefore, that port cities preserve and improve their waterfront facilities and not be lulled into thinking water transport is a technology of the past. Water transport will resurface in the coming decade as a significant factor in both domestic and international commerce.

The responsibility for promoting, stimulating, and developing the port cannot rest solely on the shoulders of the City of Milwaukee. The port is a regional, state, and city asset, and should be directed and supported with regional participation. For instance, in 1963 it was shown the port provided 2.70 percent of the total income for Milwaukee and 2.36 percent of the income of the total Milwaukee SMSA. This analysis went on to say that the port provided the ultimate source of income for 9,168 families.

A recent economic impact study entitled Economic Impact Study, The Effects of Waterborne Commerce on the Community: A Four-County Standard Metropolitan Statistical Area Study," concluded that the port provided jobs and income for the four-county Milwaukee SMSA which includes Waukesha, Ozaukee, Washington and Milwaukee counties. The study concluded that the port's total impact on the four-county area amounted to 5,825 jobs, $112,583,000 in payrolls, and $1,074,141,000 in industry receipts.

City administration of port activities is out of tune with the times. Milwaukee's municipal management form of port administration was considered outmoded even in the 1950's. For instance, Marvin Fair, in his book Port

Administration in the U.S. (Cornell Maritime Press, 1954) commented on his survey of port administrations:

> The survey reveals that only a few waterfront port areas now rely upon an agency of a municipality or a county to bear the principal responsibility of the port. There are 11 of these ports among the 56 ports studied, including Jacksonville where the City Commission has direct control.

The book lists eight of the eleven as follows:

- Port and Harbor Commission, Department of Public Service, Cleveland, Ohio
- Bureau of Port Operations, Department of Commerce of Philadelphia
- The Department of Public Works, City of Chicago
- The City Commission of Jacksonville, Florida
- The Department of Port Operations and Development of Miami, Florida
- The Board of Harbor Commissioners, City of Milwaukee, Wisconsin
- The Department of Marine and Aviation of the City of New York
- The Bureau of Harbors of Baltimore, Maryland

Significantly, nearly thirty years later, of the eight listed, only the Port of Milwaukee retains a municipal agency form of responsibility and control.

In summary, the City of Milwaukee should relinquish control over the port to another, more suitable form of administration, for the following reasons:

- The city cannot afford to augment port revenues as necessary to ensure continued port development.
- The port serves the needs of a broad industrial and agricultural hinterland that should play a role in directing the activities of the port. A commission appointed exclusively by the Mayor of Milwaukee must, by political necessity, exclude many of those who have the most to contribute.

- The port is a valuable regional asset that must be managed as a business, without political pressure. This can best be accomplished through autonomous management. For instance, many of the marketing activities engaged in by private industry and competing port authorities are inappropriate for a city organization dependent on tax revenue.

- Personnel decisions must be made on the basis of changing staff requirements and productivity and should therefore not be tied to a civil service system.

6.C ALTERNATIVE ORGANIZATIONS

There are many types of alternative organizations that could be established to govern and promote the Port of Milwaukee. Basically, the spectrum of alternatives is as follows:

- Public Corporation - Multi-state
- Public Corporation - State
- Public Corporation - Region
- Public Corporation - Municipality or County
- Independent Commission - State
- Independent Commission - Region
- Independent Commission - Municipality or County
- State Department
- Municipal or County Department
- Private Corporation

The basic differentiation in the types of organizations is discussed below.

Public Corporation (The Authority)

The public corporation approach is the most popular type of port administration in the U.S. This type of organization is a non-stock, non-profit public corporation created by statute with a legal personality of its own. The

corporation normally has the right to hold property, make contracts, adopt budgets, employ its own personnel, and function with financial autonomy.

One definition of a public corporation as it applies to a port authority is attributed to Austin J. Tobin, a past director of the Port of New York Authority:

> . . . a public corporation set up outside the regular framework of federal, state, or local government, and freed from the procedures or restrictions of routine government operations, in order that it may bring the best techniques of private management to the operation of a self supporting or revenue producing public enterprise.

The public corporation is recognized as an artificial person by the courts. It may sue and be sued, incur debt, enter into contracts, and issue securities under its corporate charter.

Politically, the corporation may exercise varying degrees of independence, depending on the scope of the corporate charter. For instance, the corporation may be independent but subject to the veto power of a governor or a legislative body.

In general, the bi-state port authorities such as the Port Authority of New York and New Jersey have used the corporate approach, as have some state authorities, such as the Virginia Port Authority.

Generally, the corporate port authorities are governed by commissioners appointed by state governors, county supervisors, city mayors, or a combination. In some cases the commissioners are elected. In most cases, commissioners are elected or appointed to staggered terms of three years.

The advantages of the public corporation are:

- It can be created to provide a reasonable amount of autonomy.
- It can hold property, make contracts, adopt budgets, and employ its own personnel.

- It is insulated from local political influence.
- It can issue bonds and borrow money as necessary to stimulate facilities development.
- It can draw its commissioners from across city or state boundaries as necessary.

Independent Commission

The independent commission is a less popular form of port administration that is widely employed by the Federal Government, state governments, and many municipalities as a means of regulating public utility industries. For instance, the Interstate Commerce Commission and the Federal Maritime Commission are examples of federal commission regulation. The use of an independent commission often assumes there will be some degree of regulatory power vested in the organization.

There are important differences between the independent commission and the public corporation. For instance, the independent commission cannot sue or be sued and cannot issue securities under its own name. Generally, an independent commission can acquire land and facilities, employ condemnation proceedings, plan economic development, construct facilities, and regulate private terminals.

The advantages of this type of port organization are:

- It is independent and insulated on from political influence;
- It can accept public monies in a routine manner;
- It can regulate as a governmental unit;
- It can plan, issue tariffs, and condemn and annex property.

The independent commission also has significant disadvantages:

- It usually employs civil service personnel and is constrained in its activities to government-type activities.
- It cannot issue securities.

Government Department

The governmental department is the type of port administration currently employed by Milwaukee and until the turn of the century (1900), it was the most popular form in the U.S.

The departmental agency may be governed by an executive directly responsible to the governor or mayor or may be responsible to a commission appointed by the governor or mayor.

The primary reason this form of organization has fallen into disfavor is its inflexibility. For instance, it is constrained in its scope to the political boundaries of a city or state when, in fact, the port's customers may be from many states and even countries, as in the case of Montreal.

To summarize, the primary disadvantages of a governmental department form of port administration are:

- It cannot issue securities or borrow money in its own right.
- It is highly political.
- Its support and governing base are restricted to the political boundaries of the unit of which it is a part--i.e., state, county, city.

The primary advantage of this type of administration is the ease through which it can accept public monies for port development. (However, this is an advantage only if the political jurisdiction has adequate funding.) Also, this form of administration allows for improvements to be made through general obligation bonds that are backed by the full faith and credit of the government unit. Usually such bonds, with their recourse to general tax revenues, can command a lower interest rate.

Private Port Corporation

This form of port administration is not to be confused with a private terminal within a port. The private port corporation is essentially a port authority consisting of a single private terminal company. This is not a popular

form of port administration and is known to exist currently only in Texas City, Texas in the form of the Texas City Terminal Railway Company.

The advantage of using a private port corporation is that it ensures a businesslike operation. The disadvantages, however, are significant and include:

- a lack of public concern and a limited interest in regional economic development;
- an inability to issue tax-free securities;
- an inability to accept public funds for development;
- a lack of planning, zoning, and condemnation powers.

No Organization

Of course, one option available is to disband any existing port organization and allow the port lands and equipment to be purchased by private individuals or corporations. There are some who advocate this approach as it would return money to the city's coffers and ensure there would be no further drain on the city's revenues. For all practical purposes, this was the type of port administration employed by Detroit until very recently. While Detroit maintained a Board of Commissioners, their function was largely advisory, as the organization owned no land and/or equipment, and discharged no regulatory functions.

The disadvantages of leaving the port to its natural development are:

- the inability to preserve limited waterfront land for commercial transportation purposes;
- the inability to promote the port for the greater good of the community.

6.D THE RECOMMENDED STRUCTURE

A review of interview comments and a tabulation of the most popular form of port administering organization in the U.S. would seem to point to a public corporation type port authority. Generally, the study team agrees that

Milwaukee should streamline its organizational structure and adopt the corporate form that appears to be working in other political jurisdictions.

To assist us in selecting the most effective port organization for Milwaukee, the team created a decision matrix--shown in Table 21.

As can be seen from Table 21 the decision matrix shows a (state/multi-county/city) seaport only, public corporation as best meeting the needs of the Port of Milwaukee. This alternative was closely followed in the scoring by a state/multi-county public corporation encompassing airport, seaport, and foreign-trade zone. In third place was a public corporation formed by the state (presumably to control all state port operations). In fourth place was the option of forming a bi-state public corporation similar to the Port Authority of New York and New Jersey.

The eleven types of port organization were evaluated in the decision matrix in terms of the specific requirements of the Port of Milwaukee. Seven requirements were identified and weighted according to their relative importance on a scale ranging from .10 to .20 of a total of 1.00.

The seven port requirements are as follows:

1. Political Insulation

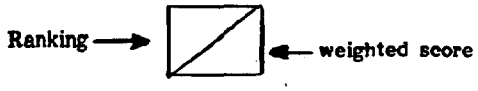
This was given an importance weight of .10. Political insulation is considered important if the authority is to operate on a businesslike, financially self-sustaining basis. The various forms of organization were given rankings according to how well they met this requirement. In this case, the independent commissions (Alternatives F and G in Table 21) were given a slight edge because the commission form is generally held to be more independent than an authority since many port authorities are directly responsible to governors or legislatures. The difference, however, is slight, and depends on how the specific port authority and commission is structured. The local government agency (Alternative I) is judged to have the least political insulation.

TABLE 21

PORT ORGANIZATIONAL STRUCTURE SELECTION MATRIX

ALTERNATIVE / TYPE OF ORGANIZATION	WEIGHTING →	PORT REQUIREMENTS: POLITICAL INSULATION	FINANCIAL BASE	USER PARTICIPATION	PLANNING AND ZONING POWERS	POLITICALLY ACHIEVABLE	INDEPENDENT FINANCING POWERS	POTENTIAL FOR STIMULATING PORT	TOTAL
		.10	.20	.15	.10	.20	.10	.15	1.00
Public Corportation (State)		8 / .8	9 / 1.8	7 / 1.1	8 / .8	6 / 1.2	10 / 1	9 / 1.4	8.1
Public Corporation (State/Multi-County/ City) - Airport/Seaport/Foreign-Trade Zone		8 / .8	10 / 2	8 / 1.2	8 / .8	6 / 1.2	10 / 1	8 / 1.2	8.2
Public Corporation (State/Multi-County/ City) - Seport Only		8 / .8	9 / 1.8	7 / 1.1	8 / .8	8 / 1.6	10 / 1	10 / 1.5	8.6
Public Corporation (Bi-State) Chicago/Milwaukee		8 / .8	10 / 2	8 / 1.2	7 / .7	3 / .6	10 / 1	7 / 1.1	7.4
Public Corporation (City)		8 / .8	5 / 1	6 / .9	9 / .9	6 / 1.2	10 / 1	4 / .6	6.4
Independent Commission (State)		9 / .9	7 / 1.4	3 / .5	10 / 1	6 / 1.2	0 / 0	2 / .3	5.3
Independent Commission (City)		9 / .9	3 / .6	3 / .5	10 / 1	6 / 1.2	0 / 0	2 / .3	4.5
Government Department (State)		5 / .5	7 / 1.4	3 / .5	5 / .5	6 / 1.2	0 / 0	3 / .5	4.6
Government Department (City)		4 / .4	3 / .6	3 / .5	5 / .5	10 / 2	0 / 0	3 / .5	4.5
Private Corporation		10 / 1	2 / .4	1 / .2	0 / 0	1 / .2	10 / 1	1 / .2	3
No Organization		10 / 1	0 / 0	1 / .2	0 / 0	8 / 1.6	0 / 0	1 / .2	3

organizational structure type is ranked from 1 to 10 according to its ability to provide the desired port requirement. requirement is weighted as to its importance.



2. Financial Base

The financial base requirement is given the highest weighting (.20), because it is essential to the viability of the port. It is assumed that the jurisdictions supporting the port will make annual revenue commitments to the port to allow for promotion and accelerated equipment and land acquisition. It is anticipated that the port will be self-sufficient in terms of day-to-day operations. The broadest financial base shown in Table -- is Alternative B, the state/multi-county/city public corporation with responsibility for both the airport and seaport. This was followed closely by Alternative C, which also has a broad base.

3. User Participation

User participation was given a ranking of .15. Many of the potential port users interviewed in the study complained of a lack of concern for users. If potential users participate through representation on a regional port commission, their commitment to the port will be greater. For this requirement Alternatives B and D were given the highest ranking because they included the largest geographic area and/or constituency. As an alternative or in addition to users being represented on the port commission, a port user advisory board could serve as a means of communication between the port and industry.

4. Planning and Zoning Powers

For maximum effectiveness, it is necessary that the port organization have the ability to control the use of waterfront lands. The independent commissions (Alternatives F and G) were given the highest ranking for this requirement.

5. Politically Achievable

This requirement focuses on whether or not the alternatives under consideration could actually be brought into being under the current political environment. The city department form of organization (Alternative I), is of course already in existence, so it is given the highest ranking of 10.

Alternative C, the state/multi-county/city public corporation for the seaport only, was given a high ranking of 8, based on the general consensus of opinion that was shcwn during the interviews for an autonomous port authority form of organization. The bi-state and airport/seaport/foreign-trade zone combinations were thought to be somewhat less achievable.

6. Independent Financing Powers

It is important that the organization selected be able to finance new facilities and equipment through revenue bonds or other similar means. Under current law, the proceeds from these bonds are tax free and therefore have lower interest rates. Independent in this case means that financing decisions and obligations would be made by an organization's governing body on the basis of need and potential revenue generation without political interference. The various corporation forms of organizations (Alternatives A through E) were given the highest ranking for independent financing. This requirement was given a weighting of .10.

7. Potential for Stimulating Port

The port is a major economic asset for both the State of Wisconsin and the Milwaukee region. By stimulating the services provided by the port, the state and region can attract new industry and capture a larger share of existing industry expenditures. Therefore, the organization that is selected should offer the greatest potential for stimulating the port.

Alternative C was given the highest score of 10 for the stimulation requirement. A corporate authority with revenue contributions from a broad base and regional commission membership as well as maximum zoning powers will have the greatest opportunity for stimulating the port. The (seaport only) alternative was given the edge in the ranking because it will focus interest on the waterfront area and freight interchange problems.

* * * * * *

The state/multi-county/city (seaport only) organization, Alternative C, received the highest score. This option envisions a regional port authority with a maximum degree of autonomy. The state would participate through the appointment of commissioners and through yearly revenue contributions. The City of Milwaukee and selected surrounding counties would also participate, with both commissioners and revenue contributions.

Alternative B, the second ranking alternative, is essentially the same as Alternative C, except that the authority's jurisdiction would include the airport and the granteeship of the foreign-trade zone. This is equal to Alternative C except that it is probably less achievable politically, and since its focus would not be spread among the seaport, the airport and the foreign-trade zone, it would be less responsive to the specific needs of the seaport.

The third highest ranking alternative, Alternative A (a state public corporation), also suffers because it lacks total focus on the port. Under this alternative, it is assumed that a port authority set up solely under the jurisdiction of the state would by necessity bear a responsibility for all state ports.

As can be seen, other forms of organizational structure scored significantly lower. Note that the current form—a city agency—is tied for eighth place as an appropriate organization for meeting the needs of the Port of Milwaukee. Alternative C, a regional port authority with jurisdiction over the seaport and adjacent waterfront areas, appears to offer the best alternative for the Port of Milwaukee. Accordingly, the study team is recommending the Board of Harbor Commissioners take the initiative in effecting an organizational change which would remove the port from the sole jurisdiction of the City of Milwaukee and place it under a corporate type port authority with participation by the city, state, and counties.

A variety of conditions and circumstances have led the study team to its conclusion concerning a new port authority organization. In summary, the reasons include:

- Milwaukee's port organization is a remnant of the past and is more typical of the 30's and 40's than the 80's. It is out of step with most of the port community nationwide.

- Virtually all the potential port users interviewed thought an autonomous port authority was appropriate for the Port of Milwaukee.

- The City of Milwaukee is facing a long-term financial squeeze in which it will not be able to continue to support large port-associated deficits.

- The port serves a wide hinterland which includes surrounding counties and scattered industries throughout the state. These jurisdictions will benefit from an improved port and should be included both in the governing of the port and its financial support.

- The port needs to become self-sufficient financially, whereby day-to-day operational needs are met from incoming port revenue. Contributions from participating governmental jurisdictions can then be used for promotion and facilities and equipment acquisition.

- The staffing of the organization plus its long-term development plans need to be divorced from city politics. This can best be accomplished through a corporate-type port authority.

The recommended alternative (Alternative C) is for a corporate-type port authority with jurisdiction over the seaport. It is further recommended that the organization have the following features:

- a name reflecting its state and regional participation, such as the "Milwaukee Regional Port Authority";

- an eleven-member Board of Commissioners appointed as follows:

  4 from the state at large (by the Governor)
  3 from the City of Milwaukee (by the Mayor)
  2 each from the surrounding counties (initially Milwaukee and Waukesha) (by the County Government)

- the Chairman and Vice Chairman of the Board to be selected by the Board;

- at least five members to have port user backgrounds;

- the power of eminent domain to acquire property or any interest therein;

- the authority to dredge slips and waterways (consistent with the requirements of the Corps of Engineers);

- the authority to veto permits for the location of industries on any navigable water within Milwaukee County;

- the authority to collect harbor dues and charges;

- the authority to acquire, construct, equip and maintain piers, quays, wharves, breakwaters, land, buildings, waterway markers, cranes, rails, ships, boats, locomotives, and other associated equipment;

- the authority to issue revenue bonds as necessary for the acquisition and/or construction of port sites, buildings, and equipment;

- the powers of a body corporate, to sue, be sued, and make contracts;

- the authority to rent, lease, buy, own, or acquire property;

- the power to employ and dismiss employees;

- the power to establish a traffic bureau to investigate and seek improvement in transportation rates affecting the port;

- the authority to apply for and accept revenue contributions and/or loans from any governmental jurisdiction or private individuals or corporations;
- the authority to hire employees located outside of the City of Milwaukee and to maintain branch offices in any appropriate location;
- the power to publish periodicals and brochures;
- the power to loan money or contribute money, goods, or personnel to multi-state marketing activities such as the Great Lakes/St. Lawrence Seaway Cargo Marketing Corporation;
- other powers as necessary.

7. DEVELOPMENT OPTIONS AND TEN-YEAR PLAN

7.A GENERAL OVERVIEW

As a consequence of the review of past cargo statistics, and in recognition of the changes in patterns and modes of cargo movements, certain generalities regarding the potential for port services at the Port of Milwaukee can be established.

While the period from 1960 to 1975 augered well for the volume of general commerce of the port and its conversion to containerized movement, this potential has been largely dissipated by events over which the Port of Milwaukee had very little control. This need not be construed as a pessimistic concession that the general cargo trade is destined for complete extinction. Certainly, aggressive marketing and targeting of favorable commodity types, as demonstrated by Meehan with PL-480 cargoes, will maintain a continuing level of service to utilize existing facilities and provide for some modest expansion. However, containerized service as it was once evolving via direct and feeder service, is virtually non-existent--a condition that is expected to continue--unless circumstances favorable to certain combination services make a reversal of the trend possible. Reference here is made to grain ships which may have the potential for carrying containers as deck load.

If the Port of Milwaukee has a very limited potential for general cargo service, then its continued viability as a thriving port lies in bulk cargo service and its potential for attracting specialized cargo movements, including project movements.

A review of cargo statistics reveals that the Port of Milwaukee has handled substantial volumes of bulk cargoes. Certain factors have had a marked influence on these. One can cite the opening of the West Shore pipeline in 1962, with the consequent decline in waterborne petroleum service. This can prove to be a benefit to the port as the leases of tank farms on Jones Island run out and

restore the areas for new bulk cargo utilization. A great deal of the potential of the Port of Milwaukee will relate to the conversion of the oil storage properties to other cargo storage uses as herein outlined.

Other than petroleum, the major bulk cargo commodities are coal, cement, salt, grain, and some potash. In assessing potential for growth,previous studies target coal and grain for major attention. The results of this study, supported by interview sources, give concurrence to this conclusion. In addition to these specific cargoes, other cargoes such as salt and potash require consideration since certain modifications in service related to these commodities appear in order.

In a review of port facilities, one cannot help but be impressed by the heavy-lift facilities of the Port of Milwaukee. These facilities attest to the wisdom and foresight of those who have guided the destinies of the Port of Milwaukee in the recent past. This is a valuable cargo-attracting tool. The port offers a service unmatched by many of its competitors. This advantage should be aggressively marketed for heavy-lift cargoes and the additional project volumes that frequently follow in support of the heavy pieces. One consultant in the past refers to the fact that no discernible pattern of service can be established for the heavy-lift area. This is characteristic of such services since the maintenance of levels of service over a sustained period is the result of aggressive selling and stability in worldwide economic conditions. This is a difficult combination to cope with, and therefore inevitably results in service peaks and valleys—the bane of the port administrator's existence.

Consistent with and as a consequence of the general conclusion discussed, this report formulates development plans covering the near time-frame and evolving and extending over the long time-frame. The proposed plan should be regarded as a flexible one. Only the long-term objectives are regarded as fixed —all other aspects leading to these objectives are subject to flexible application.

Consistent with your directive, the report addresses the phase-out of petroleum storage facilities, accommodates the stated needs for expansion of

the Milwaukee Sewage Disposal Plant on port lands, and examines the potential for coal shipments (energy-source products). Accommodation is made for an export grain terminal.

The study specifically addresses the use potential of the existing Greenfield Avenue tract owned by the Port, and the 31-acre bulk commodity site on the lower south bank of the Kinnickinnic River.

7.B DISCUSSION OF DEVELOPMENT OPTIONS

The maritime trade of the Port of Milwaukee results from the handling of general cargo and bulk cargoes. The trends for each category of cargo have been discussed previously. Hence, this section is devoted solely to a discussion of the development options, salient factual data related thereto, order-of-magnitude costs, and indicated final recommendations.

- Milwaukee Sewage Disposal Plant Expansion

A delineation of the properties to be utilized by Milwaukee Sewage Disposal Plant is shown in Figure 3. The extension into the outer harbor will add some 5.70 acres to the existing plant, while the extension onto the former American Oil Co. leasehold property on Jones Island will constitute some 11.00 acres to be removed from the land holdings of the Port.

The designated East Berth of Terminal No. 1 will be forfeited by virtue of the extension into the harbor. The consequences of this will be discussed under "General Cargo Development."

While port departments must necessarily regard the loss of any lands which support berth services as undesirable, it appears that the proposed transfer of the indicated properties must be considered as an inevitable trade-off between two city agencies.

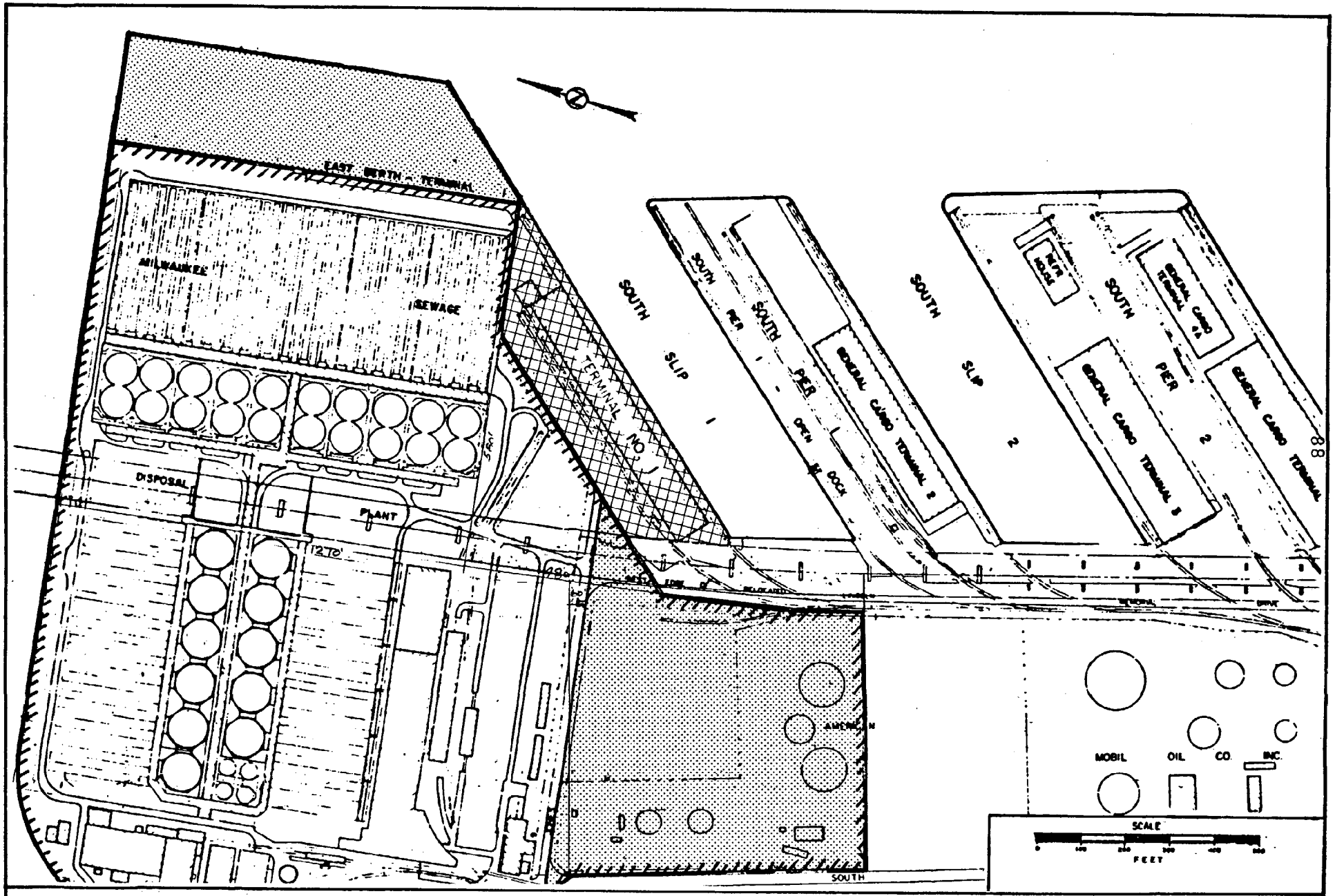


FIGURE 3: PROPERTIES TO BE UTILIZED BY SEWAGE DISPOSAL PLANT, AND TERMINAL #1

- General Cargo Development

The General Cargo Facilities of the Port of Milwaukee are leased as a unit to a single terminal operator--Meehan Seaway Service, Ltd. The facilities are utilized almost exclusively for breakbulk operations, much centering around PL-480 shipments. The facilities are excellently maintained by the Port Agency, and the housekeeping by the tenant is quite exemplary. It is recommended that the existing facilities continue to be leased to a strong operator, in accordance with the prevailing practice.

There is no reason to be encouraged, with respect to waterborne containerized cargo trade. The promise of the early 70's with respect to the growth of such cargo has largely evaporated, and the projected growths anticipated in previous planning reports have proved to be a myth. While this conclusion must be accepted, certain combination service potential provides a basis for some optimism in the future. Accordingly, existing areas designated for container service should be maintained and utilized to service present land modes of container transport--i.e., for rail and truck feeder service.

Terminal No. 1, adjacent to the Milwaukee Sewage Disposal Plant (see Figure 3), is presently occupied by Domtar, Inc. for the storage of salt and salt-bagging operations. An inspection of this facility reveals that the pier shed is in deplorable condition. The truss system is badly deteriorated, and in danger of virtual collapse. We are advised that condemnation notices regarding the building have been discussed, and that the demolition of the building is anticipated within the next two years.

The building is approximately 60,000 square feet in size, and the demolition cost is estimated at $120,000. It is recommended that use of the terminal building for salt storage and bagging

operations be promptly discontinued, and that demolition be contracted for.

We have been advised that engineering studies indicate a loading factor for the pier area at 750 p.s.f, with a possible uprating to 900 p.s.f. This would make the berth suitable for breakbulk operations. Meehan has expressed an interest in leasing the berth for such purposes.

We recommend that Terminal No. 1 be leased to the General Cargo Operator (Meehan) on an "as is" basis. He may erect on the site, at his expense, such temporary buildings as deemed necessary to support his breakbulk operations. The loss of the East Berth, as a consequence of the extension of the Sewage Disposal Plant, is not considered serious when one evaluates the limited throughput potential of the existing berth.

- Bulk Cargo Development

The growth potential of the Port of Milwaukee is dependent upon the growth of bulk cargoes. Accordingly, we have reviewed the past and existing lease uses of the Jones Island areas, and we have formulated recommendations concerning near-term and possible long-term utilization.

Virtually all the Jones Island storage area was originally subdivided into tank farm parcels and leased to major oil companies. However, pipeline service, which commenced in 1962, diminished the need for much of the waterborne petroleum service. Hence, the Liquid Cargo Pier, which is in excellent condition, is underutilized as a receiver of liquid cargoes.

A review of existing leases (see General Layout, Figure 4), indicates that the original American Oil Co. parcel and the original Texaco parcel no longer function as tank farm facilities and have

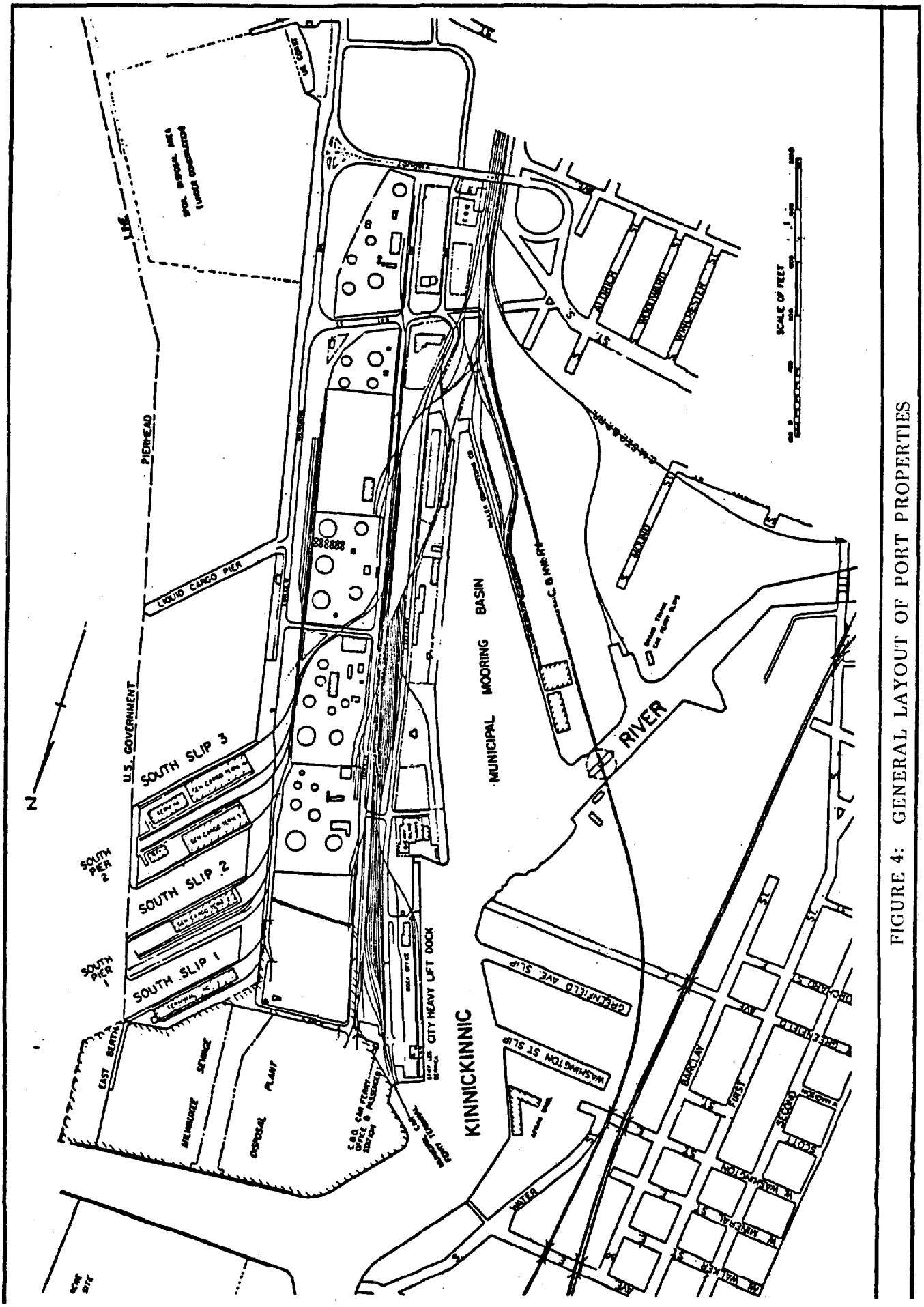


FIGURE 4: GENERAL LAYOUT OF PORT PROPERTIES

reverted to port control. The Marathon Oil parcel lease has run out as of July 31, 1982; and the Jacobus Co. tract lease will run out as of December 31, 1982, and revert to port control. It is recommended that these parcels not be encumbered by future long-term leases under the present usage. Present clients can be encouraged to continue their occupancy on a month-to-month basis, with assurances that they will receive at least one year's notice to vacate.

The former Phillips Petroleum tank farm has been leased to Johnson and under terms of the lease may remain under their control until the year 2006, if they exercise all their options.

The Shell Oil Tank Farm is subject to the lessee's control until 1990, while the Mobil Oil Tank Farm is subject to the lessee's control until 1995.

A careful review of the existing properties under port control on Jones Island indicates that they are adaptible to bulk cargo storage, compatible with recommendations made in previous reports and studies conducted for the port. Reference here is made to the recommended promotion of a grain elevator, and to the development of an export coal terminal. Both projects provide exciting possibilities for both near-term and long-term development.

- Export Coal Terminal

The schematic layout for an Export Coal Terminal is depicted in Figure 5. It occupies the former sites of the Texaco and Marathon Tank Farms. The sites, providing some 17 acres, will accommodate two coal stockpiles of some 200,000 short tons each, permitting an annual throughput of some 5 to 6 million short tons.

A loading dock for the coal facility is located just south of the Liquid Cargo Pier. An arrangement of the track system on the

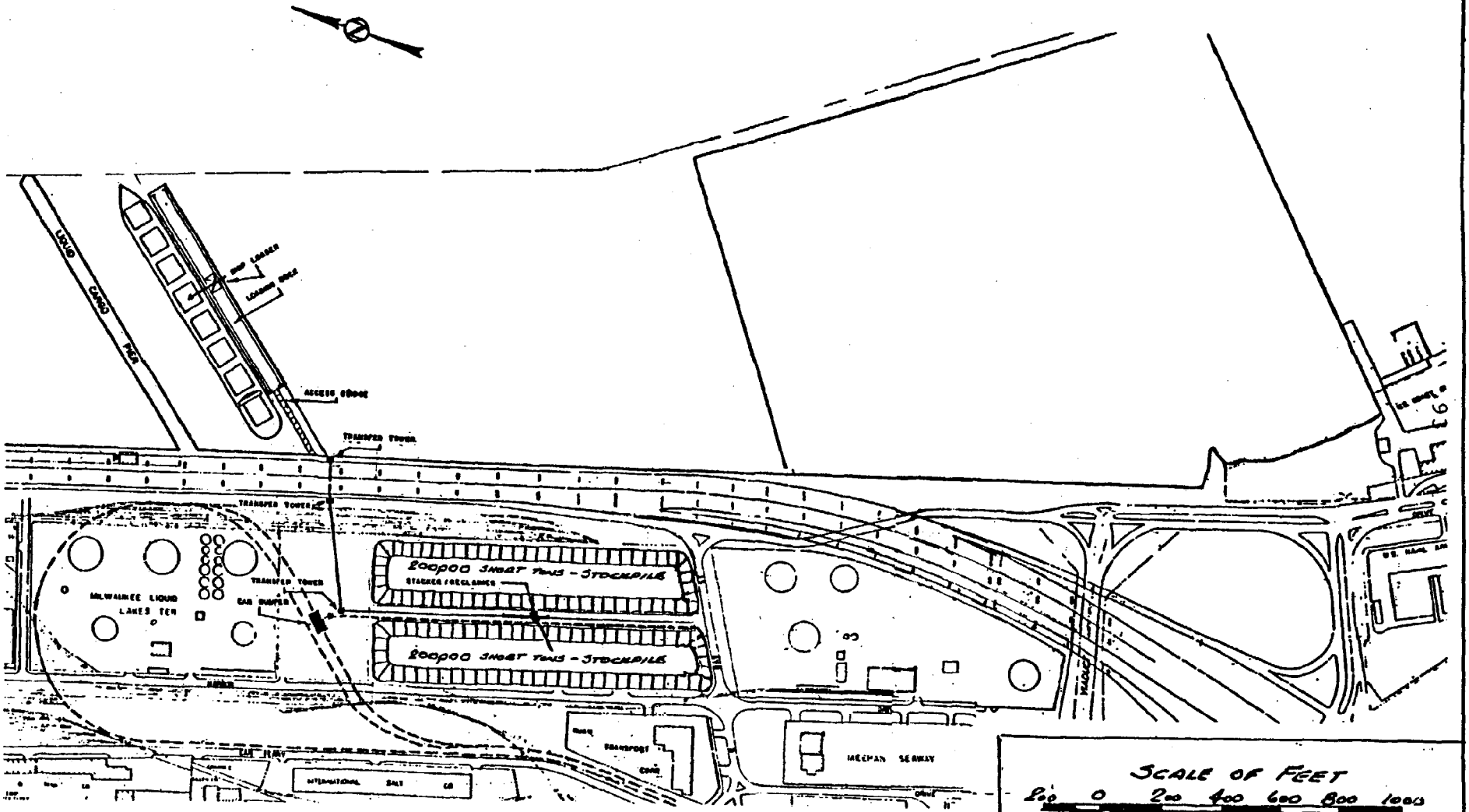


FIGURE 5: SCHEMATIC LAYOUT OF EXPORT COAL TERMINAL

adjacent Milwaukee Liquid Lakes Terminal (Jacobus) will apparently permit through circulation of unit train movements. The order-of-magnitude cost for the system depicted is considered to be $33 million.

This facility is susceptible to development in the near-term and could be operational by mid-1986 if a client is attracted to the port.

The site provides unique opportunity for long-term development, as depicted in Figure 6. As shown in this figure, two expansion possibilities are depicted. In one instance the storage arrangement is increased to some 600,000 short tons total, thus increasing the annual throughput to some 7 to 9 million short tons. The other expansion visualizes an extension of the spoil disposal site as depicted by the shaded area. This area, in combination with the existing spoil disposal area, would provide a storage site of some 87 acres, but cannot be expected to be available until the turn of the century.

- Export Grain Terminal

The schematic layout for an Export Grain Terminal of 3,000,000 bushel capacity is depicted in Figure 7. Under this arrangement the south side of the Liquid Cargo Pier would be utilized for a shipping gallery, accommodating at least five spouts. The layout is shown on the Shell Oil Co. parcel, which may not become available until 1990, but the possibility of an earlier release of the site should be explored. The order-of-magnitude cost for the Export Grain Terminal is considered to be $32.6 million.

- General Overview of Jones Island Parcels

The Jones Island areas are very challenging to the planner, and the problem is further complicated since it is beyond the scope of this study to provide detailed engineering planning. The rail service

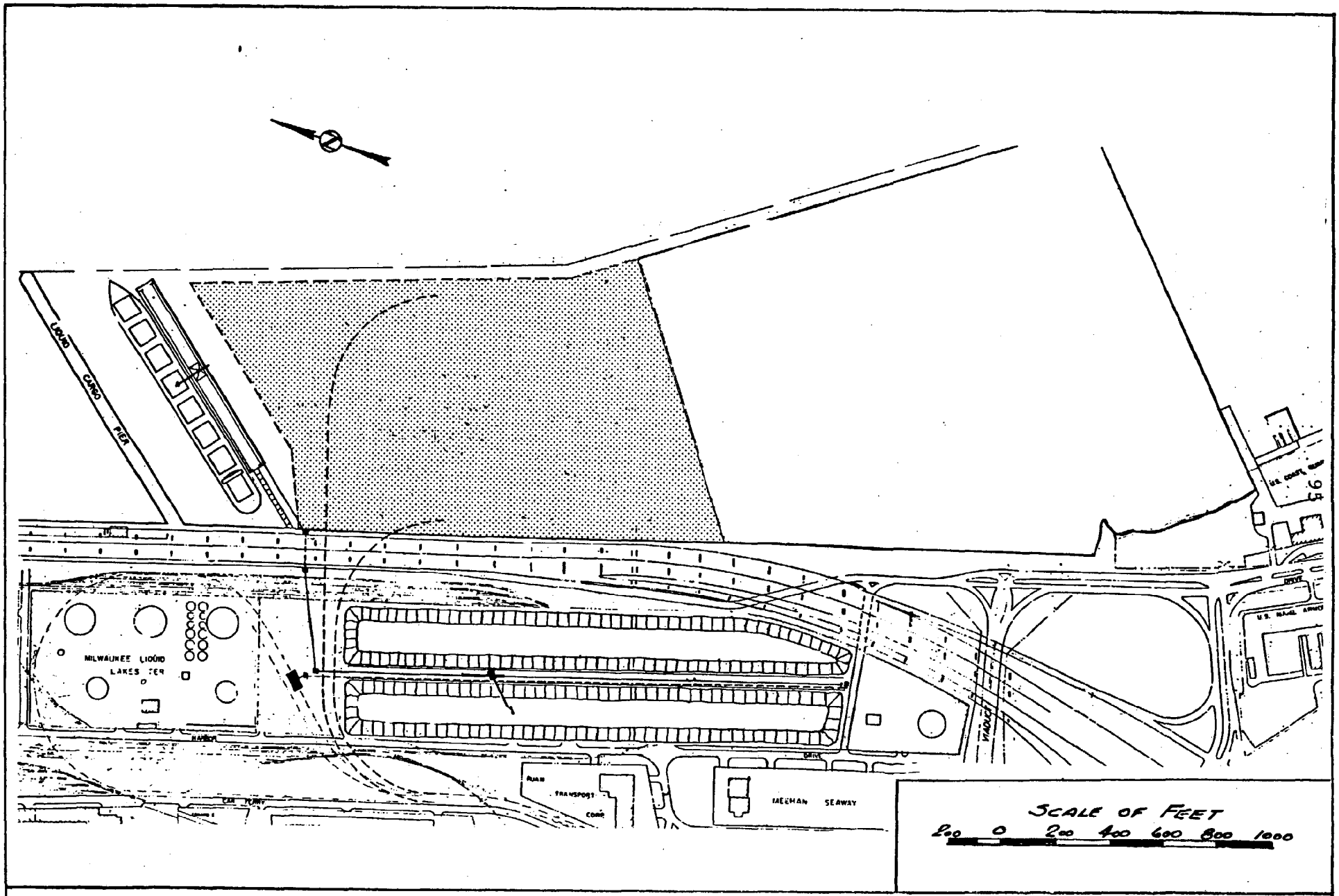


FIGURE 6: EXPANSION POTENTIAL OF EXPORT COAL TERMINAL IN THE LONG TERM

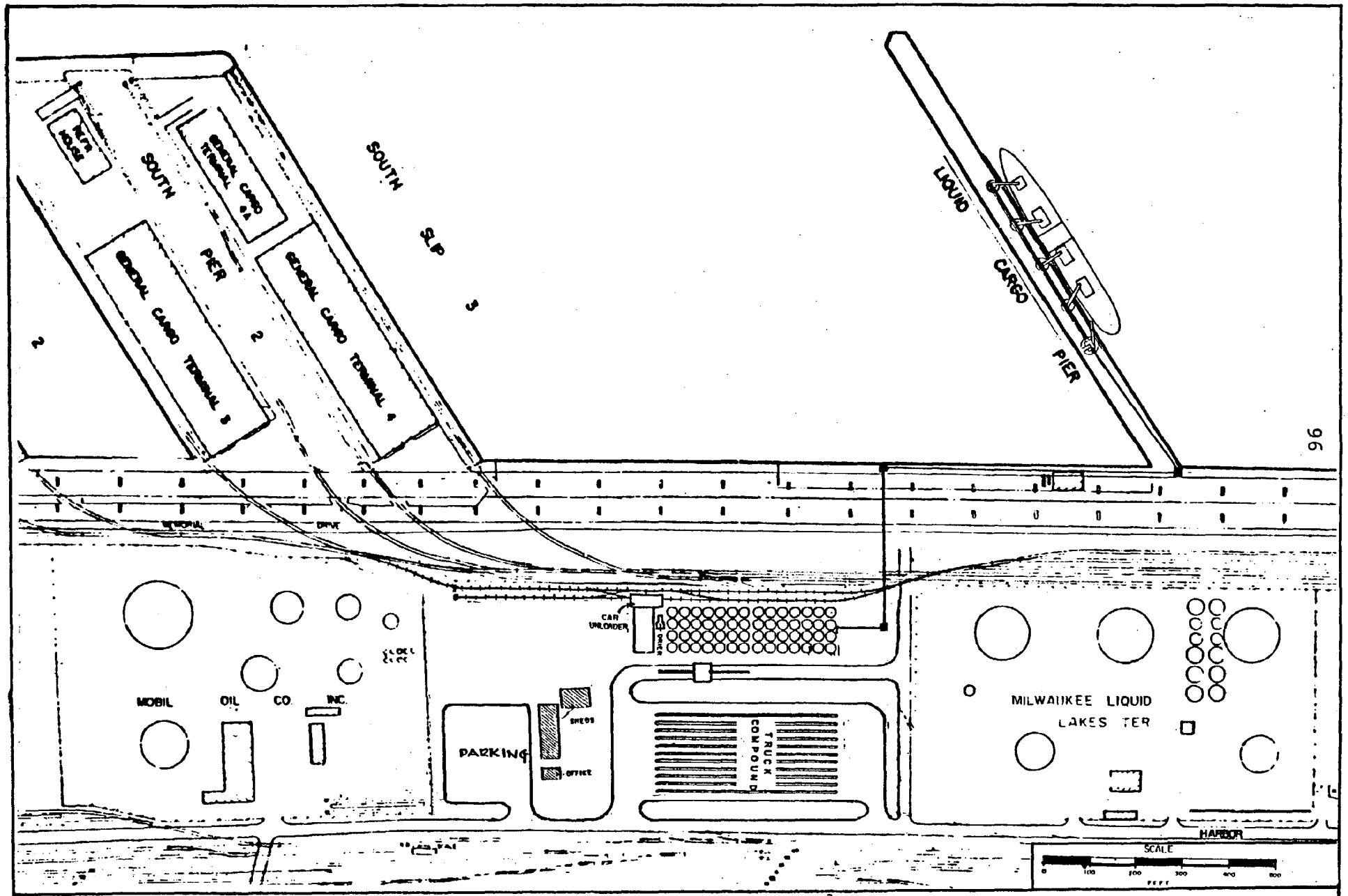


FIGURE 7: SCHEMATIC LAYOUT OF EXPORT GRAIN TERMINAL

system will require special attention and rather costly modification. Certain geometrical track layouts have been presented in the schematics to indicate feasibility, but admittedly will not resolve all conflicts.

The attractiveness of the Jones Island parcels is founded in their ability to be served from the outer harbor area where maximum Lakes depth of berthing is available. The Port of Milwaukee has few available sites which meet this criterion and provide acceptable foundation conditions as well.

- Inner Harbor Port Facilities

The present utilization of the Heavy-Lift Pier and the berthing perimeter along the Municipal Mooring Basin have been reviewed. Critical appraisal of their leasehold occupants and their operations present some questions. Any operation that does not require the waterfront perimeter can be considered mismatched if it occupies port properties unnecessarily. Although some of the uses are rated marginal in this respect, the clients are long-term occupants, and one must respect the fact that earlier port administrators reviewed and evaluated the present tenants and considered it in the best interest of the port to lease them sites. We consider that the port has a moral obligation to honor these base commitments and provide the lessees with the opportunity to profit from their investments.

- Development Sites — Kinnickinnic River

The shaded areas indicated in Figure 8 depict the Greenfield Avenue site, comprising some 13.5 acres, which is presently owned by the Port of Milwaukee, and the P.V. Atlas site, comprising some 31 acres, which is under option to the port.

In accessing the two sites, certain operational conditions must be addressed. The Greenfield Avenue site has a water perimeter which will permit an 800-foot long vessel to dock. To consider that

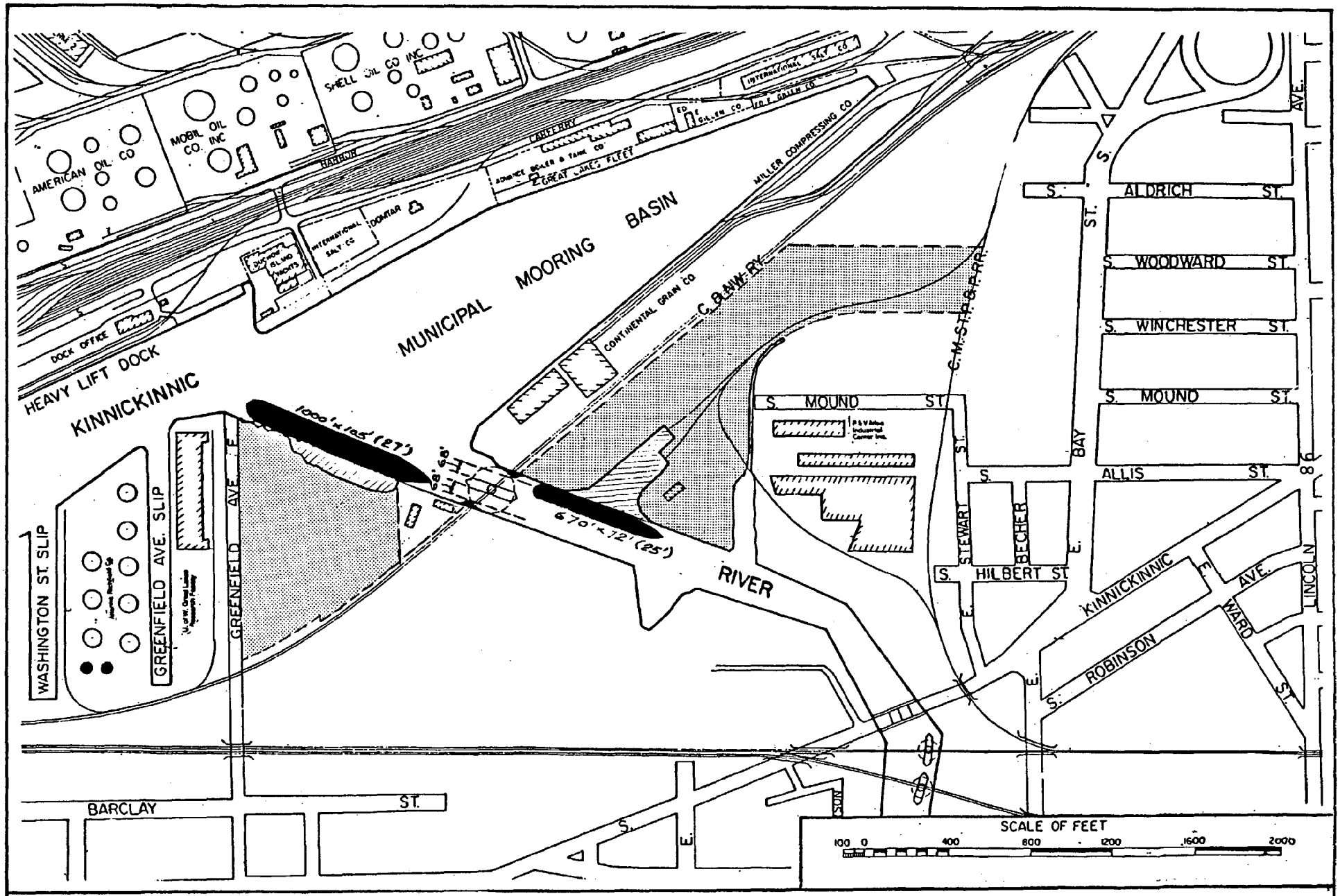


FIGURE 8: OPERATIONAL CONDITIONS RELATED TO KINNICKINNIC RIVER SITES

a 1,000-foot laker could dock at this site with its stern extended into the Kinnickinnic channel would result in a dangerous navigational hazard for vessels docking in the Municipal Mooring Basin and for ships and barges going through the swing span into the southern branch of the Kinnickinnic River.

Hence, if 1,000-footers are to be accommodated at the Greenfield Avenue site, it is recommended that the triangular-shaped property, occupied by a contractor, be acquired to provide the additional perimeter facing required.

The swing bridge at the entrance to the southern arm of the Kinnickinnic River impedes traffic in several ways. The maximum clearance is restricted to 68 feet and the dredged depth is restricted to about 22 feet. It is not deemed advisable to consider the P.V. Atlas site as suitable to accommodate 1,000-foot lakers. However, vessels of 670-foot length by 72-foot beam, with a maximum draft requirement of 25 feet, could be readily accommodated at the site if the Chicago & Northwestern swing bridge just north of the site were demolished. Demolition of this bridge is estimated at $200,000.

- Possible Utilization of Greenfield Avenue Site

The Greenfield Avenue site has been studied by the consultant firm of R.S. Fling & Partners, Inc. in their report: "Proposed Wisconsin Cooperative Elevator for Port of Milwaukee." The possible layout of a grain elevator as proposed in this report is shown in Figure 9. The estimated cost of the facility was reported as $24.8 million (in 1980 dollars), and has been updated to $28.9 million (based on July 1982 dollars). The consultant states that the site presented difficulties in layout and insufficient site storage for railcar service. Further, we are advised that the site has very bad foundation conditions which may add rather substantially to the cost of a grain elevator.

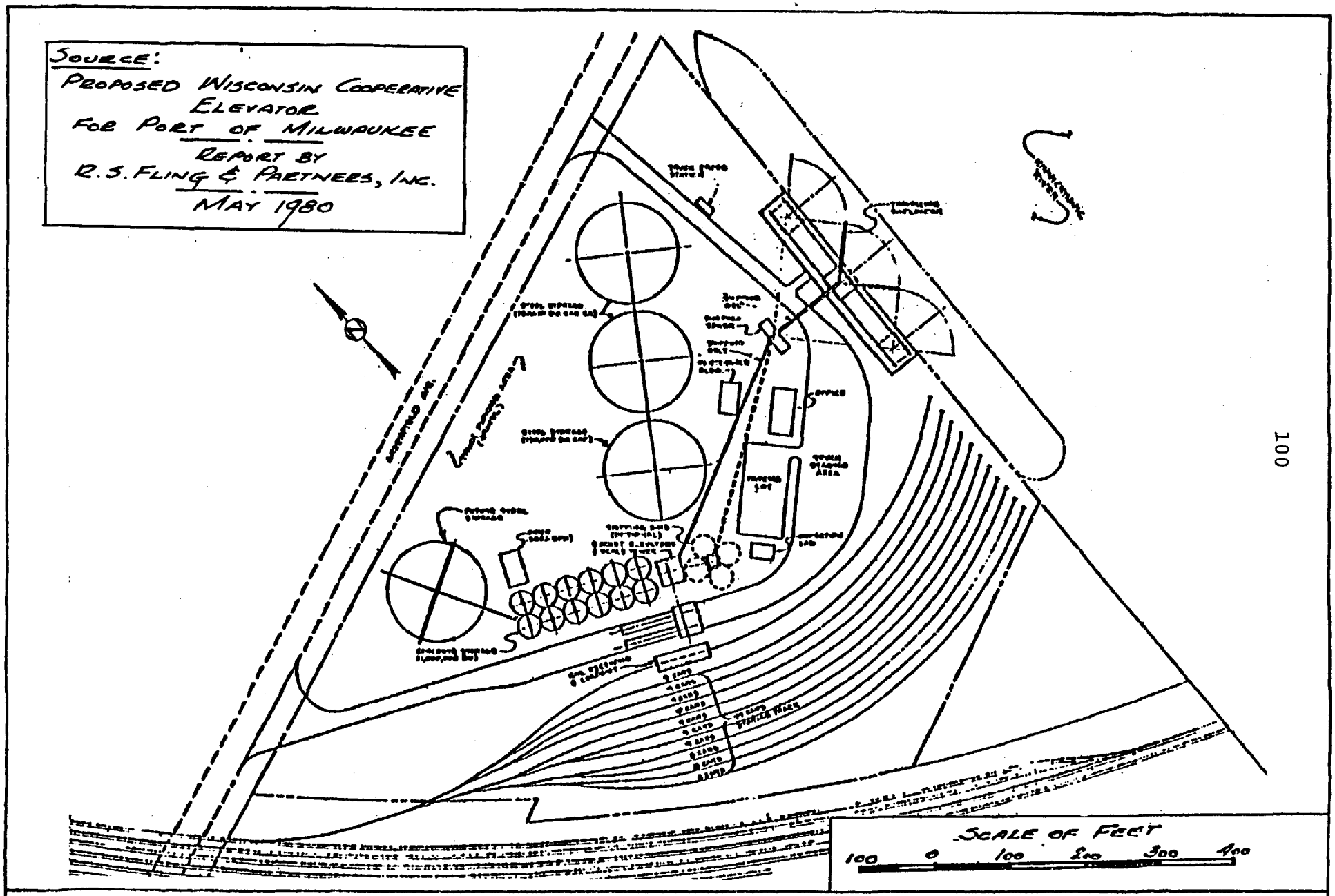


FIGURE 9: SCHEMATIC LAYOUT OF EXPORT GRAIN TERMINAL - GREENFIELD AVE. SITE

It appears advisable to reserve the site for a bulk storage operation of limited scope, which is compatible with the 13.5 acre site size. Uses such as potash stockpiling, or metallurgical pellet stockpiling, appears to be consistent with this recommendation.

- Possible Utilization of P.V. Atlas Site

The P.V. Atlas site, comprising some 31 acres, is not configured effectively to support its potential berthing perimeter. Also, as pointed out previously, the berth is not recommended for the accommodation of 1,000-foot laker types.

As a consequence, the site appears most appropriate for a Domtar operation. This company presently occupies three sites for its operations. The operation at Terminal No. 1 must be discontinued as soon as it is feasible to do so. This operation, as well as all of their other operations in the port, could be consolidated at the P.V. Atlas site.

The type of ship serving Domtar is a self-unloader type, with dimensions of 670 feet LOA, with a beam of 72 to 74. However, they require a 25-foot depth which cannot be attained at the Atlas site without removal of the C&NW swing bridge.

Domtar indicates an interest in obtaining a twenty-year lease on a site which would permit them to consolidate their operations and accommodate a variety of products, including salt, sand, wood chips, feed, potash, etc.

The estimated cost to bulkhead the berth, fill in the existing ship, and dredge to 27 feet, is $3.4 million.

- Utilization of North Harbor Area

The North Harbor Area is utilized for recreational facilities and sites for the City of Milwaukee. The former passenger ferry

boat pier is situated on the North Harbor perimeter, and is now utilized for the office facilities of the Port of Milwaukee personnel and a very fine restaurant.

A marina is sited at the extreme north end of the harbor area, and the Summerfest Park Grounds of the City are situated on the south end.

In the Tippetts-Abbett-McCarthy-Stratton (TAMS) Container Report prepared for the Port of Milwaukee in 1973, it was recommended that the North Harbor Area be utilized for the development of a container terminal. With the decline of container service this recommendation can be considered no longer valid. However, regardless of this circumstance, development of port facilities in the North Harbor Area must be regarded as highly controversial. Traditionally, the City of Milwaukee has balanced its industrial and port areas with sitings devoted to public and recreational uses. The North Harbor area has been so developed and it appears desirable to concentrate and to continue such sitings on this side of the harbor.

As a balancing trade-off, the South Harbor area, with the extensive tract being developed as a consequence of dredge disposal together with its possible extension as recommended in this report should be dedicated to port expansion.

8. RECOMMENDED ADMINISTRATIVE ACTION AND DEVELOPMENT PLAN

The elements leading to the recommended development plan for the Port of Milwaukee have been discussed in the previous sections of this report. This section summarizes the recommended Administrative and Development Action.

8.A ADMINISTRATIVE ACTION

The study team is recommending administrative action in two areas: (1) the transition to a public corporation type of organization, and (2) the preparation of a revised marketing strategy and marketing plan.

1. The Transition to a Public Corporation

- The Mayor and City Council should formally consider the findings of this study to form an autonomous public corporation with participation by the city, state, and counties and, if in agreement, direct the Municipal Port Director to prepare a transition plan detailing:
  - the assets that would be transferred;
  - the disposition of jobs and employees;
  - the required financial contributions, and roles of sponsoring governments (state, counties, and city);
  - the steps necessary to reduce expenditures to bring operating expense in line with anticipated operating revenue (this could include contracting for operating and maintenance services);
  - the means for increasing revenues from leased and leasable lands, including a user charge to be placed on Milwaukee World Festival for use of North Harbor tract lands.

- Upon receipt of and concurrence with the transition plan, the Mayor, with the concurrence of the City Council, should dissolve the current Board of Harbor Commissioners and establish an interim Transition Board with the combined duties

of overseeing the present operations and executing the transition into an autonomous public corporation. This board should be dissolved automatically when it has accomplished its work in accordance with a pre-established time schedule. The board should include a member from the city, a member from each of the participating counties, and a member from the state, as appointed by appropriate authority in each jurisdiction.

- The Chairman of the Transition Board should direct the Municipal Port Director to establish a State/Multi-County/City Advisory Commission of port users to assist the Transition Board to effect the necesssary changes.

2. Preparation of a Revised Marketing Strategy and Marketing Plan

- Regardless of the ultimate organization adopted by the Port of Milwaukee, there is an overriding necessity to upgrade and revitalize the port marketing effort. The Municipal Port Director should prepare a marketing strategy and marketing plan which fits the proposed future development of the port and the realities of the transition currently underway in Milwaukee and on the Great Lakes. The plan should address:
  - the means for attracting new revenue-producing industries and port-related services to the port's leasable lands, with emphasis on both the proposed coal and grain terminals;
  - restructuring the staff to ensure resident representation in key hinterland locations;
  - a mechanism for monitoring the effectiveness of marketing activity (a commission should be considered).

8.B DEVELOPMENT PLAN

The Development Plan in the long-term centers around the concentration of cargo operations in the South Harbor Area, both in the Outer Harbor and Inner Harbor Area. Hence, the North Harbor Area would be dedicated to public service and recreational uses.

The Development Plan is based on a modest continued requirement for breakbulk general cargo facilities, but with the Port of Milwaukee's prime potential lying in continued development of the bulk cargo trade.

With regard to general cargo service, the following recommendations are made:

1. Continue to lease the existing general cargo facilities, including the heavy-lift pier to a single aggressive operator.

2. Maintain the container storage areas, on a contingency basis, pending the possible rejuvenation of such service.

3. Discontinue the present utilization of Terminal No. 1 as a salt storage and bagging operation. The shed should then be demolished, at an estimated cost of $120,000. The resultant open berth should be leased to the General Cargo operator.

With regard to bulk cargo service, the following recommendations are made:

1. As the Jones Island leases run out and revert to the port, the parcels should not be encumbered by long-term renewals, but reserved for substantial project use.

2. The former Texaco and Marathon parcels can be grouped to accommodate an Export Coal Terminal. Such a facility, with a maximum throughput of 5 to 6 million tons annually, can be

developed at a estimated cost of $33 million. It is recommended that the site be offered for private development of such a facility.

3. The Shell Oil parcel can accommodate an Export Grain Terminal. Such a facility, with a 3,000,000 bushel capacity, can be developed at an estimated cost of $32.6 million. This site will not become available until 1990, but an earlier release time should be explored.

4. The Greenfield Avenue site, presently owned by the port, should be held in reserve for premium bulk operations such as metallurgical pellet storage.

   This site has been recommended for a 3,000,000 bushel capacity Export Grain Terminal, in a previous report. The estimated updated cost is $28.9 million, but adverse foundation conditions at the site might add substantially to this cost.

5. The P.V. Atlas site is recommended as a site for the consolidated operations of Domtar, or a similar type of operation. To demolish the C&NW swing bridge will cost an estimated $200,000, while the cost of converting the P.V. Atlas site to accommodate a 670-foot ship is $3.4 million.

The program described above is one that can be pursued and implemented in a ten-year period. However, it has been studied with a long-range objective in mind. The major facilities referred to are grain and coal terminals. Each are susceptible to expansion growth in the locations indicated, and a general plan toward this end has been demonstrated. For instance, the potential for filling in portions of the Outer Harbor for coal stacking and storage has been addressed.

APPENDIX A

RENTALS AND CHARGES
C&NW AND MILWAUKEE RAILROADS

APPENDIX A

RENTALS AND CHARGES
C&NW AND MILWAUKEE RAILROADS

1 An annual amount equal to 5% of City's cost of construction of Classification Yard, lead tracks 1, 2 and 3, and industry tracks; i.e. 5% of $181,540.58 actual cost, exclusive of cost of land, to be borne equally by the tenants without regard to use by them. 3% added to capital cost to cover City's engineering costs.

2. An annual amount equal to 5% of City's actual cost of constructing additions and betterments to the Classification Yard (on written request by or with consent of the tenants) to be borne equally by the tenants without regard to respective proportionate use of said trackage.

3. Actual cost of maintenance and renewal of trackage in storage or Classification Yard, the industry lead track, and the aforesaid three lead tracks, pro-rated on a use basis in proportion to the total number of cars, both loads and empties, moving in or out of the South Harbor Tract for the account of each railroad, plus 10% for actual labor cost; 15% on cost of materials furnished; and 1% on expenditures made in connection with outside contractors or outside service agencies (not municipal).

4. 5% on City's actual cost of construction of the Car Ferry Office Building, based on proportion of floor space used by each tenant in relation to the total rentable floor space (excluding hallways, toilets, or similar jointly used space and facilities).

5. An annual amount equal to 5% of actual cost for construction of any future additional facilities, requested in writing or approved jointly by both tenants <u>other than</u> the storage or Classification Yard, industry lead track and tracks 1, 2 and 3. Where used jointly, tenants shall pay rental in equal amounts, irrespective of proportionate use.

6. Depreciation on such facilities (5) at 3% of the cost of such facilities as the use thereof by the tenants bears to the total use. (This section referring to buildings, yard drainage, lighting installations, track scales, etc., excepting the Car Ferry Office Building.)

7. A proportion of the cost of repairs and upkeep of such facilities, exclusive of tracks, as may be used, requested in writing, or approved in writing by either tenant, as the use thereof by the respective carriers bears to the total use. <u>Renewals</u>, however, shall be made by the City out of payments received by it to compensate for the item of depreciation.

APPENDIX A (Continued)

8. Cost of insurance on facilities, carried by the City, plus 1% to cover accounting and overhead, on basis of use.

9. Cost of water, heat, and janitor service plus 15% for overhead, divided among the several users of the Car Ferry Office Building, in proportion to the rent paid by them.

APPENDIX B

LIST OF INTERVIEWEES

LIST OF INTERVIEWEES

ATTORNEYS

Mulcahy and Wherry
Charles Mulcahy
815 E. Mason Street
Milwaukee, WI
414/278-7110

David Stearns
735 N. Water
Milwaukee, WI
414/276-4515

BANKS

First Wisconsin National
Bank of Milwaukee
777 E. Wisconsin Avenue
Milwaukee, WI
414/765-4644

Marine National Exchange Bank
John Taflan
111 E. Wisconsin Avenue
Milwaukee, WI
414/765-3000

CITY GOVERNMENT

James McCann
City Comptroller
Room 401 - City Hall
200 E. Wells Street
Milwaukee, WI
414/278-2301

Brian F. O'Connell
Planner
Dept. of City Development
734 N. Ninth Street
Milwaukee, WI
414/278-2996

Michael Brodd
Planner
Dept. of City Development
734 N. Ninth Street
MIlwaukee, WI
414/278-2143

CITY GOVERNMENT (cont'd.)

Milwaukee Metropolitan
Sewerage Dist.
J.M. Malk
735 N. Water Street
Milwaukee, WI
414/278-2082

Earl Hawkins
Jeff Moshay
Office of the Mayor
City Hall
200 E. Wells Street
Milwaukee, WI
414/278-

REGIONAL GOVERNMENT

John Zastrow
Don Martin
Southeastern Wisconsin Regional
Planning Commission
P.O. Box 769
Old Courthouse
Waukesha, WI 53187
414/547-6721

STATE GOVERNMENT

Wisconsin Department of Transportation
Bureau of Railroads and Harbors
Paul Heitman
Madison, WI
608/266-7094

CIVIC GROUPS

Association of Commerce
John Duncan
Phil Beitzel
756 N. Milwaukee
Milwaukee, WI
414/273-3000

Citizens' Governmental Research Bureau
Norman Gill
125 E. Wells
Milwaukee, WI
414/276-8240

LIST OF INTERVIEWEES
(continued)

STATE GOVERNMENT (cont'd.)

Goals 2000
Jean Tyler
606 E. Wisconsin Avenue
Milwaukee, WI
414/271-2000

Greater Milwaukee Committee
David Meisner
735 N. Water
Milwaukee, WI
414/272-0588

PORT COMMISSIONERS

Harold Mayer
Commissioner
c/o Milwaukee Board of
Harbor Commissioners

John Randall
Port Commissioner
3005 North Lake Drive
Milwaukee, WI 53211
414/961-1228

FREIGHT FORWARDERS

C.S. Greene and Company
Leo Krenz
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Milwaukee, WI 53204
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Foreign Forwarding, Inc.
Franklin Reitz
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Milwaukee, WI 53225
414/461-6230

Harper Robinson
Marge Endres
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Milwaukee, WI
414/482-1717

McGregor Swire Services Ltd.
Kathy Lucenti
South Howell Avenue
Milwaukee, WI 53207
414/744-0474

FREIGHT FORWARDERS (cont'd.)

Miller and Thompson Forwarding, Inc.
Larry Miller
647 W. Virginia Avenue
Milwaukee, WI 53201
414/276-3200

Ray C. Fisher, Inc.
David Clausing
312 East Wisconsin Avenue
Milwaukee, WI 53202
414/271-4960

Salentine and Company, Inc.
David Salentine
4950 South Second Street
MIlwaukee, WI 53207
414/744-3640

CUSTOMS BROKERS

Hipage Company, Inc.
Anthony Galecke
10300 West Hampton Avenue
Milwaukee, WI 53225
414/462-1960

Harper Robinson
Marge Endres
4915 S. Howell
Milwaukee, WI
414/482-1717

M.E. Dey & Co.
Richard Gardinier
759 N. Milwuakee Street
Milwaukee, WI
414/271-2550

EXPORTERS

Afram Exports
Isador Afram
900 S. Water Street
Milwaukee, WI
414/672-2100

Allen-Bradley
Terry Knapper
1201 S. Second Street
Milwaukee, WI
414/671-2000

LIST OF INTERVIEWEES
(continued)

EXPORTERS (cont'd.)

Allis Chalmers
Jerry Der
1126 S. 70th Street
West Allis, WI
414/475-4244

AMPCO
James Richards
1745 S. 38th Street
Milwaukee, WI
414/645-3750

Artos Engineering
John Skurulis
15600 W. Lincoln Avenue
Milwaukee, WI
414/782-3300

Bucyrus-Erie
Tom Dantzman
1100 Milwaukee Avenue
Milwaukee, WI
414/768-4603

Centralab Electronics-Johnson Cor
Marian Schwehr
4285 N. Port Washington Road
Milwaukee, WI
414/961-7568

* Continental Grain Co.
Paul Krug
Grain Division
Board of Trade Building
Chicago, IL 60604
312/

Cutler-Hammer
William Rose
4201 N. 27th Street
Milwaukee, WI
414/449-6000

Harnischfeger
Charles Schmidt
13400 Bishop Way
Brookfield, WI
414/671-4400

EXPORTERS (cont'd.)

Krause Milling
Gary Schneider
Gerry Behrendt
4300 N. Brown Deer Road
Milwaukee, WI
414/355-7500

* Liquid Lakes
Jim Roberts
1700 S. Lincoln Memorial Drive
Milwaukee, WI
414/744-4976

Rexnord International, Inc.
Joanne Werdon
4701 W. Greenfield Avenue
Milwaukee, WI
414/643-3000

* Tanco Terminals
Woody Long (Indiana)
S. Harbor Drive
Milwaukee, WI
219/937-4300 (Indiana)
414/483-7773 (Milwaukee)

Vilter International
Lou Stark
2217 S. 1st Street
Milwaukee, WI
414/744-0111

IMPORTERS

Allen-Bradley
Terry Knapper
1201 S. 2nd Street
Milwaukee, WI
414/671-2000

Allis Chalmers Power Systems
Myron Bergman
1126 S. 70th Street
West Allis, WI
414/475-2272

Artos Engineering
John Skurulis
15600 W. Lincoln Avenue
Milwaukee, WI
414/782-3300

LIST OF INTERVIEWEES
(continued)

IMPORTERS (cont'd.)

Capital-Husting Co.
Linda Hanin
12001 W. Carmen Avenue
Milwaukee, WI 53225
414/353-1000

* Domtar Industries
Don Hoffman
1034 S. Lincoln Memorial Drive
Milwaukee, WI 53207
414/483-4699

Geiger Equipment, Inc.
Wernor Geiger
9406 N. 107th Street
Milwaukee, WI
414/355-4907

* International Salt Co.
Lou Mentzer
Home office: Clark Summit, PA
717/587-5131

Jak-Pak, Inc.
Sue Colburn
236 N. Water Street
Milwaukee, WI
414/272-1461

Stewart-Chase Co.
Thomas Wegman
3056 W. Meinecke Street
Milwaukee, WI
414/871-5802

Wisconsin Liquor
Doug Peterson
7900 N. 73rd Street
Milwaukee, WI
414/354-2910

LABOR

ILA
Peter Kalil
717 S. 2nd Street
Milwaukee, WI
414/383-1880

* Meehan Seaway Service Ltd.
Daniel Meehan
Thomas Pfeil
1500 S. Lincoln Memorial Drive
Port of Milwaukee
Milwaukee, WI
414/481-7000

TRANSPORTATION

* Chicago & North Western
Transportation Company
Leroy King
Glen Dietz
161 W. Wisconsin Avenue
Milwaukee, WI
414/276-1933

Chicago & North Western
Transportation Company
Richard L. Vasy
Russell J. Scott
James Ronaine
D.C. Meisner
One Northwest Center
Chicago, IL 60606
312/559-6879

Soo Line Railroad
William Thompson
120 East Broadway
Waukesha, WI 53186
414/548-9414

Soo Line Railroad
Clifford Leary
Cathryn Frankenberg
David Egertson
Soo Line Building
Box 530
Minneapolis, MN 55440
612/332-1261

LIST OF INTERVIEWEES
(continued)

TRANSPORTATION (cont'd.)

Chicago, Milwaukee, St. Paul
and Pacific Railroad
Richard Baruch
433 W. St. Paul Avenue
Milwaukee, WI 53203

Lykes Bros. Steamship Co.
Ty Cook
327 S. LaSalle Street
Chicago, IL
312/427-5713

OTHER INDUSTRIES

Miller Brewing Co.
Robert Leonard
3939 West Highland Blvd.
Milwaukee, WI 53208
414/931-2780

Johnson Wax
Larry Berg
Racine, WI 53403
414/631-2596

Vincent Boever
FTZ of Wisconsin Ltd.
8512 W. Bradley Road
Milwaukee, WI 53224
414/354-4404

PORT STAFF

RADM Roy Hoffman
James Haskell
Robert Jorgensen
Earl Anderson
Lawrence Sullivan
Beverly Strike
Michael Mathias
Diane Robinette
Lester Peterson
Alvin Brown

* Port Tenants