
Measuring the Regional Economic Impact of the Port of Cleveland's Maritime Operations

*A Study of the Cleveland-Cuyahoga County Port Authority's Facilities
and Various Private Shipping Dock Facilities Along the Cuyahoga River*

Port of Cleveland Economic Impact Study

Prepared for
The Cleveland-Cuyahoga County Port Authority

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Executive Summary

This study investigates the Port of Cleveland's economic impact on Northeast Ohio economy. **The Port of Cleveland includes the Cleveland-Cuyahoga Port Authority's facilities as well as various private shipping dock facilities along the Cuyahoga River.** The Port of Cleveland is a destination port, where most of the cargo is used by industries located in northeast Ohio. Thus, the dominant cargoes through the Port of Cleveland reflect major regional industries. For example, Ohio is the second-largest steel-producing state in the U.S. and steel is very important to Cleveland. As a result, iron ore constituted 56 percent of the total interlake tonnage handled by the Port in 1996, and steel constituted over 80 percent of the international cargo handled by the Port in 1996.

The Cleveland-Cuyahoga Port Authority was formed in 1968 by a joint resolution of the City of Cleveland and Cuyahoga County. The Port Authority's strategic mission is to assist private industry in retaining and creating jobs by providing waterborne cargo transportation services. Part of its mission is also to stimulate local economic development through financing services and other development tools in partnership with local and state development agencies and the private sector.

Four types of economic impact of the Port of Cleveland's maritime operations were calculated in this study for 1995 and 1996. One, Port of Cleveland activities created 4,518 jobs in 1995 in the Northeast Ohio region and 4,768 jobs in 1996. Two, Port activities resulted in the regional production of almost \$400 million of goods and services in 1995 and almost \$430 million in 1996. Three, Northeast Ohio's households earnings increased by \$141 million in 1995 because of Port activities and increased by \$151 million in 1996. Four, Port activities in 1995 resulted in \$8.8 million of local taxes, \$10.1 million of state taxes, and \$40.1 million of federal taxes. In 1996, Port activities resulted in \$9.4 million of local taxes, \$10.9

million of state taxes and \$43.5 million of federal taxes. Figure 1 describes the process by which the Port of Cleveland's activities affect the regional economy.

The central findings of this study indicate that the maritime operations of the Cleveland-Cuyahoga County Port Authority and the various private shipping docks located in Cleveland's downtown and Flats make a significant ongoing contribution to the regional economy. Local maritime facilities have played a strategic role in fostering the growth of local industries, especially in the manufacturing sector. With the increased importance of global markets, these port facilities could play an even greater role in local industrial development.

The Cleveland-Cuyahoga Port Authority also contributes to regional economic development through its financial assistance to large economic development projects. The Port Authority role in economic development not related to maritime operations is not included in this study. However, recent examples of financial assistance by the Port Authority include the new Applied Industrial Technologies (formerly Bearings Inc.) headquarters project and the Rock and Roll Hall of Fame and Museum. These past contributions should be recognized by local public and private sector leaders as they commence their update of the Downtown Cleveland Civic Vision Plan. Other cities have given increased attention to the economic resources and potential of their port authorities as development agents.

I. Statement of Purpose

This report presents the results of a study of the impact of the Port of Cleveland on Northeast Ohio's economy. An economic impact study provides a comprehensive means of estimating the employment, spending, personal income, and taxes which are spurred by an economic entity, in this case the facilities of the Cleveland-Cuyahoga County Port Authority and nearby private waterborne cargo handling facilities.

This study was conducted for The Cleveland-Cuyahoga County Port Authority ("Port Authority") by The Urban Center in the Levin College of Urban Affairs at Cleveland State University. Other economic impact studies conducted for Northeast Ohio's institutions by Urban Center researchers include: Cleveland State University (1992), the International Exposition Center (1994), the Cleveland Clinic Foundation (1995), and the NASA Lewis Research Center (1996).

II. Background

This section defines the term "Port of Cleveland" and provides a brief history of the Port, particularly the relationship of water transportation to the local economy.

A. Defining the Port of Cleveland

For purposes of this study, the phrase the Port of Cleveland refers to operations which involve both public and private waterborne cargo handling facilities. The public lakefront docks of the Cleveland-Cuyahoga County Port Authority handle primarily ocean-going (international) cargoes. The private docks along the Cuyahoga River handle primarily cargo shipped within the Great Lakes system (interlake). Since the goal of this project is to provide the community with an

estimate of the economic importance of the maritime industry to the region, the focus here is on the total waterborne commerce.

The lakefront facilities of the Port Authority include nine ship berths and 417,000 square feet of warehouse space, and the cargoes handled are mainly steel, heavy machinery, and general cargo. The private facilities along the Cuyahoga River for handling interlake cargo include a grain elevator owned by Cereal Food; ore and limestone docks owned by LTV Steel; a salt dock owned by Akzo-Nobel; cement docks owned by Lafarge, Medusa, and St. Mary's; stone and/or sand docks owned by Osterland, River Dock, Sand Products, Standard-Lafarge, and United Ready Mix; bulk commodities docks owned by Cuyahoga Concrete and Ontario Stone; and liquid cargo docks owned by Bituminous Products, Fleet Supplies, LTV Steel, Marathon Petroleum Company, and Reilly Industries.¹

B. Brief Port History: Relationship of Water Transportation to the Regional Economy.²

This section highlights key historical events which establish the connection between waterborne commerce and local industry. For example, improvements in port facilities, the opening of canals, the building and enlargement of locks, and increases in the size of cargo carrying ships all supported the creation and expansion of local industries. At the same time, expansion of local industries created increased demand for water transportation services and improvements.

For the first 30 years of its history, Cleveland was mainly agricultural, and

¹This is based on listings of dock facilities in *Greenwood's Guide to Great Lakes Shipping 1996*.

²The following resources were used as the basis for this section: *Cleveland's Harbor* (Ehle), *Cargo Carriers of the Great Lakes* (Lesstrang), *Great Lakes Shipping: The Vital Link for Ohio Industry* (Lake Carriers Association), *The Encyclopedia of Cleveland History* (Van Tassel and Grabowski, eds.), *Cleveland: The Making of a City* (Rose), *Great Lakes Transportation in the Eighties* (Heilmann), *Waterborne Commerce of the U.S.* (Department of the Army, U.S. Corps of Engineers), *Crain's Cleveland Business: Top Business Lists 1996*, and interviews.

manufacturing took place in small shops. Due to the nature of the commerce and the marshy, shallow original river mouth, ships were fairly small during this period (up to about 90 feet long). In 1827, the river mouth was straightened to its current site, and the Akron-Cleveland portion of the Ohio-Erie Canal was opened.³ New commodities from the south of Cleveland, including grain, lumber, salt, and coal were shipped up the canal to Cleveland for transshipment elsewhere, and a new age in water transportation was sparked. In the 1840s, the steam propeller allowed for larger cargoes, more maneuverability, and had a shallow draft, all of which increased traffic up the river. In addition, oak from central and southern Ohio helped make Cleveland one of the Great Lakes' top wooden-shipbuilding centers.

One of the most important factors in determining the future of Cleveland industry came in the 1850s and 1860s, when the Soo Canal was opened (1855) and several Cleveland entrepreneurs determined that iron ore from the fields in Michigan, Wisconsin, and Minnesota could be economically brought to Cleveland and combined with southern Ohio coal to produce iron and steel. Before the opening of the Soo, only about 25,000 tons of iron ore had been taken from the Marquette range in Michigan's Upper Peninsula. In 1860 alone 114,000 tons were mined, and the delivered cost per ton to Cleveland had dropped from \$3.00 to \$2.09. In 1856, a citizen-appointed committee studied the city's economic future. It declared that the iron industry was the city's future, and the public paid \$60,000 for the construction of a blast furnace. In 1869, Cleveland shipbuilder Peck & Masters built a 211-foot wooden ship which was the first designed specifically for carrying iron ore; it could carry 922 tons. Until 1882 iron hulls were only used for passenger ships, but then the first iron-hulled freighter, the 287-foot Onoko, was launched in Cleveland, and

³The entire route, from Cleveland to Portsmouth on the Ohio River, was completed in 1932.

by 1884 steel hulls were the standard for freighters.

Until 1867 ore was unloaded entirely by manual labor. From 1867-1880, portable steam engines helped to hoist tubs out of the hold, but the tubs were still filled and wheeled to the dock by hand. In 1880, Alexander Brown introduced the mechanical hoist. Brown's device consisted of two towers which supported a cableway. A steam-powered rope trolley suspended from the cable transported the ore tubs out over the hold, where the tubs were filled by hand and then transported via the cable back to the dock. However, the 1899 introduction of the (George) Hulett unloaders, which could scoop 17 tons at once and thus greatly cut unloading costs, is generally credited with spurring the building of the giant ships. The Hulett unloader featured a control cab mounted on top of bucket jaws, both of which were fixed at the end of a long arm connected to a base which rode on tracks on the dock. An operator in the control cab directed the jaws into the hold, grabbed the cargo, and then dumped it on the dock.

By 1900 vessels as long as 500 feet, with cargo capacities of 10,000 tons, were in service in the Great Lakes. The 600-foot carrier was introduced in 1906 and featured characteristics especially suited for Great Lakes traffic: ore chutes at each of the hatches allowed loading in two hours and no more than ten hours to unload. In 1908 the first self-unloader was introduced. By 1928 there were 43 self-unloaders on the Great Lakes, and by 1936 there were 65 unloaders. (Today all of the ore ships built are self-unloaders.) Self-unloaders cost more to build, but command rate premiums and can make faster turn-arounds, which allow them to make more trips.

Following World War II, pent-up demand led to a construction boom which depended on stone, sand, and ore. Medusa Cement enjoyed record sales for almost every year of the 1950s. Steel also experienced a long period of postwar prosperity.

In 1959, after 50 years of planning and debate, the St. Lawrence was opened, allowing ships as long as 730 feet to pass from the Great Lakes to the Atlantic Ocean, and vice versa. These ships, called “maximum lakers”, could carry as much as 40,000 tons of cargo. Railroads and eastern ports had fought to block the completion of the seaway, due to fear of competition. However, the steel industry supported the seaway’s completion because of the supplies of iron ore in eastern Canada which could not have been brought west economically without the completion of the seaway.

The 1960s and 1970s were high-tonnage decades at the Port of Cleveland. During every year in this period, total tonnage was at least 16 million tons. At least 20 million total tons were handled every year from 1964 to 1974, and iron ore shipments averaged about 16 million tons during this period. In 1970 the Poe Lock was opened in the Soo Canal. This lock was built to allow ships up to 1,100 feet to pass through it. The first “landlocked super laker”⁴ was built in 1971 and carried almost 50,000 gross tons. Table 1 displays the characteristics of the major Great Lakes Vessel types of the twentieth century. It is obvious from the table how the improvement of canals and locks has impacted on the size of ships in use.

Greater ship size resulted in decreased transportation costs. However, demand for the transportation of raw materials depends mainly on the financial condition of local industries. In the late 1970s Cleveland’s steel industry was reeling, due to high inflation, record imports, environmental regulations, lagging productivity, and rising labor costs.⁵ Tonnage handled in the Port of Cleveland fell as demand for steel fell. The year 1982 marked a postwar low, as only 8.9 million total tons passed through

⁴The term “landlocked” is used because these ships can not fit in the 730-foot locks in the Seaway. Consequently, they cannot reach the ocean.

⁵In 1979 U.S. Steel abandoned its Central Furnaces plant. In 1984 it closed the Cuyahoga Works site in Cuyahoga Heights after failed contract negotiations with the United Steelworkers.

the Port, including only 5.4 million tons of iron ore. In 1984, Jones & Laughlin merged with Republic to form LTV Steel, and demand has increased for many of its products, particularly flat-rolled steel used to make autos, appliances, and electrical equipment. Consequently, tonnage in the Port of Cleveland averaged about 14 million tons over the last half of the 1980s, and has continued to average about 14 million tons in the 1990s. Table 2 displays the tonnages and number of vessels in the Port for the period 1986-1995. In order to maximize payloads, international vessels have changed their hull configurations, resulting in fewer ships carrying equivalent amounts of cargo.

Table 1: Characteristics of Major Great Lakes Vessel Types⁶

Vessel Type	LB (('	Draft (Feet)	Cargo Tonnage	Where Sailed
Pre-Seaway "Canaller" (Lake Service)	24	14.00	3,000	Great Lakes-St. Lawrence Pre-Seaway Canal System *
Pre-Seaway "Canaller" (Lakes-Overseas Service)	24	14.00	1,600	Great Lakes-Overseas Direct via Pre-Seaway Canal System
Cuyahoga River Laker	66	25.75	18,000	Great Lakes, St. Lawrence
"Maximum Laker" (pre-1970; post-1959)	77	25.75	40,000	Great Lakes, St. Lawrence west of Sept. Isles, Quebec
"Maximum Laker" (post-1970)	11	25.75	64,000	Great Lakes, west of Welland Ship Canal
Typical Great Lakes-Overseas				
General Cargo Liner	77	26.25	9,000	Great Lakes-Overseas Direct
Typical Lake-Ocean Bulk Carrier	77	26.25	25,000	Irregular Great Lakes- Ocean Service

Note: * Obsolete since opening

Table 2: The Port of Cleveland: Number of Vessels and Tonnages, 1986-1996

Number of Vessels

Tonnages

⁶Lesstrang, Jacques, Cargo Carriers of the Great Lakes and Cleveland-Cuyahoga County Port Authority interviews.

Year	Total	Interlake	International	Total	Interlake	International
1986	784	623	161	12,407,628	11,734,444	673,184
1987	860	711	149	14,628,108	13,975,894	652,214
1988	904	760	144	14,882,148	14,287,929	594,219
1989	900	772	128	14,102,613	13,317,751	784,862
1990	959	839	120	15,176,457	14,402,535	773,922
1991	900	789	111	13,613,345	12,699,675	913,670
1992	927	831	96	13,238,128	12,802,842	435,286
1993	863	772	91	13,448,027	12,683,184	764,843
1994	969	845	124	14,378,658	13,508,989	869,669
1995	958	866	92	14,830,299	14,050,985	779,314
1996	1110	976	134	16,380,056	15,222,000	1,158,056

Source: Cleveland-Cuyahoga County Port Authority

The dominant cargoes in the Port of Cleveland in 1996 continue to reflect dominant Great Lakes industries. Ohio is the second-largest steel-producing state in the U.S. (behind Indiana), and steel is still important to Cleveland. (With about 6,400 employees in 1995, LTV Steel ranked ninth among Cuyahoga County employers, and third among non-governmental, non-medical employers. In 1994, LTV Steel ranked as the nation's third-largest steelmaker, and the second-largest producer of flat-rolled steel.) As a result, iron ore constituted 52 percent of the total tonnage handled in 1996. The cost savings of the 1000-foot carriers, which cannot navigate the Cuyahoga River, is exploited by unloading the iron ore at Lorain and using a smaller ship to transport it daily to LTV Steel. Stone constituted 28 percent of the 1996 port tonnage. It is used by the construction industry for pavement, as well as by the steel industry as a purifying agent. Of the remaining 20 percent, about 15 percent consists

of salt (the only raw material shipped out through Cleveland), cement, grain, and other bulk commodities handled at the private docks.

While water transportation competes for cargoes with the railroads, railroad and truck transportation also complement the water in important ways. Most cargo is delivered within about 75 miles of Cleveland, making Cleveland a destination port as opposed to a transit port. At a destination port, most of the cargo is used by industries located in the port region. At a transit port, most of the cargo is passing through the port on its way to other ports and industries outside the region. Since most final destinations are local, about 90 percent of the cargo leaves the Port Authority's docks by truck -- 45,000-50,000 trucks during 1996. In addition, the other 10 percent leaves in 1,000-1,500 rail cars per year, with Weirton, West Virginia a direct rail link for steel shipments. For the private docks, as much as 40 percent of the cargoes are unloaded from the ships right at the final destination, with another 35 percent continuing on by truck, and 25 percent by rail.

1. The Cleveland-Cuyahoga County Port Authority's Maritime Operations

During the nine years which had passed after the opening of the St. Lawrence Seaway in 1959, freight traffic to Cleveland via this route was low. International shippers were frustrated by the many levels of city government, which caused delays and led them to choose other ports.⁷ As a means of increasing traffic and alleviating red tape, the Port Authority was created in 1968.

The Cleveland-Cuyahoga County Port Authority was formed by a joint resolution of the City of Cleveland and Cuyahoga County. The Port Authority is an independent unit of local government, authorized under Chapter 4582 of the Ohio Revised Code.

⁷For example, it required twenty-three legislative acts and sixty administrative decisions to build Warehouse 32.

The Port Authority is managed by a nine-member policy-making Board of Directors. Six are appointed by the mayor of Cleveland, with the approval of City Council. The other three are appointed by the Board of Cuyahoga County Commissioners.

The strategic mission of the Port Authority is to assist private industry in retaining and creating jobs by providing waterborne cargo transportation services and by stimulating local economic development through financing services and other development tools in partnership with local and state development agencies, and the private sector.

While steel is the dominant cargo going in and out of the Port Authority docks, exports have also included complete steel mills, off-highway mining trucks, and industrial rubber processing equipment. Imports have included Russian plate glass, scotch, rope and twine, fluorspar, autos, marble, and coal tar.

III. Study Scope and Methods

This section discusses the scope of analysis for this study and the study methods employed to accomplish this analysis.

A. Scope of Analysis

One issue which always arises in economic impact studies is the definition of what is to be measured. Defining “the port industry” is an important concern in port studies, and has led to many different approaches. The U.S. Maritime Administration determined that the resolution of these differences was so critical that it acted in 1978 to adopt a “new and consistent” definition of the port industry to “help clarify many conceptual and analytical

inconsistencies that have plagued the industry for decades.”⁸ The U.S. Maritime Administration’s definition is used in this study for the Cleveland-Cuyahoga County Port Authority.

“Port industry is any economic activity that is directly needed in the movement of waterborne cargo. This definition not only includes the loading and discharging of ships but also the many port activities that take place beyond the piers. It includes such activities as cargo documentation, freight forwarding of waterborne cargo, marine insurance, international banking, warehousing, land feeder services, and all water carrier services. The definition does not include as part of port industry services (output) the activities of port suppliers and users such as ship repair services, fuel⁹, port machinery, and export products. While such activities are part of a port’s economic impact, they are not part of its output.”¹⁰

It is important to point out some of the implications of this definition. While some studies have included companies simply because they are located near the water (“port industries”, as opposed to “the port industry”), such companies are not considered to be part of the port industry in this study unless they are directly tied to the movement of waterborne cargo. Conversely, other companies may be located far from the water (for example, freight forwarders or trucking companies) but their activities are included here when their service or output is directly tied to the movement of waterborne cargo.

Another important aspect of this framework is that it distinguishes between the cargo-handling operations of a company (which are included) and the rest of a company’s operations (which are not included). For example, LTV Steel brings iron ore up the Cuyahoga River to make steel. The handling of the iron ore to get it to the blast furnaces is included as part of the port industry, but the steel production is not.

⁸*Economic Impact of the U.S. Port Industry, and What U.S. Ports Mean to the Economy*, U.S. Department of Commerce, Maritime Administration.

⁹In the model used in this study, fuel is considered to be part of the port industry.

¹⁰*Economic Impact of the U.S. Port Industry, and What U.S. Ports Mean to the Economy*, U.S. Department of Commerce, Maritime Administration.

B. Method

An economic impact study includes two basic steps. First, information is gathered, either through a survey or otherwise estimated, about such measures as the number of employees, payroll, taxes paid, and spending by companies in the given industry (here, the port industry) within the region of interest. These measures constitute the “direct”, or first-round, impacts of the waterborne cargo-handling industry. In the second step, additional employment, payroll, taxes, and spending which result from the direct impacts are calculated using input-output technology. These additional impacts are called the “indirect” and “induced” impacts. Indirect impacts include the spending and jobs created by companies which supply the direct activities (second-round impacts), the spending and jobs created by companies which supply the second-round activities, and so on. Induced impacts include the spending and jobs created by the spending by households whose labor supports the direct activities (second-round impacts), the spending and jobs created by the spending by households whose labor supports the second-round activities, and so on. The sum of the direct, indirect, and induced impacts constitutes the total impact.

1. Obtaining Information on Direct Impacts.

To estimate the direct impacts, we selected the Regional Science Research Corporation’s PCIO (personal computer input-output) model for use in this study.¹¹ With PCIO, the user enters tonnages by cargo type and the software calculates the direct impacts, providing three different levels of industrial aggregation for the listings of impacts. PCIO generates the direct impacts from cargo tonnages using “port translators”. A port translator uses standard correspondences between cargo tonnages and the types and amounts (per ton) of spending and employment generated by handling that cargo.¹² Another useful facet of the

¹¹Other port studies which have been done using the PCIO model include *The Economic Impact of the Maritime Industry on the Pacific Coast States*, *The Economic Impact of Commercial Navigation on the Twin Cities Area*, *The Economic Impact of the Ports of Los Angeles and Long Beach*, *The Economic Impact of the Port of Corpus Christi*, *The Economic Impact of OCS Oil and Gas Development on the Port of Long Beach*, and *The Economic Impact of the Port of New Orleans*.

¹²The PCIO port translators are based on surveys done by Mercer Management/Temple, Barker & Sloane. The survey data were aggregated by type of port. One of these aggregations was for Great Lakes ports, and was the one used for this study.

PCIO model is that the port translators can be modified somewhat to conform more to the local economy if appropriate information is available. For this study, the port translators were modified to conform more to the local economy in the areas of bunkering (taking on fuel), and the amount of inland transportation.¹³

2. Applying Input-Output Technology to Calculate Total Impacts

The PCIO input-output model was also used to calculate total impacts. Input-output technology is based on interindustry relationships, or “linkages”. These linkages form the basis for tracing the additional impacts which result from the direct impacts. For example, the water transportation sector sells a substantial portion of its services (has a strong “forward linkage”) to the blast furnaces sector, and buys substantial services (has a strong “backward linkage”) from the freight transportation arrangement sector. Therefore, when demand for the output from blast furnaces increases, this increases the demand for water transportation, most particularly the movement of iron ore and stone. In turn, the demand for freight transportation arrangement services increases in support of these additional waterborne movements. An input-output table summarizes the linkages across all sectors in the economy and captures the flows of spending which result from an initial expenditure.

Input-output tables also incorporate the spending patterns of individuals, who purchase a different mix of goods and services from those purchased by companies. In addition, while companies purchase many of the goods from companies which are located outside the region (such purchases are not counted as regional impacts), most of the labor in the region is supplied by residents of the region. In turn, these employees/residents are the major purchasers from the retail and service sectors, a high proportion of which is

¹³The following data were incorporated into the port translators (sources of the data in parentheses): Bunkering is minimal if it takes place at all. (Steve Pfeiffer, Cleveland-Cuyahoga County Port Authority) The average inland transportation distance is 25 miles. For international cargos, 90 percent also involve truck transportation, 10 percent also include rail. For interlake cargo, 40 percent unloads right at the user's premises, 25 percent is shipped by rail, and 35 percent is shipped by truck. (Steve Pfeiffer) .

supplied from within the region. Therefore, the distribution of total impacts across sectors often includes sectors which do not bear much obvious relationship to the sectors which experienced the direct impacts.

IV. Port of Cleveland Maritime Operation Economic Impacts

The direct impacts for the Port of Cleveland were estimated using the PCIO port translators, and the indirect, induced, and total impacts were estimated using the PCIO input-output technology. Table 3 displays the local data which were input into the PCIO model.¹⁴ Descriptions of the sectors listed in Tables 4-6 and Table 8 are provided in Appendix B.

Table 3: Data Input into the PCIO Model

Commodity	1995 Tonnage	1996 Tonnage
Steel	739,259	955,849

¹⁴Data for 1996 were not available until very late in the project. As a result, this report focuses on the year 1995. The model was run for both 1995 and 1996, and total impacts are reported for both years. However, detailed tables are provided only for 1995.

General	6,294	1,840
Containers	1,563	381
Bulk: International	32,198	199,986
Bulk: Interlake	14,050,985	15,222,000

Number of Shipping Company Employees: 714

Note: Bulk interlake includes the following tonnages:	1995	1996
Iron Ore	7,424,850	8,534,000
Stone	4,463,245	4,596,000
Other (salt, cement, grain, other)	2,162,890	2,092,000

A. Employment Impact

The Cleveland port industry generated 4,518 total jobs¹⁵ in Northeast Ohio in 1995, with 2,417 of these reflecting the direct impact of the port industry, and another 2,101 reflecting the indirect and induced impacts. In 1996, the port industry generated 4,768 total jobs in Northeast Ohio, with 2,570 of these reflecting the direct impact of the port industry, and another 2,198 reflecting the indirect and induced impacts. Table 4 displays the results for 1995 for the twenty-five sectors for which the PCIO model estimated the highest impacts.

The direct employment impacts were heavily concentrated in the transportation and public utilities sector (78 percent). Shipping company headquarters constituted the largest source of direct employment. Reflecting the complementary relationship between water and railroads and trucks, the direct impacts were also high in both of these land transportation connector sectors and employment was important in the transportation services sector.

In other sectors, the highest direct impacts were in the government and business services sectors.

¹⁵No distinction is made in the PCIO model between full-time and part-time jobs.

The total employment impacts were also highest in the transportation sector, but this sector constituted only 45 percent of the total employment impact, and only 7 percent of the indirect and induced employment impact. Restaurants and other eating and drinking places, business services, and real estate were the sectors in which the highest indirect and induced employment took place.

**Table 4: Employment Impact of the Port of Cleveland on Northeast Ohio, 1995
(Number of Jobs)**

	Direct	Indirect & Induced	Impact
<u>Transportation & Public Utilities</u>	1,876.3	150.9	2,027.2
Railroad transportation	240.9	4.7	245.6
Trucking & warehousing	666.1	49.2	715.3
Water transportation	148.8	19.3	168.1
Shipping company headquarters	775.6	0.0	775.6
Transportation services	42.5	25.6	68.1
<u>Agriculture & Mining</u>	0.0	9.7	9.7
<u>Construction</u>	0.0	142.3	142.3
Special trade contractors	0.0	99.4	99.4
<u>Manufacturing</u>	21.3	145.5	166.8
Printing & publishing	0.1	42.2	42.3
<u>Wholesale</u>	5.9	72.5	78.4
Wholesale: non-durable goods	5.8	48.7	54.5
<u>Retail Trade</u>	23.6	523.1	546.7
General merchandise stores	1.4	65.0	66.4
Food stores	5.8	57.6	63.4
Auto dealers & service stations	0.9	40.5	41.4
Eating & drinking places	12.3	242.9	255.2
Miscellaneous retail	2.9	83.2	86.1
<u>Finance, Insurance, & Real Estate</u>	7.5	341.9	349.4
Banking	3.7	65.0	68.7
Insurance agents & brokers	0.7	87.5	88.2
Real estate	0.1	132.0	132.1
<u>Services</u>	421.2	670.3	1,091.5
Hotels & other lodging	5.5	40.6	46.1
Personal services	13.7	47.4	61.1
Business services	348.3	198.6	546.9
Auto repair, services, & parking	38.6	50.7	89.3
Amusement & recreation	1.1	46.0	47.1
Health services	3.3	40.1	43.4
Legal services	4.2	36.9	41.1
Social services	0.0	40.0	40.0
Membership organizations	0.1	57.7	57.8
Engineering & management services	0.0	51.2	51.2
<u>Government</u>	61.2	44.5	105.7
TOTAL*	2,417.0	2,100.5	4,517.5

* Total is equal to the summation of major (underlined) industries

B. Spending Impact

In 1995 the Cleveland port industry generated \$396 million of spending in Northeast Ohio, with \$242 million of that direct impact, and \$154 million indirect and induced impact. In 1996 the port industry generated \$427 million of spending in Northeast Ohio, with \$262 million of that direct impact, and \$165 million indirect and induced impact. This means that in Northeast Ohio nearly \$400 million of goods and services were produced in 1995, and nearly \$430 million in 1996, as a result of the Port of Cleveland's maritime activities. Table 5 displays the results for 1995 for the twenty-five sectors for which the PCIO model estimated the highest impacts.

The distribution of spending across sectors is quite different for the direct impacts, when compared to the indirect and induced impacts. The direct spending impacts are heavily concentrated in the transportation and public utilities sector (86 percent), including \$79 million by shipping company headquarters. Reflecting the complementary relationship between water and railroads and trucks, the direct impacts were also high in both of these land transportation connector sectors. The impact in the transportation services sector reflects many of the activities which go on "behind the scenes", but which are still important to the movement of cargoes. In other sectors, the highest direct impacts were found in the business services sector, and in the government sector.

The total spending impacts were also highest in the transportation sector, but this sector constituted only 58 percent of the total spending impact, and only 14 percent of the indirect and induced spending impact. Indirect and induced impacts were highest in the real estate sector, followed by banking, and business services.

Table 5: Spending Impact of the Port of Cleveland on Northeast Ohio, 1995 (\$000)

	Direct	Indirect & Induced	Impact
<u>Transportation & Public Utilities</u>	208,728.3	22,194.3	230,922.6
Railroad transportation	43,233.2	849.1	44,082.3
Trucking & warehousing	47,928.0	3,558.2	51,486.2
Water transportation	34,681.4	4,510.1	39,191.5
Shipping company headquarters	79,254.0	0.0	79,254.0
Transportation services	3,490.3	1,889.2	5,379.5
Communication	37.1	5,574.7	5,611.8
Electric, gas, & sanitary services	0.0	4,555.3	4,555.3
<u>Agriculture & Mining</u>	0.0	788.4	788.4
<u>Construction</u>	0.0	5,742.7	5,742.7
Special trade contractors	0.0	3,811.7	3,811.7
<u>Manufacturing</u>	3,233.8	25,645.7	28,879.5
Food & kindred products	293.8	3,035.4	3,329.2
Printing & publishing	16.3	4,805.6	4,821.9
Transportation equipment	2,352.5	3,510.8	5,863.3
<u>Wholesale</u>	538.1	8,215.7	8,753.8
Wholesale: durable goods	3.2	3,790.3	3,793.5
Wholesale: non-durable goods	534.9	4,425.4	4,960.3
<u>Retail Trade</u>	873.8	20,375.2	21,249.0
General merchandise stores	76.7	3,428.7	3,505.4
Auto dealers & service stations	62.3	2,767.5	2,829.8
Eating & drinking places	361.5	6,921.8	7,283.3
Miscellaneous retail	96.3	2,695.7	2,792.0
<u>Finance, Insurance, & Real Estate</u>	920.2	35,146.9	36,067.1
Banking	455.9	7,781.3	8,237.2
Insurance carriers	409.1	3,616.1	4,025.2
Insurance agents & brokers	45.5	5,403.4	5,448.9
Real estate	9.7	14,549.2	14,558.9
<u>Services</u>	17,011.2	32,278.6	49,289.8
Business services	12,711.4	6,362.7	19,074.1
Auto repair, services, & parking	2,641.1	4,415.7	7,056.8
Health services	299.1	2,666.7	2,965.8
Legal services	342.7	3,002.0	3,344.7
Engineering & management services	0.4	4,837.9	4,838.3
<u>Government</u>	11,091.8	3,257.4	14,349.2
TOTAL*	\$242,396.8	\$153,595.9	\$395,992.7

*Total is equal to the summation of major (underlined) industries

C. Personal Income Impact

In 1995 the Cleveland port industry generated \$141 million of personal income in Northeast Ohio, with \$88 million of that direct impact, and \$53 million indirect and induced impact. In 1996, the port industry generated \$151 million of personal income in Northeast Ohio, with \$94 million of that direct impact, and \$57 million indirect and induced impact. This means that Northeast Ohio workers earned \$141 million in 1995 and \$151 million in 1996 as a result of the Port of Cleveland's maritime activities. Table 6 displays the results for 1995 for the twenty-five sectors for which the PCIO model estimated the highest impacts.

The direct income impacts were heavily-concentrated in the transportation and public utilities sector (83 percent), including \$34 million for shipping company headquarters. Reflecting the complementary relationship between water and railroads and trucks, the impacts were also high in both of these land transportation connector sectors. In other sectors, the highest direct impacts were found in the business services sector.

The total income impacts were also highest in the transportation sector, but this sector constituted only 56 percent of the total income impact, and only 11 percent of the indirect and induced income impact. Banking and business services were the sectors which experienced the highest indirect and induced impact.

Table 6: Income Impact of the Port of Cleveland on Northeast Ohio, 1995 (\$000)

	Direct	Indirect & Induced	Impact
<u>Transportation & Public Utilities</u>	72,658.7	6,042.7	78,701.4
Railroad transportation	9,340.4	184.4	9,524.8
Trucking & warehousing	20,034.1	1,487.3	21,521.4
Water transportation	7,913.7	1,029.1	8,942.8
Shipping company headquarters	33,626.4	0.0	33,626.4
Transportation services	1,686.6	938.3	2,624.9
Communication	8.3	1,304.5	1,312.8
<u>Agriculture & Mining</u>	0.0	140.0	140.0
<u>Construction</u>	0.0	3,948.0	3,948.0
Special trade contractors	0.0	2,809.2	2,809.2
<u>Manufacturing</u>	1,204.5	6,940.8	8,145.3
Printing & publishing	4.8	1,829.7	1,834.5
Transportation equipment	931.1	797.5	1,728.6
<u>Wholesale</u>	180.3	2,364.1	2,544.4
Wholesale: durable goods	0.7	879.0	879.7
Wholesale: non-durable goods	179.5	1,485.2	1,664.7
<u>Retail Trade</u>	335.8	7,561.9	7,897.7
General merchandise stores	28.2	1,127.1	1,155.3
Food stores	93.0	884.1	977.1
Auto dealers & service stations	25.3	1,118.1	1,143.4
Eating & drinking places	144.1	2,740.7	2,884.8
Miscellaneous retail	40.3	1,115.2	1,155.5
<u>Finance, Insurance, & Real Estate</u>	371.6	10,066.1	10,437.7
Banking	217.7	3,579.0	3,796.7
Security & commodity brokers	0.0	1,526.2	1,526.2
Insurance carriers	133.2	1,186.6	1,319.8
Insurance agents & brokers	20.1	2,403.0	2,423.1
Real estate	0.7	1,023.7	1,024.4
<u>Services</u>	11,025.3	14,335.0	25,360.3
Business services	9,315.9	3,514.5	12,830.4
Auto repair, services, & parking	882.4	1,099.2	1,981.6
Health services	170.4	1,489.4	1,659.8
Legal services	212.3	1,856.0	2,068.3
Engineering & management services	0.1	1,729.0	1,729.1
<u>Government</u>	1,948.1	1,574.3	3,522.4
TOTAL*	\$87,724.2	\$52,965.6	\$140,689.8

*Total is equal to the summation of major (underlined) industries

D. Tax Impact

Table 7 displays the tax impacts estimated by the PCIO model. In 1995, the Cleveland port industry generated \$8.8 million of local taxes, \$10.1 million of state taxes, and \$40.1 million of federal taxes.

Table 7: Tax Impact of the Port of Cleveland (\$000)

Type of tax	Impact	Impact
	1995	1996
Local	\$8,778.8	\$9,444.1
State	\$10,144.6	\$10,922.9
Federal	\$40,143.0	\$43,497.4

E. Summary of Impacts

Table 8 displays a summary of the employment, spending, and income impacts of the Cleveland port industry for 1995. Sectors are listed if they appeared in at least one of Tables 4-6. **In 1995**, the Port of Cleveland's impact on Northeast Ohio was:

- 4,518 jobs
- \$396 million of spending
- \$141 million of personal income

In addition, the following amounts of taxes were generated:

- \$8.8 million of local taxes, \$10.1 million of state taxes, and \$40.1 million of federal taxes

In 1996, the Port of Cleveland's impact on Northeast Ohio was:

- 4,768 jobs
- \$427 million of spending
- \$151 million of personal income

In addition, the following amounts of taxes were generated:

- \$9.4 million of local taxes, \$10.9 million of state taxes, and \$43.5 million of federal taxes

**Table 8: Summary Table of Impacts of the Port of Cleveland on
Northeast Ohio, 1995**

	Employment (Jobs)	Spending (\$000)	Income (\$000)
<u>Transportation & Public Utilities</u>	2,027.2	230,922.6	78,701.4
Railroad transportation	245.6	44,082.3	9,524.8
Trucking & warehousing	715.3	51,486.2	21,521.4
Water transportation	168.1	39,191.5	8,942.8
Shipping company headquarters	775.6	79,254.0	33,626.4
Transportation services	68.1	5,379.5	2,624.9
Communication	23.5	5,611.8	1,312.8
Electric, gas, & sanitary services	12.6	4,555.3	652.7
<u>Agriculture & Mining</u>	9.7	788.4	140.0
<u>Construction</u>	142.3	5,742.7	3,948.0
Special trade contractors	99.4	3,811.7	2,809.2
<u>Manufacturing</u>	166.8	28,879.5	8,145.3
Food & kindred products	13.5	3,329.2	563.6
Printing & publishing	42.3	4,821.9	1,834.5
Transportation equipment	26.1	5,863.3	1,728.6
<u>Wholesale</u>	78.4	8,753.8	2,544.4
Wholesale: durable goods	23.9	3,793.5	879.7
Wholesale: non-durable goods	54.5	4,960.3	1,664.7
<u>Retail Trade</u>	546.7	21,249.0	7,897.7
General merchandise stores	66.4	3,505.4	1,155.3
Food Stores	63.4	2,778.5	977.1
Auto dealers & service stations	41.4	2,829.8	1,143.4
Eating & drinking places	255.2	7,283.3	2,884.8
Miscellaneous retail	86.1	2,792.0	1,155.5
<u>Finance, Insurance, & Real Estate</u>	349.4	36,067.1	10,437.7
Banking	68.7	8,237.2	3,796.7
Security & commodity brokers	19.4	2,540.0	1,526.2
Insurance carriers	30.0	4,025.2	1,319.8
Insurance agents & brokers	88.2	5,448.9	2,423.1
Real estate	132.1	14,558.9	1,024.4
<u>Services</u>	1,091.5	49,289.8	25,360.3
Hotels & other lodging	46.1	1,665.8	628.1
Personal services	61.1	1,645.5	733.3
Business services	546.9	19,074.1	12,830.4
Auto repair, services, & parking	89.3	7,056.8	1,981.6
Amusement & recreation	47.1	1,411.7	725.3
Health services	43.4	2,965.8	1,659.8
Legal services	41.1	3,344.7	2,068.3
Social services	40.0	1,881.7	697.1
Membership organizations	57.8	2,120.9	817.3
Engineering & management services	51.2	4,838.3	1,729.1
<u>Government</u>	105.7	14,349.2	3,522.4
TOTAL*	4,517.5	\$395,992.7	\$140,689.8

*Total is equal to the summation of major (underlined) industries

V. Conclusions

The central findings of this study indicate that the maritime operations of the Cleveland-Cuyahoga County Port Authority and the various private shipping docks located in Cleveland's downtown and Flats areas make a significant ongoing contribution to the regional economy. Local maritime facilities have played a strategic role in fostering the growth of local industries, especially in the manufacturing sector. As global markets increase in importance to local manufacturers, these port facilities could play an even greater role in local industrial development.

Three "waves" of benefit are generated by local port activities to the region. First, these operations directly benefit businesses using water transportation services in the region by providing them with a vital source of competitive advantage. Second, various industries linked to port-using industries benefit indirectly through business opportunities generated by shipping activities. Finally, the general community, including local households, benefits from the jobs, income, and tax revenues generated by local port facility operations.

Cleveland and its surrounding region have made considerable progress in revitalizing their economic bases in recent years. This progress has been acknowledged by several national and international observers.¹⁶ The Cleveland-Cuyahoga County Port Authority and various private shipping docks in the area have contributed in a positive way to central city and regional economic revitalization. Cleveland's Downtown and Flats areas have in many ways led this revitalization effort, as numerous large-scale development projects have taken shape.

¹⁶ The National Council for Urban Economic Development (CUED) decided to hold its 1996 Annual Conference in Cleveland because of the city's and region's national recognition as a successful model for urban revitalization. The conference featured many of the city and region's recent development accomplishments. Many earlier awards have been given to the city for these same achievements.

The Port Authority, in its traditional role as a high-quality maritime service provider, and in its new role as an economic development catalyst, could contribute much to future local economic development efforts. The maritime operations contribute significantly to the growth and development of the regional economy. The Port Authority's recent financial assistance to the new Applied Industrial Technologies headquarters development project illustrates this potential. These contributions and future potential should be recognized as local public and private sector leaders start efforts to update the Cleveland Downtown Civic Vision plan. Cities such as St. Paul, Baltimore, New York, Long Beach, Seattle, New Orleans, and San Diego have given increased attention to the economic resources and potential of their port authorities as development agents. Similar recognition should be given by local public and private sector officials to the Cleveland-Cuyahoga County Port Authority as a strategic development resource.

Appendix A: Sources

This section includes citations for sources used in the report. It is divided into two sections: published sources and interviews.

1. Published sources

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What U.S. Ports Mean to the Economy, U.S. Department of Commerce, Maritime Administration, 1978.

2. Interviews

Cleveland-Cuyahoga County Port Authority Personnel:

Gary Failor, Executive Director

Steven L. Pfeiffer, Maritime Director

Lynda P. Sudderberg, Director of Administration

Nancy C. Cronin, International/Government Liaison

Cheryl L. Davis, Director of Strategic Development

John D. Baker, International Vice President, International Longshoremen's Association, AFL-CIO

Jim Cox, Flats Industry

Patrick Manley, former Vice President, LTV Steel

Appendix B: Listing of Industrial Sector Components

This section provides a summary description of the industrial sectors listed in Tables 4-6 and Table 8. With the exception of the transportation and public utilities sectors (numbers 5-11 below), sectors are listed in the order in which they appear in the summary table (Table 8). Much of the text which follows is taken from the book Standard Industrial Classification Manual 1987. Additional detail can be found in that book. A few Greater Cleveland employers are listed as examples for each sector.

1. Special trade contractors (SIC major group 17). Activities include painting (including bridge painting and traffic lane painting), electrical work (including work on bridges, power lines, and power plants), carpentry work, plumbing, heating, air-conditioning, roofing, and sheet metal work. Greater Cleveland employers: Lake Erie Electric; Industrial First, Inc.; A. Allega Cement Contractors, Inc., Donley's, Inc.; Kelley Steel Erectors, Inc.

2. Food & kindred products (SIC major group 20). Includes establishments manufacturing or processing foods and beverages for human consumption, and certain related products, such as manufactured ice, chewing gum, vegetable fats and oils, and prepared feeds for animals and fowls. Greater Cleveland employers: Nestle Frozen Food Co., J.M. Smucker Co., Continental Baking Co., Great Lakes Confectionery.

3. Printing and publishing (SIC major group 27). Includes establishments engaged in printing by one or more common processes, such as letterpress; lithography (including offset), gravure, or screen; and those establishments which perform services for the printing trade, such as bookbinding and platemaking. This major group also includes establishments engaged in publishing newspapers, books, and periodicals, regardless of whether or not they do their own printing. Greater Cleveland employers: American Greetings Corp., The Plain Dealer, The Akron Beacon Journal.

4. Transportation equipment (SIC major group 37). Includes establishments engaged in manufacturing equipment for transportation of passengers and cargo by land, air, and water. Products include motor vehicles, aircraft, guided missiles and space vehicles, ships, boats, and railroad equipment. Greater Cleveland employers: Ford Motor Co., General Motors, TRW Inc.

5. Railroad transportation (SIC major group 40). Includes establishments furnishing transportation by line-haul railroad, and switching and terminal establishments. Greater Cleveland employers: Consolidated Rail Corp., Cuyahoga Valley Railroad Co.

6. Trucking and warehousing (SIC major group 42). Includes establishments furnishing local or long-distance trucking or transfer services, or those engaged in the storage of farm products, furniture, and other household goods, or commercial goods of any nature. The operation of terminal facilities for handling freight, with or without maintenance facilities, is also included. Greater Cleveland employers: United Parcel Service, Inc.; Roadway Express Inc.; Consolidated Freightway.

7. Water transportation (SIC major group 44). Includes establishments engaged in freight and passenger transportation on the open seas or inland waters, and establishments furnishing such incidental services as lighterage, towing, and canal operation. Greater Cleveland employers: Cleveland Stevedore; Cleveland-Cuyahoga County Port Authority; Ceres Terminals. See also Shipping company headquarters below.

8. Shipping company headquarters (not a major SIC group). This grouping constitutes a separate grouping within the water transportation sector made necessary by the fact that the purchases made by a shipping company (for example, pens and computers) are different from the rest of the water transportation sector (for example, fuel). They are input separately into the PCIO model and listed separately in the table for this reason but are directly related to the water transportation sector and most would likely not exist without it. Greater Cleveland employers: Oglebay Norton; Interlake Steamship; Cement Transit Co.; Cleveland Tankers. See also Water transportation above.

9. Transportation services (SIC major group 47). Includes establishments furnishing services incidental to transportation, such as forwarding and packing services, and the arrangement of passenger and freight transportation. Greater Cleveland employers: Yellow Freight System, Inc.; Industrial Transport, Inc.; U.S. Travel Corp.

10. Communication (SIC major group 48). Includes establishments furnishing point-to-point communications services, whether intended to be received aurally or visually; and radio and television broadcasting. Also includes establishments primarily engaged in providing paging and beeping services and those engaged in leasing telephone lines or other methods of telephone transmission. Greater Cleveland employers: Ameritech Ohio; Cellular One; WJW-TV8; Cablevision.

11. Electric, gas, and sanitary services (SIC major group 49). Includes establishments engaged in the generation, transmission, and/or distribution of electricity, gas, or steam. Also includes other types of services, such as transportation, communications, and refrigeration; water and irrigation systems, and sanitary systems engaged in the collection and disposal of garbage, sewage, and other wastes by means of destroying or processing materials. Greater Cleveland employers: Cleveland Electric Illuminating Co.; The East Ohio Gas Co.; Northeast Ohio Regional Sewer District; Ross Co.

12. Wholesale: durable goods (SIC major group 50). Includes establishments primarily engaged in the wholesale distribution of durable goods. Examples include motor vehicles and motor vehicle parts and supplies; furniture and homefurnishings; lumber and other construction materials; professional and commercial equipment and supplies; metals and minerals, except petroleum; electrical goods; hardware and plumbing and heating equipment and supplies; and machinery, equipment, and supplies. Greater Cleveland employers: Bowman Distribution, division of Barnes Group, Inc.; Forest City/Babin Co.; Xerox Corp.; Digital Equipment Corp.; A.M. Castle & Co.; Premier Industrial Corp.; Bearings Inc.

13. Wholesale: non-durable goods (SIC major group 51). Includes establishments primarily engaged in the wholesale distribution of nondurable goods. Examples include paper and paper products; drugs, drug proprietaries, and druggists' sundries; apparel, piece goods, and notions; groceries and related products; farm-product raw materials; chemicals and allied products; petroleum and petroleum products; and beer, wine, and distilled beverages. Greater Cleveland employers: Zellerbach; Fox Meyer Corp.; Universal Fuller Co.; SYSCO Food Services Cleveland, Inc.; A&W Foods, Inc.; Fairmont Snacks Group, Inc.; House of LaRose Akron & Cleveland; The Blonder Co.; The Astrup Co.

14. General merchandise stores (SIC major group 53). Includes retail stores which sell a number of lines of merchandise, such as dry goods, apparel and accessories, furniture and homefurnishings, small wares, hardware, and food. Stores in this group are known by names such as department stores, variety stores, general merchandising stores, and general stores. Greater Cleveland employers: Dillard Department Stores; Woolworth Co.; U.S. Merchandise Co.

15. Food stores (SIC major group 54). Includes retail stores primarily engaged in selling food for home preparation and consumption. Greater Cleveland employers: Finast Supermarkets; Miles Farmer's Market, Inc.; Sno-White Donut Co., Inc.

16. Auto dealers and service stations (SIC major group 55). Includes retail dealers selling new and used automobiles, boats, recreational vehicles, utility trailers, and motorcycles including mopeds; those selling new automobile parts and accessories; and gasoline service stations. Automobile repair shops maintained by establishments engaged in the sale of new automobiles are also included. Greater Cleveland employers: Motorcars Group; Forest City Auto Parts Co.

17. Eating and drinking places (SIC major group 58). Includes retail establishments selling prepared foods and drinks for consumption on the premises; and also lunch counters and refreshment stands selling prepared foods and drinks for immediate consumption. Greater Cleveland employers: Brown Derby, Inc.; Elias Brothers Big Boy Restaurants; Premier Restaurant Management Co.

18. Miscellaneous retail (SIC major group 59). Includes retail establishments, not elsewhere classified. These fall into the following categories: drug stores, liquor stores, used merchandise stores, miscellaneous shopping goods stores, nonstore retailers, and fuel dealers. Greater Cleveland employers: Discount Drug Mart; Office Max; Osterman's, Inc.; Fabri-Centers of America, Inc.; TransAmerica Mailings, Inc.; E.B. Brown Optical Co.

19. Banking (SIC major group 60). Includes institutions that are engaged in deposit banking or closely related functions, including fiduciary activities. Greater Cleveland employers: Federal Reserve Bank of Cleveland; Key Corp and Society National Bank; National City Bank; Star Bank; Charter One Bank, FSB; Transohio Savings Bank FSB Inc.

20. Security and commodity brokers (SIC major group 62). Includes establishments engaged in the underwriting, purchase, sale, or brokerage of securities and other financial contracts on their own account or for the account of others; and exchanges, exchange clearinghouses, and other services allied with the exchange of securities and commodities. Greater Cleveland employers: McDonald & Co. Securities, Inc.; Dean Witter Reynolds, Inc.; Smith Barney.

21. Insurance carriers (SIC major group 63). Includes carriers of insurance of all types, including reinsurance. Greater Cleveland employers: Victoria Financial Corp.; Blue Cross & Blue Shield Mutual of Ohio; The Progressive Corp.; Chicago Title Insurance Co.; Westfield Co.

22. Insurance agents and brokers (SIC major group 64). Includes agents and brokers dealing in insurance, and also organizations offering services to insurance companies and to policyholders. Greater Cleveland employers: Allstate Insurance Co.; Central Reserve Life Insurance; Capitol American Life Insurance Co.

23. Real estate (SIC major group 65). Includes real estate operators, and owners and lessors of real property, as well as buyers, sellers, developers, agents, and brokers. Greater Cleveland employers: Forest City Enterprises, Inc.; Smythe, Cramer Relocation Center; Guardian Title & Guaranty Agency, Inc.; JTO Inc.

24. Hotels and other lodging (SIC major group 70). Includes commercial and noncommercial establishments engaged in furnishing lodging, or lodging and meals, and camping space and camping facilities. Greater Cleveland employers: Marriott Hotels; Stouffer Hotel Co.; Harley Hotels, Inc.

25. Personal services (SIC major group 72). Includes establishments primarily engaged in providing services generally to individuals, such as laundries, drycleaning plants, portrait photographic studios, and beauty and barber shops. Also included are establishments operating as industrial launderers and those primarily engaged in providing

linen supply services to commercial and business establishments. Greater Cleveland employers: Cintas Corp.; Aratex Services, Inc.; Morgan Services, Inc.

26. Business services (SIC major group 73). Includes establishments primarily engaged in rendering services, not elsewhere classified, to business establishments on a contract or fee basis, such as advertising, credit reporting, collection of claims, mailing, reproduction, stenographic, news syndicates, computer programming, photocopying, duplicating, data processing, services to buildings, and help supply services. Greater Cleveland employers: Meldrum & Fewsmith Communications, Inc.; Patrick Media Group, Inc.; The Geon Co.; Trans Union Corp.; R.L. Polk & Co.; Original America, Inc.; Saw, Inc.; Superior Staffing, Inc.; TempsPlus; IBM Corp.; Ceridian Network Services; Dun & Bradstreet, Inc.; LDI Corp.; Unisys Corp.; Pinkertons, Inc.; Industrial Security Service, Inc.; The Strang Companies.

27. Auto repair, services, and parking (SIC major group 75). Includes establishments primarily engaged in furnishing automotive repair, rental, leasing, and parking services to the general public. Greater Cleveland employers: National Auto Credit, Inc.; AMPCO System Parking; Speedy Muffler King; AAA Ohio Motorists Association.

28. Amusement and recreation (SIC major group 79). Includes establishments engaged in providing amusement or entertainment services, not elsewhere classified. Greater Cleveland employers: Cleveland Ballet; Total Event Services, Inc.; The Cleveland Orchestra; International Management Group; Thistledown Racing Club, Inc.; Cleveland Skating Club; Geauga Lake, Funtime Parks, Inc.; Firestone Country Club; Ohio Lottery Commission.

29. Health services (SIC major group 80). Includes establishments primarily engaged in furnishing medical, surgical, and other health services to persons. Includes individual practitioners, group clinics in which a group of practitioners is associated for the purpose of carrying on their profession, and clinics which provide the same services through practitioners who are employees. Greater Cleveland employers: Lutheran Medical Center; PSI Affiliates, Inc.; Menorah Park Center for Aging; Manor Care; Interim Healthcare of Northeast Ohio; Cleveland Clinic Foundation; Windsor Hospital; Edwin Shaw Hospital; Clinical Health Laboratories, Inc.; Affordable Home Health Care, Inc.; Nursefinders of Cleveland.

30. Legal services (SIC major group 81). Includes establishments which are headed by members of the bar and are engaged in offering legal advice or legal services. Greater Cleveland employers: Jones, Day, Reavis & Pogue; Thompson, Hine & Flory; Squire, Sanders & Dempsey.

31. Social services (SIC major group 83). Includes establishments providing social services and rehabilitation services to those persons with social or personal problems

requiring special services and to the handicapped and the disadvantaged. Also included are organizations soliciting funds to be used directly for these and related services. Greater Cleveland employers: The Benjamin Rose Institute; Goodwill Industries of Akron; Berea Children's Home; Weaver Industries.

32. Membership organizations (SIC major group 86). Includes organizations operating on a membership basis for the promotion of the interests of their members. Included are organizations such as trade associations, professional membership organizations, labor unions and similar labor organizations, and political and religious organization. Greater Cleveland employers: Service Employees International Union, Local 47; ASM International; Breckinridge Village; Catholic Diocese of Cleveland.

33. Engineering and management services (SIC major group 87). Includes establishments primarily engaged in providing engineering, architectural, and surveying services; accounting, auditing, and bookkeeping services; research, development, and testing services; and management and public relations services. Greater Cleveland employers: Morrison Knudson Corp., MK Engineering & Construction; Ernst & Young; Ricerca, Inc.; Solar Testing Labs, Inc.; Andersen Consulting.

34. Government (SIC major groups 91-97). Includes offices of executives, legislative bodies, and general government offices, not elsewhere classified; government establishments in justice, public order, and safety; government establishments primarily engaged in public finance, taxation, and monetary policy; government establishments primarily engaged in the administration of human resource programs; government establishments primarily engaged in the administration of environmental quality and housing programs; government establishments primarily engaged in the administration of economic programs; and government establishments primarily engaged in national security and international affairs. Greater Cleveland employers: Federal Government; State of Ohio; Cuyahoga County; City of Cleveland; Cuyahoga County Board of Mental Retardation and Development; Cuyahoga Metropolitan Housing Authority; U.S. Coast Guard; NASA.