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Baltimore Harbor Energy Facility Study
Volume II
Harbor Area Studies
Localized Energy Impacts

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CHAPTER 1

IMPACTS OF CHANGES IN SHIPPING METHODS, CARGO TRENDS AND TECHNIQUES ON LAND USES

TRENDS IN CARGO AND THE IMPLICATIONS FOR FUTURE LAND USE

Throughout the history of the port, land use decisions have resulted primarily from demands made by a specific type of trade technology. Until the 1950's and 60's railroads dominated much of the land area adjacent to the shoreline because they served as the main transportation mode. Finger piers lined the waterfront to service cargo movement which was dominated by break-bulk goods. Cargo was not containerized in standard units and was loaded directly to or from the pier and onto a train for long hauls or small trucks for local delivery. In many cases the entire capacity of a ship could be handled on the pier or in an adjacent warehouse. The loading capacity of ore and coal piers was well below the 2,000- 6,000 tons per hour now available. Industry located at the water's edge to send or receive goods on ships or use water from the harbor for production or discharge of by-products and effluents. Because the demand for land on the shoreline, which had direct access to employees, raw materials and other needs was in short supply, industry utilized every available parcel for production purposes. Large parking lots for employees, truck shipments, and containers were not necessary as they are now. Huge quantities of vacant land and railyards for storage of ore and coal, which are needed as backup to rapidly load today's vessels, were not in demand. This smaller scale of shipping and manufacturing technology was responsible for the development patterns found in Fells Point, Canton, Locust Point and the Inner Harbor before redevelopment (See Figure #1)

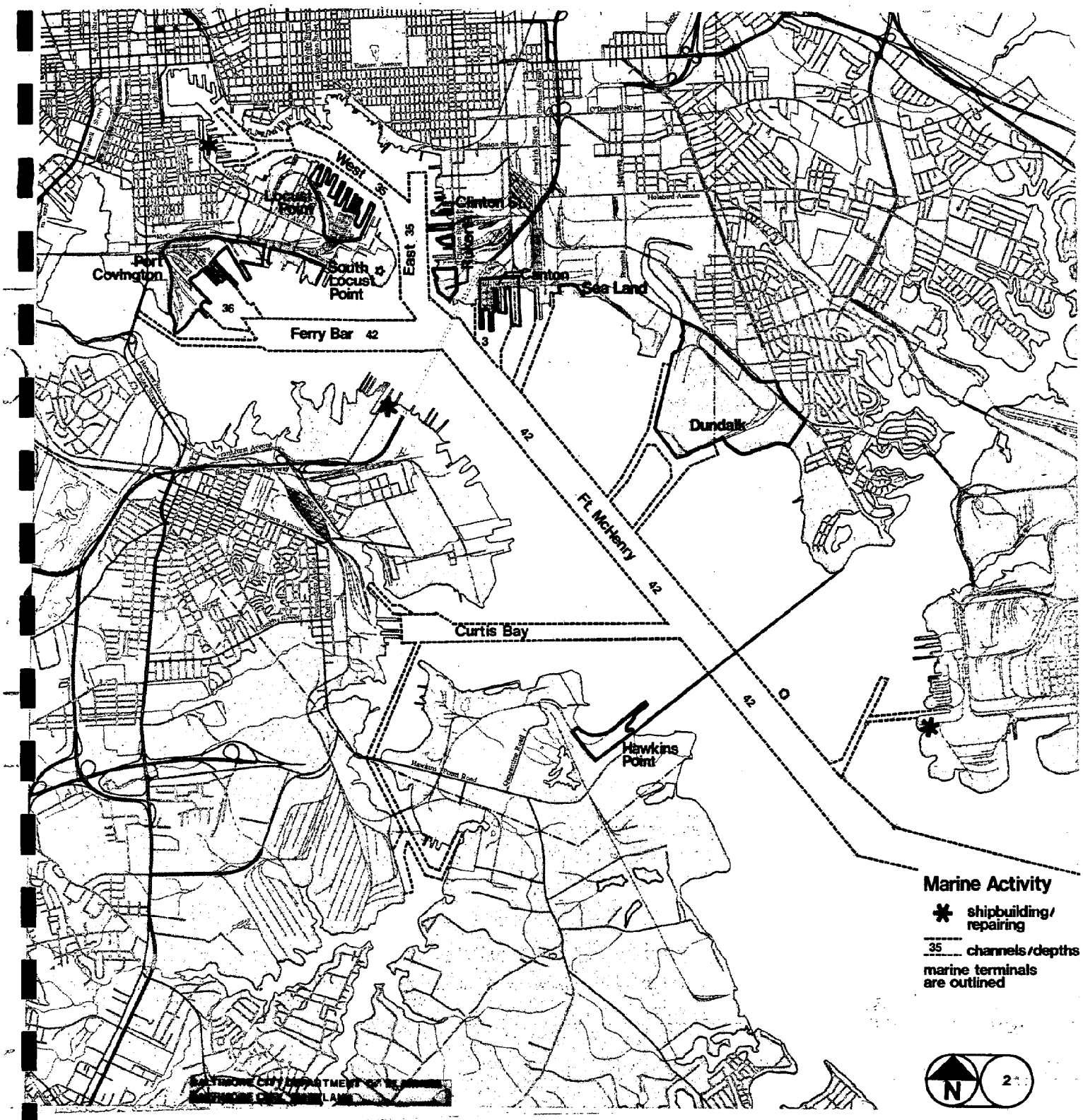
The technology of trade has had dramatic impacts on the use and configuration of land in the Port in the past fifteen years. Container facilities, specialized auto import yards, giant grain, coal, and ore piers, high capacity cranes, consolidating sheds are terms and structures which were rare prior to the early 1960's. Each of these requires specific land configurations and acreage which dramatically change the shoreline and require large scale support services.

The shoreline and land area of the harbor have undergone and will undergo major changes in response to supplying new facilities for Baltimore's shipping industry. Container facilities which require large amounts of back-up space, are often created by filling water area and are dependent on truck transportation and access to adequate highways.

Since the early 1960's, when the Port of Baltimore took an early lead in the development of container facilities, over 600 acres has been devoted to this method of cargo handling. This involves almost 10% of the total land area within the City's coastal zone. Dundalk, Sea-Land, and the South Locust Point Marine Terminals have altered not only the land configuration of the shoreline but have necessitated transportation networks which have never before been required. These facilities also directed the future operations of the Port towards a specific type of market and trade.

Decisions to continue and expand this trade have very real implications on the land and shoreline of the harbor, on the transportation network, the labor market and adjacent land uses. Construction of the proposed Masonville Marine Terminal will have dramatic impacts on the harbor's environment. (See Figure #2) The Masonville Marine Terminal, which will require filling approximately 190 acres of water, will be developed to meet the projected needs of an expanding container and general cargo market. The Hawkins Point Marine Terminal is currently proposed to respond to a very specific need, the increasing importation of automobiles. Each of these facilities will require a certain response by railroads, highways and access roads, truck transport and support services. Each facility will also generate, along with the required services, very real impacts on adjacent land uses, communities and the water of the harbor. The Maryland Port Administration also plans to continue to improve the North Locust Point Marine Terminal, expand the Clinton Street Pier and complete the addition of 2 berths at Dundalk. (See Figure #2) Private shippers will also require additional land and facilities to meet expected increases in general cargo, ore, coal and grain. Several facilities, e.g. Western Maryland Railway's Port Covington Yard, the B&O's Curtis Bay Yard, and Indiana Farm Bureau Cooperative Association's grain processing plant currently utilize all available capacity and/or land for existing operations. Planned expansion will require some additional land, more efficient equipment to increase productivity, and improve access for shipments.

The Maryland Port Administration's report, Port of Baltimore, Opportunities, Performance, Forecasts, Impacts, 1977, is an indication of the direction that agency forecasts for the Port. Increases in general cargo, container trade and importation of automobiles will dominate the demand for land development, new land created by fill and expansion of existing facilities. The planned 50' Federal channel also gives a direction to the anticipated requirements of some segments



West 35
Locust Point
Clinton St.
East 35
Port Covington
South Locust Point
Canton
Sea Land
36
Ferry Bar 42
3
Dundalk
42
Ft. McHenry
42
Curtis Bay
42
Hawkins Point
Marine Activity
shipbuilding/ repairing
35 channels/depths
marine terminals are outlined
N
2

of bulk goods. Although ore shipments are expected to increase, much of this will be reflected in the additional tonnage of ships calling on Bethlehem Steel's Sparrows Point Plant. However, some increased need for open storage will be required, possibly in the Canton and Fairfield areas. Indications from the operators of petroleum storage facilities suggest that there will be no additional tanks necessary. Increased demands, if they occur, can be met by greater flow--through to delivery trucks and some additional barge trade.

Forecasting the direction of a major port is a complex task and requires the co-ordination of many areas of expertise. Even more difficult is a determination of what facilities will be required to meet future need, when they will be needed, the subsequent impacts on the port, the use of land and the demands to be placed on the local jurisdictions. The first step in this process is an open discussion of issues and an evaluation by private, local, State, and Federal interests of the direction and capabilities of the Port of Baltimore.

MITIGATION OF NEGATIVE IMPACTS FROM DEVELOPMENT OF PORT FACILITIES

Development and operation of port facilities often result in negative impacts to the local jurisdiction. Port facilities, depending on ownership and operation, may yield little or no taxes while demanding increased operating costs for the local jurisdiction to maintain highways, mitigate impacts caused by an increase in vehicular movement through commercial areas and communities and providing fire and police protection. Private development can also have the same end result. The B&O and other railroads are exempt from property taxes on holdings in the State of Maryland, much of the apparatus used for bulk goods transfer and storage is classified as equipment, not personal property, and vacant land, periodically used for open storage returns very little to the City.

Environmental

Expanded and/or new marine terminals and industry often require filling portions of the harbor. The harbor has experienced a considerable amount of filling during its operation of over two-hundred years. The Inner Harbor, portions of Fells Point, South Locust Point, the Dundalk Marine Terminal, Reedbird Island and landfill, Sparrows Point B&O/Kennecott, Patapsco Treatment Plant have expanded on fill or utilized the harbor for disposal. Marginal marine terminals require a maximum amount of frontage for berths, which is often provided by filling. While these are generally productive uses for the port and water related the harbor's water has also served as a disposal site for production by-products, waste disposal, domestic landfills and as a source of creating cheap land.

The impacts of filling the harbor vary with each project and are complex. Removal of water volume from the harbor decreases its flushing ability, removes habitat for aquatic life and increases the difficulty of returning the harbor to an acceptable level of water quality.

Use of land adjacent to the port also impacts water quality. Runoff from paved surfaces, production facilities and storage areas usually discharge into the harbor. Facilities which are poorly maintained are often a major source of water pollution, through runoff and industrial accidents. Open storage of ores, coal, fertilizer operations, railyards etc. are significant contributors to water pollution in the Canton, Locust Point, Fairfield and Curtis Bay areas.

Certain specific operations also periodically contribute to water pollution. Discharging of ships tanks, although prohibited, sanding of ships hulls while in drydock, airborne particles from grain or coal loading etc. also contribute to pollution of the harbor's waters.

Surveys[1] of fugitive particulate emmissions in the harbor area indicate that appropriate standards are exceeded by a factor of two or less. The major sources are wind and vehicle generated fugitive particulate emmissions from dirt and gravel road surfaces. Approximately 50% of the emmissions are from sources including cornstarch from harbor grain transfer operations in the Locust Point area, slag particulate probably from operations within and around Bethlehem Steel plant at Sparrows Point, and sulfate generated by a combination of nearby operations and distant combustion of sulfurbearing fuels. Because control methods have a relatively high percentage of efficiency, it is reasonable for operations within the Port to reduce fugitive emmissions to a level of compliance. These controls are essential for the health of workers in the port and adjacent residents which are subjected to non-conpliance levels.

[1]GEOMET, Inc., A Particulate Matter Study for the Metropolitan Baltimore Intrastate Air Quality Control Region

Development of Adequate Compensation to Jurisdictions with Tax Exempt Port Facilities

Certain properties in the port are totally tax exempt while others, although tax exempt, make a payment to the City in lieu of taxes. This is usually based on the amount paid in taxes for the land prior to the development of the port facility, which often is insignificant in comparison to the value of the improvements. As an example, the site of the proposed Masonville Terminal currently returns approximately $100,000/year to the City in taxes. Although the Maryland Port Administration plans to develop a major marine terminal which will represent an investment of between 125-150 million dollars, the City will likely not receive any increase over the current taxes. However, the private, port industrial, and commercial sectors, which are also maritime oriented, must carry a full responsibility through taxes. The MPA argues that because the port collectively benefits the City and State through jobs and various secondary impacts, publicly developed facilities should not be required to compensate a local jurisdiction through taxes. However, there is a large segment of the Port, representing the private maritime and industrial sector, which also provides numerous jobs and secondary benefits, which do pay their full share of taxes. While the MPA includes the private maritime and industrial sector in figures to illustrate the tremendous impact the port has on the State, and local economy, it does not include those interests in enjoying the special tax status and access to capital funds available to this State agency.

The private port operator seems to be operating under two disadvantages. The first, places the private sector in the position of competing with a public agency which has access to State funds for large capital developments. The second requires the private shipper or industry to pay full taxes while the major competitor, the State agency pays no taxes, often collects and keeps that portion of the taxes designated for the jurisdiction which is included in the leasing of space or terminal, or makes a payment in lieu of taxes. A method should be developed to equalize the fiscal responsibility to a local jurisdiction carried by the MPA and an equitable distribution of the tax burden assumed by private and public port interests.

Provisions of Adequate Rail and Highway Systems

An efficient port is dependent on a transportation system which is balanced, up-to-date and flexible enough to provide services to the wide variety of users. However, the reality of the efficient movement of goods in the Port of Baltimore is burdened by a rail system operated by several companies, some with fragmented responsibilities and outdated facilities, an, as yet, incomplete Interstate highway system, many local streets either well beyond capacity or in poor condition, conflicts between truck routes and residential areas and a port which has terminal facilities separated by the harbor itself requiring several transfers to move goods to their users. The following identifies, in greater detail, major issues in two functional areas.

Highway

What are the responsibilities of the public and private terminal operator and developer to provide adequate access to and from a facility and deal with any negative impacts associated with increased traffic?

Port facilities, especially general cargo and container terminals are heavily dependent on truck transport. Access to and from terminals is often on local streets which are usually narrow and pass through residential and local commercial areas. Transfer of ore and bulk goods is often by trucks, which because of the weight involved, is especially damaging to roadways and adjacent structures. Heavy truck traffic through these areas causes congestion, increases air and noise pollution, presents safety hazards and subjects communities to vibrations which can damage structures. Canton, Fells Point, South Baltimore, Locust Point, Brooklyn, and the Inner Harbor are subjected to high volumes of traffic which are difficult for a community to live with and have, in some instances, reduced the residential, commercial and open space viability of these areas. With the development of terminal facilities, consideration must be given to the construction of adequate transportation routes and implementation of measures to mitigate negative impacts.

Rail

The rail system serving the harbor is in generally poor repair and lacks adequate facilities to serve modern port operations. The poor condition of facilities coupled with the inherent problems associated with a port developed on numerous non-connected peninsulas has led to a lack of consistent and efficient service to various areas.

Much of the rail system still utilizes remnants of track and alignments developed eighty or one-hundred years ago. Rail users in older sections of the City must move supplies and products over tracks in street beds or under design standards formulated for different conditions. The condition of much of the

system makes the movement of hazardous products and materials through heavily populated areas extremely dangerous. This danger is heightened by the fact that many of the products are not labeled or characterized by the railroads, industries or public agencies. This problem also exists in the movement of goods by trucks and storage at terminals.

Bottlenecking in the Baltimore area negatively impacts the movement of goods within the port and to and from port facilities.

Both the freight and passenger lines must utilize tunnels designed a number of years ago. This causes a complex scheduling problem and the potential that all traffic through the region can be halted by a single accident. There are also limitations to the size of goods which can pass through the tunnels.

Several proposals have been developed which would separate passenger from rail traffic providing more efficient service to the port. Resolution of this conflict would do much to ease internal port goods movement, facilitate traffic through the Baltimore region and provide a more balanced transportation system.

MIX OF TRADE WHICH GENERATES THE GREATEST BENEFIT TO THE CITY IN TERMS OF EMPLOYMENT AND FISCAL SUPPORT

The activities and supporting facilities of the Port of Baltimore serve as a significant source of jobs in the State and region. The Port and it's related activities also generate approximately 10% of the Gross State Product. While these are impressive figures they are more useful for local evaluation when placed in perspective with the contribution other employment categories supply to the City and region. Another dimension which should be reviewed when calculating the impacts of the port and trade categories is the specific return industry

While generalized employment figures provide an overview of the impact of the port on the state a more detailed look is required to provide a useful tool in making specific land use decisions. The relationship between number of jobs and the real economic impact of port operations is also difficult to translate into useful information. The planner faces the challenge of utilizing long range projections and gross figures to determine methods to maximize employment and economic return to the local jurisdiction when making land use decisions.

With the relative scarcity of available land with direct access to shipping channels the principle objective of a jurisdiction should be the maximization of that land in terms of jobs and taxes while minimizing any negative impacts. This requires an understanding of what sectors of industry and maritime operations are expected to grow with the lowest incidence of negative impacts.

While the port's trade is expected to increase at a steady rate the S.I.C. number which includes marine terminal operations, is expected to decline at a rate of 1.4% in the 1970-80 period in the Baltimore Region. This can be tied, to some degree, to the increasing dependence on container goods movement and bulk cargo shipment. Both of these operations require large amounts of land resulting in a low land to job ratio. This seems to indicate that land with access to channels will continue to be used as a resource for maritime operations, however the return in terms jobs and taxes to the local jurisdiction may show little or no increase.

If the City is to maximize positive economic impact every effort should be made to provide suitable development opportunities for growth industries which are capital and job intensive. This will require identifying sites and improvements which can satisfy industrial and commercial uses which have a particular need for locating in a port area and meet the objectives of maritime operations.

and trade types make to a local jurisdiction in terms of jobs, fiscal support, negative impacts which require a response by the jurisdiction and the appropriate use of harbor land.

A review of the impact of the port and trade types on jobs, land use requirements and return to local jurisdictions is reviewed in the following sections.

Jobs and the Port

1973 calculations[2] have attributed 168,000 jobs in the State to port and port-dependent activities. Approximately 26,000 jobs, stevedores and longshoremen, railroads and surface transportation, steamship companies and agents, etc., are directly related to port activities and about 49,000 jobs, shipbuilding, repairs, port dependent processing, etc., to indirect functions. Primary metals processing is the single largest segment and occurs in the indirect category supplying 26,200 jobs. This is primarily based on a single employer, Bethlehem Steel's Sparrows Point Plant. Shipbuilding, including repairs and dismantling, is the second largest employment category with over 11,000 jobs and is also an indirect function.

The direct and indirect employment figures, which total over 75,000 should be compared to figures of other categories for a sense of scale. The 75,00 figure is approximately 6.5% of the total civilian employment in the Baltimore region, the 26,000 direct employment is about 3%. There are a number of other sectors in the Baltimore Region responsible for significantly larger employment on a direct basis. Retail Trade, in 1970, provided 151,000 jobs or over 17% of the total regional employment. Service oriented jobs employed 171,000 or 19% and civilian governments 151,000 or 17%.

[2]Hille, Taff, Thieblot, McGee, The Economic Impact of the Port of Baltimore on Maryland, 1975.

What is even more important is to identify those segments of the economy which have anticipated growth projections and translate this potential into job categories relative to the function of the Port. Retail Trade, service oriented jobs and civilian governments employment are expected to experience an average annual growth rate, between 1970 and 1980, of 1.8 to 3.2%. However, primary metals processing and manufacturing as a whole are expected to decline at an average rate of 2.9% and 1.2% respectively. The SIC number which includes marine terminal operations is expected to decline at a rate of 1.4% in the 1970-80 period in the Baltimore Region. If these figures are to be taken as a guide, those categories which are related to port operations are projected to decline in both the total number employed and the percentage of the labor market.

Jobs and Land Use

Surveys of land use in the harbor reviewed the employment and assessments of water dependent, water related and non-water dependent industries. From these surveys, it is apparent that in terms of employement, non-water dependent industries rank the highest. This would seem to develop an order of priority for desired land uses in the port area. However, water dependent uses must necessarily be given priority for land along the waters edge which has access to shipping channels. Direct support facilities for water dependent uses must also receive priority consideration for land in the port. Land in the industrialized harbor area, but without access to primary channels should then be utilized for industries with high employment to maximize the return to the City from the area's coastal zone.

Within the category of water dependent and water-related uses lie a set of sub- priorities which can be established dealing with jobs and economic returns.

Water Dependent: Shipment and receiving/storage of bulk goods:

While the shipment of bulk goods e.g., coal, ore, fertilizers, grain, petroleum products, etc., is important to the region and the state, the return to the City in terms of employment and taxes, is less than any other category. The actual transfer facilities, loading piers, elevators, etc., have only a moderate employment rate. The storage of bulk goods on vacant land adjacent to the shoreline and large rail yards for holding operations return less than any other land use to the local jurisdiction. Often storage areas employee fewer than 1/4 worker per acre and, in some instances, the land is totally tax exempt.

A prime example of a use adjacent ot the shoreline which could function inland and free up waterfront land are the petroleum products storage tanks in Fairfield. The majority of the products are received through pipeline, although barges are used by several companies for approximately 20% of their volume. Even the connection to the pierheads are through extended pipelines which could allow the storage facility to be located further inland. If storage facilities were located inland valuable shoreline would be available for water-dependent uses.

Bulk goods movement through the port yields a direct and indirect impact of $11.29/ton while general cargo returns $55.91/ton. The low yield in jobs and assessments, coupled with the potential negative impacts to adjacent land uses associated with bulk storage and transfer, seems to assign a low priority to the use of waterfront land when inland alternatives are available.

Marine Terminals

Marine Terminals vary greatly in size and use. Although a number of terminals handle general cargo items, e.g. Rukert, North Locust Point, etc. the emphasis at larger terminals has been on handling containerized goods, special equipment, automobiles, etc. The MPA agressively pursued this market in the 1960's by developing the 550 acre Dundalk Marine Terminal as one of the most complete container facilities in the world. Fortunately container goods have a high direct impact to the region and State. The values are best summarized in the 1973 report, "The Economic Impact of the Port of Baltimore on Maryland." Although the information is several years old the relative values are useful and are discussed in the following: "In addition to the large impact differences found between general and bulk cargoes, substantial differences were also found within the cargo categories. Two of the most important general cargoes carried into and shipped from the State are containers and automobiles. Both of these are important Baltimore cargoes, and together account for almost 60 percent of the port's general cargo tonnage. Containerized cargo creates a direct impact of $21.65 per ton, and automobiles, $55.48 per ton. Containers are much more volume effective than automobiles, however, resulting in greater impact for each container than each automobile. The figures are $257.64 per container and $74.64 per automobile."

While the operations of marine terminals are critical to a diversified port the direct return to a local jurisdiction is limited. Terminals generally only employee approximately 4 workers per acre and, in the case of State owned facilities are usually either exempt from local taxes or make only a small payment in lieu of taxes. There are also often considerable impacts on adjacent land uses resulting from the dependence of terminal operations on truck transport. If there are not adequate connections to the regional highway system, trucks

must use local streets, disrupting commercial areas and communities and substantially increasing the cost of street maintenance for the jurisdiction.

Trade and Benefits

In terms of developing a mix of cargo which returns the greatest benefits to the City, general cargo far outweighs the transport and storage of bulk goods. Within the category of general cargo, containers, goods requiring specialized handling, break bulk, automobiles, etc. accounted for almost one-half of the total value of exports in 1975. These same products were responsible for over one-third of the value of imports in 1975.

Looking only at the returns from trade, the City should encourage the growth of general cargo operations, expecially within the private sector. However, this must be balanced with the high return the City receives from the development of water-dependent or related industry. Appropriate development sites within the Port area are difficult to locate and industry must often compete with bulk goods facilities and marine terminals for sites with access to shipping channels.

While marine terminals are a positive factor for the Port there are conditons which, if altered, would greatly increase the benefits to the City: These are listed below:

a) an equitable method for compensating the jurisdiction for the tax exempt status of state facilities.

b) mitigation of any negative impacts generated by the operation of port facilities.

CHAPTER 2

REVITALIZATION OF WATERFRONT LAND AND BUILDINGS

RE-USE OF VACANT OR UNDERUTILIZED INDUSTRIAL LAND

Throughout the primary industrial areas adjacent to the harbor, a number of parcels of land have become vacant or are currently underutilized. This condition is especially evident in Canton, Boston Street, Fairfield/Curtis-Bay and to a lesser degree Hawkins Point (See Figure 1). Much of this land is actually vacant, although these parcels are generally small, under five acres. The greatest amount of land falls into the underutilized category, land or buildings which are not realizing full potential in terms of employment, taxes and utilization relative to the proximity to primary shipping channels and access. This definition encompasses a wide range of uses, land utilized for periodic, open storage of ore, coal, fertilizer, etc, railyards which see limited service, tank farms not dependent on water access and vacant or derelict buildings and piers. While land often supports an active use, the City must determine if the level of return to the Port and the impact on other uses is warranted. If land is actually vacant with significant size and adequate access, mechanisms should be developed to return the parcel to optimum utilization. Vacant land not only can be a negative factor in and of itself, but it also fails to supply full potential to adjacent industries. Often vital linkages are either not provided or are removed by land uses leaving an area.

Underutilized land, unlike vacant land, is more difficult to define and to determine an accurate account of return to the jurisdiction and Port and the relationship to other industry. The additional factor of relocation of an existing use to make the land or building available to a more productive uses reduces the attractiveness for public involvement.

Uses which currently occupy waterfront land with access to shipping channels but are not related to that access also present a question of optimization of port land. Many of these uses are employment intensive and supply the City with a high return in terms of taxes and jobs. However, there are uses, manufacturing, warehouses, etc which occupy shoreline, employ few people and pay limited taxes. The Department of Planning will explore the effectiveness of relocation of low return businesses occupying prime waterfront land to inland areas as part of the Commerce Cities Project.

The problem of vacant and underutilized land and buildings has prompted the Department of Planning to review, in detail, land uses for all major areas around the harbor. This information is transferred to the Mayor's Physical Development Co-ordinator and the Baltimore Economic Development Corporation to determine the role of the City in encouraging re-use of land. Currently, the City is continuing to explore and identify vacant and underutilized parcels and buildings and mechanisms to put these into a use which will insure a high level of return and optimize land with access to shipping channels. The Department of Planning is also continuing to explore special port facilities zoning.

RE-USE OF BUILDINGS FOR RESIDENTIAL/COMMERCIAL USES

Although generated by a similar change in technology and maritime operations which resulted in vacant and underutilized industrial land, buildings available for residential and/or commerical re-use are found only in limited areas of the port. The majority of the structures are in Fells Point, with a few buildings scattered in other areas. (See figure 1)

The Inner Harbor development has identified several major structures for re-use. The Power Generating House located on Pier 4 and several ancillary buildings are to be retained for use as a restaurant and mixed commercial/residential. Inner Harbor East and Falls Harbor also contain several buildings either in the process of renovation or scheduled for adaptive re-use. Currently plans are under consideration for utilizing the waterfront for public access and construction of a relocated wholesale fish market.

Fells Point, as indicated earlier, holds the greatest potential for adaptive re-use for residential and commercial development. This potenital has been realized in the Fells Point Land Use Plan prepared by a consultant and the community. A major change in land use designation from industrial to residential, residential/commercial or commercial has been proposed. This would allow the re-use of a number of warehouses and smaller shops for residential/commercial purposes while maintaining the maritime/commercial use of portions of the shoreline. Preliminary proposals have been reviewed which call for conversion of multi-story warehouses into apartments or condominiums with commercial space at ground level. When possible, developers have proposed marinas and public access along the shoreline. Because

the area is densley developed, access and parking have proven to be the most difficult problems. The community and city realize that re-development will require construction of parking structures to accommodate both residential and commercial uses. These must be sited and designed to be convenient for the users, yet, in scale with surrounding buildings and not obscure assess to the waterfront or block views.

Because of the increased desirability of older buildings adjacent to the shoreline for re-use the private market has assumed much of the development responsibility. This has occurred after the city has made basic improvements and initiated major projects in the Inner Harbor and Fells Point. In Fells Point the city has moved away from offering houses at a minimal price and opened the sale to competitive bidding. Even with the prospect of much higher sale prices, the response has been heavy. It is anticipated that within a few years even vacant land adjacent to the shoreline will become extremely desirable for redevelopment in a residential use.

The Fells Point - Inner Harbor areas offer the city resident and shop keeper an unusual opportunity to participate in the rejuvenation of urban areas which hold the special attraction of access to the waterfront. The city will continue to explore and identify opportunities to continue this growth and improvement to communities. To maximize this redevelopment, the City, State, and Federal governments must work creatively to provide the expertise and funding to make this happen and benefit the largest possible segment of the population.

CHAPTER 3

MEETING THE NEEDS OF THE PUBLIC FOR ACCESS TO THE WATERFRONT

BALANCE OF COMPETING PRESSURES FOR WATERFRONT LANDS- PUBLIC AND PRIVATE

The basic right of public access to all coastal tidelands has been reinforced by various Maryland court decisions over the past five years. The courts have concluded that ownership of the land lying between mean high water and mean low water is vested in the State of Maryland and held in trust for public use. However, old restrictions on the public's right to cross private waterfront property from public thoroughfares limits the impact of these rulings. Furthermore, areas of historic public use have nearly been eliminated by the erection of fences, buildings, and other structures.

Within the Port of Baltimore the past development of shoreline industry and marine operations has limited the potential for public access. Of the approximately 6,125 acres of land associated with the City's coastal zone only 114 are in local or Federal parkland. A significant portion of that 114 acres is made up of Fort McHenry which has limitations on the types of uses. The majority of the coastal zone, over 4,600 acres, is zoned for industrial use. The remainder, or approximately 1,400 acres is in residential and/or commercial use.

Because of the limited amount of land adjacent to primary shipping channels and the ties between certain industries, parkland has traditionally been relegated to a low priority. Existing development patterns have also minimized the link between residential areas and the shoreline. The lack of water quality acceptable

to the majority of City residents has also diminished the demand for access to the waterfront. Generally, residents living adjacent to the shore gained access, on an informal basis, by using piers or streets ending at the shoreline. Residents from other sections of the City were accustomed to driving distances to beaches or taking steamers to other areas of the Bay. Many assumed that since the City's waterfront was largely devoted to port and industrial uses there was little possibility for public access to shoreline and water.

Several events conincided which dramatically altered the public's awareness and use of the shoreline. The once popular Bay steamers had given way to the automobile, leaving piers in the Inner Harbor in derelict condition. Much of the area north and west of the shoreline (See Figure 1) was occupied by warehouses abandoned as the trade moved or shipping operations changed. The availability of shoreline and land coupled with plans for extending the revitalized Charles Center to the harbor offered Baltimore the first large scale opportunity to create public access to the waterfront.

The Inner Harbor has been successful far beyond the original expectations. Thousands of people use the promenade, marinas, office buildings, and open space each day. Most importantly, the Inner Harbor has rekindled an interest in the port, the condition of the shoreline and water quality. In fact, the greatest controversary in a number of years emerged in the 1978 elections over the appropriate use of what the public now perceived as their front yard. Future development has been guided to take advantage of the Inner Harbor's unique relationship to water. However, the City must carefully place structures along the shoreline which will maximize use of the water's edge.

With the renewed interest in the waterfront and living in the City, other areas have experienced increased pressure for redevelopment. Fells Point (See Figure 1) has undergone changes in its composition due to major efforts to rehabilitate homes and businesses in this historic waterfront community. Included in the redevelopment plan are specific recommendations for maintaining and improving public access to the shoreline and retention of water oriented businesses, e.g. tugboats, ship chandlers, etc. Proposals to renovate vacant warehouses along the shoreline as residential buildings include public access easements and/or marinas.

There are several locations along the shoreline which are now vacant or underutilized which have been identified by communities as locations for shoreline access. Most of these are in private ownership or held by the City for right-of-way for highway projects. Proposals have been developed by several City agencies to take advantage of these opportunities.

While the City can exercise various options for land in its ownership there is little legal basis to alter uses in industrially zoned property to allow for public access. The Department of Planning has worked with several fill permits by private developers to insure public access, when possible, along the shoreline. Efforts have also been made to influence the current landowners to secure the shoreline, clean debris and landscape the edge.

However, impact on improving public access to the shoreline by projects of this scale is limited. The Department of Planning has initiated several projects and identified others which will significantly increase public access and use of the shoreline and water. These are discussed in the following section.

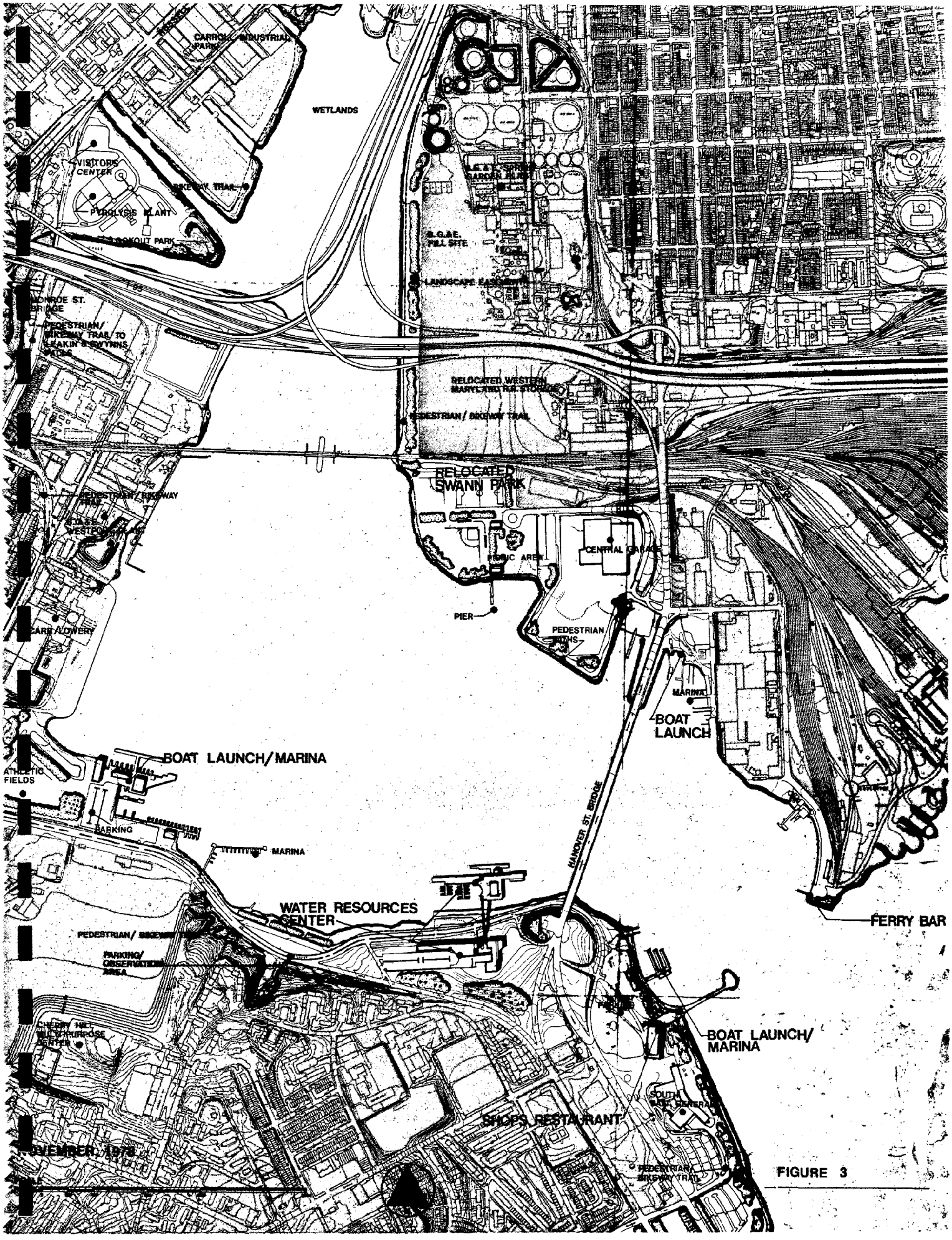
IDENTIFIED PROJECTS AS RESPONSE TO PUBLIC NEED AND OPPORTUNITIES

Middle Branch Park System

The Middle Branch of the Patapsco River (See Figure 3) is a natural resource of significant unrealized potential. With six miles of shoreline and 416 acres of water area, it is 20 times the size of the City's Inner Harbor. Through careful planning and development, this water body could become the City's most extensive shoreline recreation facility.

Today, however, the water's edge has fallen into neglect. It is strewn with debris, junked cars, and rotting buildings. The water is polluted by the outfall from the Gwynns Falls and several major storm drains. These problems are compounded by deep accumulations of silt which severely restrict the types of development possible along the water's edge.

Major uses along the shoreline include the Western Maryland Railway's storage yard, Swann Park, Baltimore Gas and Electric Company's Spring Garden Station, Carroll Industrial Park, the City's Pyrolysis Plant, B.G.&.E.'s Westport Power Generation Plant, and the Carr-Lowrey Company's glass manufacturing facility. There are also numerous smaller concerns located landward. The underutilized Broening Park and several auto junk yards occupy the south shoreline along Waterview Avenue. Open space continues south, past the South Baltimore General Hospital, to the proposed Reedbird/Patapsco Park.



NOVEMBER, 1978

FIGURE 3

Several residential areas are near the Middle Branch: Cherry Hill occupies a large tract of land to the south, Westport is situated between Russell Street and the industry on the western shore, and the South Baltimore community is clustered along Hanover Street and to the east.

Numerous studies have cited the potential for creating a major public, water-oriented recreation area along the Middle Branch. The protected nature of this water body makes possible recreational boating and marine activities not feasible in other active areas of the port. The Middle Branch Park Plan (See Figure 3), prepared by the Department of Planning, maps out specific actions that can be taken to restore the derelict water body and create Baltimore's largest shoreline park.

The plan calls for the creation of a park around portions of the perimeter of the Middle Branch, threaded together by a continuous pedestrian/bikeway trail. The goal is to provide maximum access to the water and to increase recreational opportuities. The plan proposes the creation of boat launches, marinas, play-fields, fishing piers, open green spaces, picnic areas, wetlands, and a water resource instructional facility. Easy access to the park will be provided by the new I-95 and I-395 expressways, Hanover Street, Russell Street, and by new pedestrian connections to adjacent residential communities. In addition, the park's pedestrian/bike trail will connect directly with the bike and pedestrian paths in the Gwynns Falls Park and Patapsco State Park and with a pedestrian/bike trail from the Inner Harbor and Federal Hill.

Reedbird Park

The City Department of Recreation and Parks, working with the Department of Planning, has developed a master plan for the conversion of the Reedbird and Potee landfills into a large park which would link the Middle Branch Park to the Patapsco State Park system. The plan (See Figure 3) proposes reclamation of approximately 90 acres on the west side of the Patapsco River and 30 acres on the east side. The master plan includes various recreational facilities such as ballfields, tennis courts, basketball courts, paddle boat, row boat, and sailing facilities, amphitheaters, fishing, wetlands and water quality instructional areas. A large portion of the park will be green open space with the possibility of an observatown tower at the summit of an 80-foot mound located on the site.

The entire Middle Branch/Reedbird Park System when completed, will link two major stream valley parks, the Gwynns Falls Park and the Patapsco River State Park, and, offer the largest and most diversified water-oriented recreational facility in the region. Implementation is a costly and complex undertaking and will involve co-ordination of three local jurisdictions, many community groups, State and Federal agencies.

Fort Armistead

Originally constructed as one of five forts to guard the Port, Fort Armistead has been basically unused since the early 1920's. As part of the City parks system the 38 acre fort offers a unique view of ships passing under the Francis Scott Key Bridge and the operations of the giant Bethlehem Steel's Sparrows Point Plant. Currently underutilized, plans have been proposed to improve shoreline conditions, take advantage of the view offered by the bluffs and develop playing fields.

Because the fort is isolated from highly populated areas of the City by its location, surrounding industrial zones and poor access, little public pressure has been generated to implement plans. The City sees the park as holding a potential for meeting increased demands for shoreline access in the future.

Fort Smallwood

Another of the five forts, Fort Smallwood is actually located outside of the City. Plans have been developed for renovating existing park facilities and making improvements to encourage shoreline access. The Chesapeake Bay Foundation has leased space in the park to operate a harbor study program.

While these are major undertakings the City fully recognizes a need to maximize public access to the shoreline in a productive manner. Development of these facilities will accomplish much to obtain that objective. However, the Department of Planning anticipates working with private and public sector, State and Federal agencies and communities to improve public access to the shoreline and water of the Baltimore Harbor.

CANTON AREA STUDY
COASTAL ENERGY IMPACT PROGRAM
BALTIMORE HARBOR STUDY

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The Canton Area Study

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Canton Industrial Area Study

Introduction

The Canton Industrial Area is the City's largest industrial district and a major center of industrial and port activity in the region. Canton is bounded by O'Donnell Street on the north, Dundalk Avenue on the east, and the Patapsco River on the south and west. Canton is located at the northern approach to the Baltimore Harbor Tunnel and the I-95 Fort McHenry Tunnel under construction. As such, it is now and will continue to be one of the most visible districts in Baltimore City for travellers on the I-95 corridor.

Manufacturing activity takes place on over 2000 acres of Canton land. Baltimore's "Big Three" employers, Lever Brothers, General Motors, and Western Electric occupy large sites in Canton. Smaller operations, including fertilizer processing, contract trucking and chemical manufacturing are located in Canton.

The Canton waterfront contains an extensive amount of both public and private sector maritime activity. The Maryland Port Administration owns the Dundalk Marine Terminal, the Port's largest container terminal, and the Clinton Street Marine Terminal, a small general cargo facility. Private facilities include Sea Land Service's container terminal on Newgate Avenue, Rukert Terminals' bulk shipment facilities on Clinton Street and at Lazaretto Point, and petroleum terminals operated by Exxon Corporation and Apex Oil, located on Clinton Street. In addition to waterfront facilities, open storage yards, warehouses, and liquid storage tanks serving port activities comprise several hundred acres of land in Canton.

Canton contains a large network of rail yards and lines. Rail service is provided to both industries and marine terminal facilities in the area by the Chessie System, Conrail, and the Canton Railroad. In addition, rail lines passing through Canton yards serve the Dundalk Marine Terminal and the Bethlehem Steel plant at Sparrows Point.

As an older area, many buildings, piers and streets have deteriorated and become obsolete. Circulation in Canton constitutes a major problem as port uses and industrial activities vie for limited space on Canton's streets. Rail service also suffers from age and congestion. Industrial activity, though strong east of Newkirk Street, has been eclipsed by bulk storage facilities west of Newkirk.

Description of Area Activities

Over 18,000 people are employed in a variety of manufacturing and port-related activities in the Canton area. It is the largest single concentration of industrial and port activity in the City. The size of industrial activities in Canton ranges from General Motors and Western Electric, two of the City's largest employers to several small and medium building supply and manufacturing firms. Port activity is equally diverse. The Port's largest container facility, MPA's Dundalk Marine Terminal, is located in Canton as are several smaller public and private container, general cargo, bulk, and petroleum terminal facilities.

Industrial Activity

Approximately 15,000 of Canton's 18,000 employees work in manufacturing establishments. Most of these establishments are concentrated in four clusters. Bulk material producers, such as Lebanon Chemical, Agrico Chemical and Lehigh Portland Cement, are located along Clinton Street in west Canton. A diverse group of medium to large manufacturers exists along Boston Street in north Canton. These include GAF Corporation, Crown Cork and Seal, S. Schapiro and Sons, and Quality Chemicals. East of Newkirk Street lie Canton's "Big Three" employers, Lever Brothers, General Motors, and Western Electric. These companies employ over 10,000 individuals on approximately 300 acres of contiguous land. Further east, along Colgate Creek, a diverse cluster of manufacturers is located. This group includes Federal Yeast and SCM Glidden Paints. Isolated from other manufacturing activities, National Gypsum maintains a facility at Newkirk and Newgate Streets.

Manufacturing activity along Clinton Street in west Canton is dominated by bulk material producers and distributors. The once prominent fertilizer industry in Baltimore has declined in importance as shifts in agricultural markets farther to the Midwest and South have lessened Baltimore's locational advantage. Only two fertilizer companies, Lebanon Chemical and Agrico Chemical exist today in Canton. Though some manufacturing occurs at Lebanon Chemical, Agrico's activity has become primarily one of bagging and distribution of phosphate-based fertilizers. Waterfront sites were used until 1970 to receive barge shipments of raw materials. Though a small amount of material is delivered by barge via Rukert Terminals, receipt of materials and distribution of products is done almost totally by truck. Lebanon Chemical is contemplating expansion at its Lazaretto Point site and has begun clearing buildings. Lebanon has

requested that Clinton Street be closed south of Newgate St. to consolidate its site in that area.

Lehigh Portland Cement is the only other manufacturer situated on Clinton Street. Lehigh produces concrete for use in local construction projects. Though Lehigh occupies a 4 acre waterfront site between Lebanon and Agrico's Lazaretto Point properties, it no longer uses its 42 foot draft channel and marginal berth on the Fort McHenry Channel, preferring to receive materials and move products by truck.

Manufacturing activity along Boston Street in Canton is stable. GAF Corporation, Crown Cork and Seal, S. Schapiro and Sons, and Quality Chemicals specialize in chemical processing, homebuilding supplies manufacturing, and food processing equipment production. Together, they employ 1,137 persons. No definite expansion plans have been identified in this area of Canton.

Lever Brothers, General Motors, and Western Electric form the nucleus of Canton's manufacturing employment base. Lever Brothers, while remaining stable in terms of employment, has made substantial capital investment in plant modernization and pollution abatement programs. It has been in Canton since 1939, and employs 1,047 on 48 acres. Lever Brothers manufactures soap and detergent products at this site. Though no expansion plans exist here at present, the firm does possess adequate expansion space.

General Motors has operated in Canton since 1935 and has expanded from 46 acres to 167 acres of intensive manufacturing, assembling trucks and automobiles. Employment at GM peaked at 6991 in 1978 and has since

declined to 4,300. GM has recently announced plans for a $250 million expansion and modernization program for this plant. With substantial City and Federal assistance, update figures GM will increase their active manufacturing space by 17%, their total acreage by 35%, and stabilize plant employment at 5000 by year 1985.

Western Electric Corporation, a subsidiary of American Telephone and Telegraph Corp. employs over 3,777 persons at its 169 acre Point Breeze plant. Begun here in 1929 the plant produces telephone cords and switching equipment. At one time cable for the Transatlantic Cable Project was produced here and exported from the Western Electric deepwater berth on Colgate Creek. Western Electric has indicated an interest to develop on the Fort McHenry Tunnel fill site south of its existing property line. The company has suggested the possibility of a 50 acre expansion using this land. The expansion, if accomplished, would be geared to export manufacturing.

Manufacturing activity along Colgate Creek is relatively stable. Federal Yeast and SCM Glidden Paints are the two largest employers in this area, employing a total of 270 persons. Federal Yeast is currently negotiating with BEDCO to acquire 7 acres of the Holabird Industrial Park for expansion of their operation.

National Gypsum, located on Newkirk St. amidst railyards and port uses, manufactures gypsum board utilizing materials brought in to its pier. It employs 169 persons on 16 acres of land.

Port Activity

Over 2000 individuals are employed directly in Port activities in the Canton area. Port activity in Canton includes all types of cargo moved through the Port of Baltimore. Containerized cargo is moved through MPA's Dundalk Marine Terminal and Sealand Service Inc's terminal on Newgate Avenue. General cargo is moved through the Canton Company Marine Terminal, on Newgate Avenue and at MPA's Clinton Street Marine Terminal. General bulk cargo is also moved by the Canton Company on Newgate Avenue and at two Clinton Street sites by Rukert Marine Terminals. CSY Finance, Inc. operates a grain export facility on Newgate Street and the Conrail Corp owns a coal pier on Clinton Street. Exxon and Apex Oil both operate petroleum terminals and piers along Clinton Street.

West Shore Facilities

Exxon Corporation owns a large petroleum terminal and storage facility at Clinton and Boston Streets in northwest Canton. Extending over 183 acres, this facility includes an active pier, a pipeline terminal and products storage tanks. The facility employs 189 persons involved in the receipt, storage, and distribution of its products. Exxon deals extensively in residual fuel oil, used to fire power plants and other large industrial boilers. Due to its viscosity residual fuel oil cannot be transported by pipeline and must be moved by ship and barge. As long as Exxon remains a major regional supplier of residual fuel oil, it will continue to utilize its waterfront location.

Apex Oil maintains a petroleum products terminal and distribution facility south of Exxon. The site contains two finger piers and a large waterfront

acreage for oil storage. Apex uses this for the receipt and distribution of fuel oil in barges. Apex receives and distributes both distillate and residual fuel oils. The Apex site has recently been expanded through the acquisition of the 50 acre ASARCO site for additional oil storage facilities.

The Maryland Port Administration owns a general cargo facility at its Clinton Street Marine Terminal. Operated by A & G Stevedores, Inc., this facility consists of four general cargo berths along a single pier containing a 342,600 sq. ft. warehouse building, and 14 acres of storage space east of Clinton Street. A second, unused, pier exists on the MPA property. This pier is structurally unsound and has been scheduled for demolition pending funds availability. Both general cargo and containerized cargo are moved through this terminal. Backup storage space demands exceed available space at this facility. Containers are often stored on an adjacent, unfenced site north of the terminal.

The Rukert Terminals Corporation operates two bulk cargo facilities along Clinton Street in west Canton. The "upper" site, at Pier 5 on Clinton Street has one bulk cargo berth with covered storage space on a finger pier as well as 9 acres of back up space across Clinton Street. "Dirty" bulk commodities, such as fero alloys and potash are brought in through this facility. Rukert is currently investing $5 million in constructing covered storage structures. A headquarters building on this 9 acre site in addition to lengthening Pier 5 to 850 feet are projects recently completed. In addition, a package sewage treatment facility is planned as part of Rukert's improvements.

Rukert's "lower" site, at Lazaretto Point contains two marginal berths and covered storage on 8 acres of land. Berth B at Lazaretto Point will

be inoperative during construction of the I-95 Ft. McHenry Tunnel and will be replaced when highway construction is complete. Rukert plans to use the Lazaretto Point site exclusively for "clean" bulk commodities such as ferro nickel, zinc, and copper.

National Consolidation RailRoad Corporation (Conrail) operates a coal pier at a site on Clinton Street. This finger pier, built in the late nineteenth century, is used primarily to move metallurgical coal to Bethlehem Steel's Sparrows Point Plant. In addition, the facility is used for local and intra-coastal delivery of steam coal to utilities along the Chesapeake and Delaware Rivers. The yards serving this pier were recently reconstructed to accommodate I-95 in Canton at a cost of $25 million. Though this facility is antiquated, it operates efficiently and is not expected to be closed in the near future.

Southshore Facilities

The Canton Marine Terminal is located along Newgate Street in south Canton, the facility contains ten general cargo and three bulk cargo berths on nine piers. A number of the piers are leased to specialized cargo operators. General cargo is moved by Standard Fruit and Steamship Company. Containerized cargo is moved by I.T.O. Corporation, a company specializing in trade with Puerto Rico. Currently the primary bulk commodity moved through Canton Marine Terminal is oyster shells, imported for use in livestock feed. The entire Marine Terminal complex and associated Canton Railroad yards have been purchased by the Consolidation Coal Company which will renovate the Cottman Ore Pier as a coal export

facility. The rail yards to the north of this facility will be redesigned to accommodate an efficient coal delivery system and stock pile area for coal storage and mixing. Existing general and bulk cargo tenants on other piers will be maintained. Storage space required for current marine terminal operators which will be displaced by coal operations will be moved to the Canton Billet Yards located at Clinton Street and Holabird Avenue, also purchased by Consolidation Coal. This site is currently used for open bulk storage.

Central Soya Finance Corp. owns and operates a grain export facility on Newgate Street in south Canton. This facility moves tons of grain per year through the Port. Conrail is used to transport grain to this facility. Despite yarding problems involved in bringing long unit trains into the congested Canton area, this facility performs efficiently.

Sea Land Service, Inc., operates a container terminal facility in Canton. Sea Land is an integrated trucking-shipping operation. Seventy-three persons are employed in its Baltimore operation. SeaLand's operation in Canton presently exists on two separate sites - a truck terminal and office complex at Newkirk Street and Holabird Avenue, and a warehouse marine terminal complex on Newgate Avenue. The Sea Land Marine Terminal contains one container berth, a consolidation shed, and 22 acres of backup space. Sea Land Services currently uses the Baltimore terminal as a feeder port for its East Coast ports-of-call at Newport News, Philadelphia, and Port Elizabeth, New Jersey. The company intends to consolidate its Canton operation on a single site with the development of the Canton Seagirt fill project. Sea Land is also considering the option of designating Baltimore a port-of-call. This would increase

traffic moving through Baltimore as larger ships, moving directly to foreign ports, would call here.

The Port's largest container facility, MPA's Dundalk Marine Terminal straddles the Baltimore City/Baltimore County border in extreme southeast Canton on Broening Highway. During 1979, 2.9 million tons of containerized freight was moved through the Dundalk Marine Terminal. With over 550 acres, the facility regularly employs 2,000 workers. Dundalk Marine Terminal houses a total of 13 berths, designed exclusively for containerized cargo. Expansion plans include construction of one additional oversized container berth, two additional cranes, a new consolidation shed and 15 acres of new backup area. Dundalk Marine Terminal is served by the Chessie, Conrail, and Canton Railroads. It has direct access to the I-695 - Outer Harbor Crossing Southbound via Broening Highway. Access to I-695 northbound to Route 40 east is less direct, requiring movement through the Dundalk residential community to the Peninsula Expressway. The terminal will have a direct connection to I-95 to the north via Broening Highway and Keith Avenue, now under construction.

Energy Facilities

Canton is the site for a substantial amount of energy activity in the Harbor. It contains two active petroleum terminal and distribution facilities operated by Exxon Corporation and Apex Oil, Inc., and a coal pier owned by Conrail. Energy facilities currently occupy 226 acres of land in Canton. Over 350 persons are employed by three energy facilities in the area. A major, coal export facility is planned for the area by Consolidation Coal Company as well. This will add 90 acres of energy related use to Canton for a total of approximately 316 acres.

Exxon Corporation maintains a petroleum pier and storage tanks on 183 acres of land at Clinton Street and Cardiff Avenue. The facility serves as a distribution and storage center for both heavy residual fuel oil and lighter distillate fuel oils. Residual fuel oil is highly viscous and can be moved only by ship and barge. Exxon is one of three major suppliers of residual oil in the Baltimore Region. Distillate fuel oil is lighter and can be transported by pipeline easily. The Colonial Pipeline Company has a terminal in Canton through which Exxon receives 80% of its distillate products. Distribution of light oils is made primarily by truck. The facility generates up to 500 truck trips per day. Exxon is using its land to capacity. A great increase in volume of shipments through Baltimore is not foreseen. The conversion of B G & E power plants to coal is likely to decrease the volume of residual fuel oil moving through this facility.

Apex Oil, a St. Louis based firm, operates a small petroleum pier and distribution facility immediately south of Exxon on Clinton Street. Apex deals both in residual and distillate fuel oils. Most of Apex's commodities are moved by barge, though some (less than 10%) product receipts are made via the Colonial Pipeline. Apex is expanding its storage capacity in Baltimore. It has acquired the ASARCO site for development of storage facilities.

Conrail owns a coal pier on Clinton Street. This aged facility is used for local and intracoastal distribution of steam coal on barges. The primary customers for this coal has been Bethlehem Steel, Delmarva Power, Public Service Electric and Gas of New Jersey, and Baltimore Gas and Electric. The Conrail Coal Pier currently operates near capacity for a standard 40-hour week. The company is considering increasing

throughput by adding a second shift should demand increase due to BG&E conversions. However, no physical plant alterations aimed at capacity increases are likely Conrail will realize an increase in coal traffic to Baltimore due to the development of the Consolidation Coal Export facility on Newgate Avenue in Canton. The possibility exists that Conrail might shift activity from its own pier to Consol's nearby project.

Consolidation Coal Company, Inc., has recently acquired the Canton Marine Terminal property and controlling stock in the Canton Railroad. Consol intends to develop a major coal export facility on approximately 90 acres, using the Cottman Ore Pier as the export site. This facility will accommodate a throughput of 10 million tons per year, almost equal to the level of activity at the Ports only current export operation at Curtis Bay. Investment in the facility is likely to exceed $100 million for site preparation, rail yard reconstruction, and pier renovation. Conrail and Chessie will both function as carriers of coal from Consol's mines.

The Railroad System

The Canton area contains an extensive rail network. Both Conrail and the Chessie maintain yards in the area for direct delivery to local industrial and port users. These major lines switch with the Canton Railroad to provide additional service to piers and industries. Chemicals, petroleum, cement, gypsum and automobiles are among the products shipped from Canton by rail. Coal and grain are the major commodities brought into the area. In addition, finished steel products from Sparrows Point and automobiles and containers from Dundalk Marine Terminal move through the Canton rail system.

Conrail

Conrail operates on 220 acres of land in Canton. Conrail's facilities in Canton include the following:

- The Holabird Yard is a holding yard from which deliveries to Conrail's direct customers, Lebanon Chemical, MPA's Clinton Street Marine Terminal, Rukert Terminals, and Dundalk Marine Terminal are made. Interchange with the Canton Railroad to serve other industrial customers is made here.

- Conrail Coal Pier and Storage Yard is maintained for intracoastal distribution of coal to utilities and industries. Yards were rebuilt for $25 million during I-95 construction.

- CSY Finance Holding Yards south of the Holabird Yards provide backup and switching space for delivering grain unit trains to CSY Finance Grain Pier.

- President Street Branch which moves across Boston Street and Fells Point to the Falls Harbor area.

- Bear Creek Track which leads from the main classification Yard at Bay View to Canton and through Canton to the Dundalk Marine Terminal.

Several problems exist concerning Conrail's facilities and operations in Canton:

- Use of Bay View Yard as regional classification yard, combined

with the need to switch from mainline electric locomotives to local diesel locomotives, and the need to cross Amtrak mainline at-grade to reach Canton creates congestion, and inefficiency at this point.

- Condition of Conrail trackage is poor and necessitates very slow movement in Canton.

- At-grade crossings at Boston Street and Newkirk Street cause frequent delays to street traffic.

- Yard capacity for CSY Finance grain terminal is limited causing congestion in Holabird Yards.

- Large coal unit trains moving into Consolidation Terminal may exacerbate all above problems.

Chessie System

Chessie's operations in Canton are less extensive than their west Baltimore operations. Chessie facilities in Canton include the following:

- Penn Mary Yard acts as an interchange point with the Canton Railroad as well as a yard for storage and delivery of cars to General Motors. An interchange with Conrail to service the Dundalk Marine Terminal is maintained here.

- Sparrows Point Subdivision is the entire section of Chessie line from the Bay view Yard through to the Gray's Yard, where Chessie interchanges with the Patapsco and Back River Railroad to deliver service to Bethlehem Steel.

- Canton Branch is a small set of tracks used for serving Exxon Corporation in west Canton.

Chessie's Canton operations function with the following problems:

- Tracks leading to the Penn Mary Yard cross Newkirk Street and Holabird Avenue at-grade, adding to significant circulation problems in the vicinity of Ponca and Holabird.

- Yard capacity at Penn Mary is limited, necessitating storage of GM cars as far away as Gray's Yard in Sparrows Point.

- Coal unit trains moving to Consolidation Terminal may exacerbate above problems.

Canton Railroad

The Canton Railroad is a switching railroad set up to interchange freight between the Chessie and Conrail trunk lines and industrial and port users in Canton and East Baltimore. The Canton Company at one time maintained an extensive iron ore import operation at its Cottman Pier which subsidized the other freight switching operations of the railroad.

Ore activity on the Canton Railroad declined and has now ceased. The Canton Railroad petitioned for abandonment in 1978, but postponed the proceedings in 1979 under pressure from local industries, and in light of a temporary increase in ore traffic. The railroad was purchased by Consol Coal Co. in 1980. While major structural changes are planned to accommodate Consol's coal terminal, service as usual has been promised to the Canton Railroads existing customers.

The Canton Railroad functions with the following problems:

- With the exception of the newly rebuilt Inner Yard (rebuilt with I-95 Federal Funds) Canton track is in disrepair causing slow movement of trains.

- Nine at-grade crossings in Canton cause frequent delays to both rail and street traffic. Major problems exist at Ponca-Holabird, and at Newgate Avenue.

- Switching operations between line-haul carriers and Canton Railroad have been slow and inefficient, fueling shift from rail service by local industries further eroding Canton Railroads revenue base.

Street and Highway Circulation

Canton has direct access to the Region's Interstate Highway System via I-95, the Harbor Tunnel Thruway, and the nearby Beltway-Outer Harbor Crossing. Major arterials, Broening Highway, Dundalk Avenue, Boston

Street, O'Donnell Street, link local streets in Canton to regional highways. The local system, including Clinton Street, Newkirk Street, Ponca Street, Holabird Avenue, and Newgate Avenue provide direct access to port and industrial sites in the area. Issues and problems of each component of Canton's Street and highway circulation system are detailed below.

Interstate - Limited Access Routes

The Harbor Tunnel Thruway and I-95 cross Canton diagonally from southwest to northeast. Both will eventually have tunnels crossing the Harbor. Congestion occurs presently at the Tunnel Thruway exit ramp on Holabird Avenue due to the presence of several at-grade rail crossings and a major General Motors parking facility. The Fort McHenry Tunnel carrying I-95 from Canton to Locust Point and expected to be operational in 1985 is under construction. I-95 will have a link via Keith Avenue to the Newgate Avenue port area and to Broening Highway and Holabird Industrial Park. The unsignalled intersection of Keith Avenue and Vail Street, leading to Newgate, has a very low capacity for traffic moving from Vail to Keith (120 vph) which could become critical when Canton Seagirt Marine Terminal is developed on Newgate Avenue. Ramps leading from Keith Avenue to Broening Highway also have relatively low capacities, in the area of 700 vehicles per hours, due to road design. This could be strained by traffic moving from I-95 to Dundalk Marine Terminal (DMT) given that facility's planned expansion. Ramps leading from Keith Avenue to Holabird Industrial Park, proposed as part of the General Motors expansion plan, also have limited capacity, again near 700 vph, due to design. Rush hour traffic moving to a 1000 car GM parking lot

and Holabird Industrial Park, and across Holabird to Dundalk will likely strain these ramps. The proximal location of Keith-Holabird Park and Keith-Broening ramps might complicate these traffic patterns.

Arterials

Broening Highway and Dundalk Avenue are major arterials on the eastern edge of Canton. Broening Highway is the access to major facilities in Canton - GM, Western Electric, and Dundalk Marine Terminal(DMT). It has a connection to I-695, the Baltimore Beltway, South of DMT. Access is limited only to southbound traffic using the Key Bridge Outer Harbor Crossing. Severe congestion occurs at the Broening Highway - Holabird Avenue intersection presently. The City has widened the intersection to provide turn lanes. A report by Kidde Consultants, analyzing the effect of relocating GM parking to Holabird Industrial Park, anticipates continued congestion at this intersection and new congestion at the Broening Highway entrance to the parking facility due to expansion and development at DMT, Holabird Industrial Park, and Western Electric.

Boston and O'Donnell Streets are major east-west arteries which define the northern boundary of Canton. Entrance and exit ramps for both I-95 and the Tunnel Thruway are located on O'Donnell Street. Boston Street is the designated right-of-way for the I-83 corridor and location of the proposed I-83 - I-95 junction. Currently Boston Street functions as the major in city route for truck traffic moving from Southeast-to-South Baltimore. Residential communities in Canton, West Canton, and Fells Point along this route register frequent complaints concerning heavy

motor carrier traffic. It is anticipated that opening of the I-95 tunnel with alleviate a portion of Boston Street traffic. A major source of congestion along Boston Street currently is the Conrail-Canton RR crossing at-grade east of Haven Street. Six tracks leading to major switching and serving yards cross Boston Street at-grade here, creating congestion on this heavily traveled street.

Local Streets

Clinton Street is the main street on the west Canton shoreline. It serves several petroleum, general cargo, and bulk shipment terminals as well as several industries. Most port uses have back-up space across Clinton Street from their piers creating cross-street patterns conflicting with through traffic. Some businesses have loading docks located which require trucks to extend into the street. The street is in disrepair and has been cited as a major source of particulate pollution. It is scheduled for reconstruction in 1983-84.

Haven Street extends from Boston Street south to Eastbourne Avenue. Haven Street was was planned to extend south and west, along the Conrail property, to Clinton Street to provide access to industrial sites in the Parker Property and to alleviate port-industrial traffic conflicts the upper section of Clinton Street. However, due to a lack of funds Haven Street will be extended and reconstructed only as far as Danville Street.

Newkirk Street extends from Boston Street to Newgate Avenue. Few activities front the street directly. Newkirk Street is used to move trucks between Sea Land Service's truck terminal at Holabird Avenue and

its pier at Newgate Avenue. Congestion generated by at-grade crossings at Newkirk near Holabird and at Newkirk near Keith Avenue create problems for truck access along this route. Newkirk Street lies at a low grade between rail yards and floods often. The street is deteriorated and has been cited as a major source of particulate pollution.

Holabird Avenue runs east from Ponca Street to Broening Highway and the Dundalk community. Holabird Avenue provides access to GM and Lever Brothers parking facilities as well as the Holabird Industrial Park. A Tunnel Thruway exit ramp is located on Holabird Avenue near Ponca Street. Holabird Avenue experiences congestion due to heavy rush-hour traffic volumes from local industries, the presence of the exit ramp, and the two at-grade crossing of the Chessie System. Congestion, as per a study by Kidde Consultants is expected to continue.

Newgate Avenue provides access to Canton's south shore. The street is privately owned by the Canton Company, though public access rights are maintained east of Newkirk Street. Several marine terminals are located along Newgate Avenue. The Canton railroad crosses Newgate Avenue three times and has street trackage. This causes substantial interference with street traffic when rail movements occur. Changes in rail movements occasioned by the Consolidation Coal development may alleviate Newgate Avenue's problems. Newgate has been cited by the State as a major source of fugitive dust pollution.

Environmental Quality

There are a number of complex issues concerning both waste water and air quality with respect to Canton. Wastewater issues arise from the lack

of sanitary sewers in parts of Canton and the resultant use of septic tanks in an area with a high water table. Air quality issues concern sources of total suspended particulate (tsp) pollution which have been identified by the Maryland State Department of Health and Mental Hygiene in Canton, causing the area to be considered "nonattainment" for Clean Air Standards.

Sewer Service

Businesses along Clinton Street, Leland Avenue, Newgate Avenue, and lower Newkirk Street in west Canton do not have public sanitary sewer service. Two businesses, Rukert Terminal and Netherlands Superintending, Inc., discharge sanitary sewage directly into the Harbor. Lehigh Cement, National Gypsum, and Sealand Services maintain pretreatment facilities which discharge effluents into the storm drain system which than drains into the harbor. National Gypsum's system has been cited as constituting a health hazard by the City Health Department. The remainder of establishments in west Canton use septic systems. Recent soil tests for new septic system permits performed by the City Health Department have shown a high water table and soil conditions in Canton which would disallow the use of new septic systems. Though reports of septic system failures are not numerous, the Health Department has questioned the feasibility of septic systems as an effective means for wastewater control in an area with soil conditions such as Canton. The Departments of Health and Public Works are preparing to begin a study of the effectiveness of present wastewate management practices in Canton.

A sewer system for Canton was an element of the Areawide Waste water Management Plan under the Section 201 Program performed for EPA. A trunk sewer line for Canton has been included in several of the last Capital Improvement Programs. The Department of Public Works has documented the need for a sewer system in Canton from the point of view of water quality maintenance. In the absence of a sanitary sewer, new industries are forced to provide private package treatment plants for wastewater control. From a water quality standpoint, these plants constitute added costs to the State for monitoring, and have demonstrated an uncertain quality of performance. From an economic development standpoint, these treatment plants impose added capital and operating/ maintenance costs on firms contemplating location in the area.

In 1978, the U.S. E.P.A. denied funding for the Canton interceptor sewer, citing the area's industrial character as the reason for its ineligibility. The City has moved the project to 1986 and intends to fund the project via City CIP loans and revenue loans. The project is not currently a priority project.

Air Quality

The Maryland Department of Health and Mental Hygiene (DHMH) has recently published the State Implementation Program (SIP) for meeting secondary air quality standards. Particulate pollution in Canton, consisting of dust and other suspended particles, exceeds limits set by EPA, making Canton part of a larger non-attainment area for total suspended particulate (TSP) pollution.

The following major sources of particulate pollution have been identified by the State in Canton:

1. Consolidation Coal Company - Canton Property - open storage
2. Clinton Street - dust from deteriorated roadbed
3. Leland Avenue/Haven Street - dust from roadbed
4. I-95 Construction
5. Newgate Avenue - dust from roadbed
6. Newkirk Street - dust from roadbed

Pollution from these sources must be brought under control by 1986. Some control will occur as construction on I-95 is completed and the programmed reconstruction of Clinton Street occurs. Even when these sources are brought under control and Canton is brought into attainment status for particulate pollution, no new economic activity which would generate over 100 tons per year of particulate pollution will be able to locate in the area without obtaining offsets from existing uses. The Consolidation Coal facility for example, intends to control particulate emissions to below the 100 ton per year limit. They will not be required, therefore, to obtain offsets from existing uses. Compliance for suspended particulates is often a matter of improved operating practices, repaving roadways and covering or wetting down open dry-bulk storage piles. These methods are usually inexpensive and bring an industry or business into compliance without high capital costs. Clean Air Act regulations related to particulates are especially important to bulk terminal and industrial uses which maintain open storage and engage in the transfer of bulk commodities.

Planned Improvements and Developments

Introduction

Public and private investment is occuring in Canton at a large scale. The City is implementing several major public works improvements to the area. These include I-95 construction, completion of the Keith Avenue arterial, and reconstruction of Clinton Street and portions of Newkirk Street. Holabird Industrial Park is being developed by the City on 220 acres of surplus Army land. Dredge spoils from the I-95 Fort McHenry Tunnel project are being used as fill in the development of a four berth 145 acre container cargo facility adjacent to Western Electric's Point Breeze Plant. In addition, a Canton Trunk Sewer line linking unsewered portions of Canton to the Back River Sewage Treatment Plant System is scheduled for 1986 in the Baltimore City Capital Improvement Program.

Private investment is being undertaken by Rukert Terminals in the expansion of its Pier 5 complex and headquarters building. General Motors is involved, with City assistance, in a $250+ million modernization and expansion program. Consolidation Coal Company has purchased 110 acres of Canton Railroad property and is building a modern coal export facility. In addition, both Western Electric and Lebanon Chemical have expressed interest in expansion of their facilities in Canton.

Public Projects

Work on the final phase of I-95 in Canton, the Fort McHenry Tunnel, approaches, and toll facility, began during the summer of 1980, and will

be completed in 1985. This will provide a direct link between Canton and Locust Point, access southwest to the Baltimore-Washington Corridor, and completion of the I-95 system in the region.

To provide additional access to Canton from I-95, Keith Avenue is being constructed to link I-95 to Broening Highway on the east. Keith Avenue will be accessible to Newgate Avenue via a second new street, Vail Street. This will provide access to I-95 from the eastern portions of Canton.

Improvements to local streets in Canton include the widening of Ponca Street and reconstruction of Poncabird Pass, the widening and reconstruction of Clinton Street from Boston Street to Leland Avenue, the reconstruction of Haven Street (contingent on an Urban Development Action Grant) and the reconstruction and widening of Holabird Avenue from Broening Highway to Dundalk Avenue.

The City is putting streets and utilities into the acre Holabird Industrial Park, a former Army base. Holabird sites are being marketed for light industrial uses. It is anticipated that 1500 - 2000 jobs might be generated at Holabird Industrial Park.

Using dredge spoils from the I-95 Fort McHenry Tunnel, a fill site between the Sea Land Service Container Terminal and Western Electric Point Breeze Plant will be developed as a 145 acre marine terminal by the Interstate Division for Baltimore City and the Maryland Port Administration. This facility will include three public berths and a fourth berth to be leased by Sea Land Service, Inc. for an expansion of its

present container facility. Employment is estimated at 378 permanent employees. Total anticipated investment is $123 million.

A sewer trunk line is under consideration for the Canton area at a cost of $5 million, as part of the approved Section 201 Wastewater Treatment Plan for the Baltimore Region. It would connect unsewered sections of west Canton to the Back River Sewage Treatment Plant. It is included in the City's Capital Improvements Program for funding in 1986.

Private Development Commitments

Rukert Terminals, Inc. is currently involved in improving bulk terminal facilities on Pier 5 along Clinton Street. Total investment is estimated at $7 million, including a $1 million Industrial Development Revenue Bond from the City. Improvements will ultimately include construction of several buildings for bulk cargo storage. An extension of the pier from 500 feet to 850 feet and a new headquarters building were completed in 1979-80.

Consolidation Coal Company has recently acquired 110 acres of land owned by the Canton Railroad Company along with controlling stock in that company. They intend to develop a major coal export facility on the site of the Cottman Ore Pier. Total investment in pier renovation, open storage facility construction, and rail system reorientation is expected to exceed $100 million.

General Motors Corporation has announced plans for a major modernization and expansion program at its Broening Highway Plant. Total investment

in the project is expected to exceed $250 million, of which $13 million is to be supplied through Federal Urban Development Action Grants. About 1000 jobs will be generated as a result of this development, allowing GM to recover some of the 2900 jobs lost during the past three years. As part of this program, GM will acquire 26 acres of Holabird Property from the City with an option 24 more contiguous acres. The City will construct access ramps from Keith Avenue into Holabird Industrial Park, and facilitate the acquisition by GM of several properties adjacent to its existing site. GM will expand manufacturing space by 433,000 square feet and use the Holabird acreage for parking displaced by the expansion on its current site. The plant will gear manufacturing activities to production of new lines of automobiles.

The Apex Oil Company has acquired the Parker-ASARCO property on Eastbourne Avenue for expansion of its petroleum storage and distribtuion facility from 9.84 to 50 acres. The former aluminum smelting site has been vacant for several years. Apex is likely to maintain the old "tank building" for sale or lease as a manufacturing site. The remaining buildings will be razed and replaced with petroleum storage tanks.

Private Development Possibilities

The Western Electric Company has indicated an interest in expanding operations at its Point Breeze plant on Broening Highway. The development of a new manufacturing activity oriented specifically to export markets is being considered. Such a project would require an estimated 50 additional acres of land and deep water access. Though no specific

plans have been defined, a site on the Canton-Seagirt fill site is likely to be sought by Western Electric. The City has indicated a willingness to support Western Electric in this matter.

Lebanon Chemical has indicated a desire to consolidate and expand their presently split operations at Lazaretto Point following completion of I-95 construction on their property. Though the nature of their expansion plans are undetermined, they have asked that Clinton Street be closed south of Newgate Avenue to increase the size and flexibility of their site. Clarification of Lebanon's expansion plans is likely after the company receives compensation for highway construction disruption from the I-95 Project.

Problems and Opportunities

The strong development activity in east Canton and the turnover of developable land to bulk storage uses in west Canton present a number of issues:

1. Lack of public sewers in west Canton compromises water quality by allowing industries to utilize septic systems under questionable soil conditions or permitting industries to discharge effluents directly into the Harbor. Industries who utilize package treatment plants incur extra costs, create high monitoring demands for the State, and gain responsibility for wastewater management, an area in which they usually have no expertise.

2. Sources of particulate air pollution have been identified in Canton by the State. Pollution from deteriorated roadbeds open storage and facilities railyards prevent the area from meeting primary and secondary clean air standards. This nonattainment of air quality may place limitations on new industrial growth which the area can absorb.

3. Western Electric is interested in expansion at its Point Breeze Plant, though site design and land acquisition plans have not been formalized. Such plans might conflict with plans for the Canton Seagirt Marine Terminal Project.

4. Lebanon Chemical is likely to vacate its site at 1800 South Clinton Street making the 3.86 acre parcel available for new development.

5. Consolidation Coal's (formerly Canton Company's) Pier on Clinton Street is not utilized and constitutes a development opportunity for a small port operation.

6. Ramp and intersection capacities on the Keith Avenue - Vail Street - Broening Highway systems are likely to be strained by development at Dundalk Marine Terminal, GM, Canton - Seagirt Marine Terminal, and Holabird Industrial Park, according to preliminary estimates made by the Transportation Planning Section.

7. Congestion at Broening-Holabird and Broening-GM Parking Lot intersections is likely to continue according to the Kidde Consultants report.

8. Congestion at Ponca Street-Holabird Avenue is likely to continue due to Tunnel Thruway Exit Ramp traffic, at-grade rail crossings, and industrial activity located along Holabird Avenue.

9. Clinton Street circulation is hampered due to trucks queuing to enter MPA's and Rukert's terminal facilities, trucks loading at docks located too near the street hence blocking traffic, terminal traffic crossing Clinton Street between piers and backup space, lack of offstreet parking, and heavy seasonal traffic generated by fertilizer plants.

10. At-grade rail crossings create traffic problems at the following locations:

    . Boston Street
    . Newkirk Street (nr. Holabird)
    . Newkirk Street (nr. Newgate)
    . Ponca Street
    . Holabird Avenue
    . Newgate Street

Development Opportunities

Opportunities for new development, beyond commitments and intentions discussed previously, are limited in Canton. Three sites with growth potential exist. However, these parcels are in private ownership and it is currently doubtful that there will be any City involvement in order to ensure development to the land's "highest and best uses." These sites are discussed briefly.

Parker-Apex Site - Industrial Shell Buildings Though Apex Oil is developing the majority of the Parker-owned former ASARCO complex as a petroleum products tank farm, it has indicated a willingness to maintain certain of the property's buildings for industrial use. The largest building, a 400,000 sq. ft. tank building might be attractive to industrial developers, though marketing property surrounded on three sides by oil storage tanks might pose problems. Because the site is owned by Apex Oil, it is likely that they would market the property and offer it on a lease-hold basis. The opportunity or need for City involvement does not appear to be strong.

Canton Company Clinton Street Pier - This 500' x 50' pier is located at the foot of Holabird Avenue property recently sold to Consolidation Coal Company by the Canton Railroad. The pier has a draft of 28 feet. Also on this property is a 40' x 68' extension of Holabird Avenue. This pier could be used to accommodate a barge feeder operation for containers similar to that currently operated by Trade East Company along Boston

Street. In order to perform such a function, a sufficient amount of backup space for container storage would be required. This could conceivably exist on Consol-owned land across Clinton Street. Consol plans to devote this land to open storage, though containers are currently stored on 280,000 sq. ft. of this land for the MPA Clinton Street Marine Terminal. Development of a feeder port operations would provide some employment on a currently unused pier and could provide additional taxes to the City. It would bring a currently unused portion of the shoreline into active use. City involvement might consist of negotiation with Consol to allow private acquisition or leasing of that portion of their property necessary for storage.

Lebanon Chemical Upper Site - Lebanon Chemical plans to vacate this site at 1800 S. Clinton Street and consolidate facilities at 2600 S. Clinton Street. This "upper site" consists of a deteriorated pier and a 3 acre tract of land east of Clinton Street. The pier is unusable and the land east of Clinton is covered with a building used for bagging and shipping fertilizer. The building is wooden and in deteriorated condition. This site could accommodate a small industrial operation given demolition of the existing structure. The City might consult Lebanon Chemical concerning the future of this site. It might be appropriate for the City to acquire the land and make site improvements (i.e., demolition, construction) or to assist a potential developer in such preparation. An industrial use on 3 acres of land could generate 30-40 jobs and maintain or increase tax revenues on the property.

Conrail Open Storage Land - Adjacent to its coal pier on S. Clinton Street, Conrail owns an elongated 16 acre tract of land which it currently uses for bulk commodity storage. The tract of land could constitute a

potential development site were it to be provided with sanitary sewer service and street access. Conrail is not currently interested in marketing the land. Rukert Terminals, Inc., however, has approached Conrail about purchasing the land at a future date for bulk material storage. This has been received favorably by Conrail. Though development potential might exist here, the costs of providing street access and public sewers, and the likelihood of the lands future sale to Rukert Terminals, involvement by the City does not seem warranted.

Recommendations

The following recommendations for City action are made concerning Canton.

1. The sewer system proposed for Canton should be built as per the Capital Improvements Program

2. Improvements to Clinton Street, and Newkirk Street, should be made as per the 1981-86 CIP. Improvements to other facilities cited by the State as air quality hazards (ie. Newgate Ave.) should also be made. This will ensure the area's ability to absorb new development while meeting Clean Air Standards at a future date.

3. Western Electric's expansion interests should be encouraged further by the City in a manner not to conflict with Canton/Seagirt Marine Terminal development.

4. The City should contact Lebanon Chemical concerning plans for the 1800 S. Clinton Street site so that development opportunities arising from Lebanon's vacating the site can be maximized.

5. An active use, such as general cargo "feeder" operation using barges, should be found for Consolidation Coal's Clinton Street pier recently acquired from the Canton Company. The City could attempt to acquire, directly develop the land, and resell it for such a use or could encourage Consol to seek such a tenant operation.

6. The Department of Planning with Transit and Traffic should perform a detailed analysis of circulation in Canton, expanding upon Kidde's recent study of Broening and Holabird and updating a similar effort done in 1969. Special attention should be paid to trip generation from new and planned developments at GM, Dundalk Marine Terminal, Holabird Industrial Park, Canton Seagirt, Consol Coal, and Western Electric.

HAWKINS POINT AREA STUDY
COASTAL ENERGY IMPACT PROGRAM
BALTIMORE HARBOR STUDY

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BALTIMORE HARBOR STUDY

Funded By a Grant from the
Coastal Energy Impact Program
Office of Coastal Zone Management
Through the Coastal Resources Division,
State of Maryland

Department of Planning
Larry Reich, Director
June, 1981

COASTAL ENERGY IMPACT PROGRAM

HAWKINS POINT AREA STUDY

I. INTRODUCTION

A. Location

B. Total employment

II. LAND USER INVENTORY

A. MANUFACTURING

1. Atlantic Cement

2. W.R Grace

3. U.S. Gypsum

4. SCM Glidden

5. Atlas Machine

B. WHOLE-SALE & TRUCKING

1. Yellow Freight

2. Striegel Supply

3. Johnson Transfer

4. Warwick Supply

C. PORT USE - EASTALCO ALUMINA PIER

D. SOLID WASTE DISPOSAL

1. SCM

2. BFI

3. Maryland Environmental Services

4. MPA - Dredge disposal

E. COMMERCIAL

F. RESIDENTIAL

G. ENERGY FACILITIES (Anne Arundel County)

1. BG & E Herbert Wagner Station

2. BG & E Brandon Shores Station

3. Associates Coal Terminal

III. INFRASTRUCTURE

A. Public Water and Sewer

B. Public Streets and Highways

C. The B & O Railroad (CSX System, Inc.)

IV. UNDEVELOPED LAND/POTENTIAL DEVELOPMENT SITES

A. Site I - Grace 51.15A

B. Site 2-

1. Grace 140.95A

2. Mayor & City Council 7.40A

3. B & O Railroad 11.4A

C. Site 3 - Patapsco & Marley Neck Co. - 49.0A

D. Site 4 - Patapsco & Marley Neck Co. - 118.96A

E. Site 5 - Maryland Port Administration - 88.79A

V. ISSUES/PROBLEMS

A. Access/Egress I-695 (State Consideration)

B. Coal Development Impacts

1. Pennington Avenue at-grade crossing

2. Glidden, Quarantine, Kembo Roads at-grade crossings

3. Coast Guard access to Harbor

E. Topographical Impediments to Development

F. Institutional Impediments to Development

1. Grace seeks vertical-horizontal integration

2. B & O seeks rail customer

G. Opportunity to solve area hazardous waste disposal problems at Hawkins Point sites if licensing obtained.

VI. DEVELOPMENT ALTERNATIVES - WR GRACE sites (A. & B. above)

A. Conventional Industrial

B. Marine Terminal - Major Industrial - Dredge Spoil Disposal

VII. RECOMMENDATIONS

A. Encourage MDOT & Toll authority to develop a full interchange at I-695 in Hawkins Point.

B. Grade Separations - Agenda & Cost Sharing

1. Pennington Avenue

2. Glidden, Quarantine Roads

C. Pursue formal agreement with Anne Arundel County on emergency service protection to Hawkins Point in case of rail crossing blockage.

D. Pursue alternative funding program for Hawkins Point Sewer.

E. Encourage development of WR Grace parcels by presentation of detailed development costs and benefits to landowners

F. Approach MPA concerning dredge spoil rehandling site - Marine Terminal development

G. Work with State solid waste review and city health/sediment erosion control authorities to obtain licensing for hazardous waste disposal at SCM & BFI Landfill sites.

Hawkins Point Area Study

I. Introduction

Hawkins Point is the southernmost area in Baltimore City. Located at the entrance to Curtis Bay, Hawkins Point is the name given to that portion of the Marley Neck Peninsula which is within Baltimore City. The area is located on the Baltimore Beltway, I-695, has rail service via Chessie's Marley Neck line. Two major shipping channels lie to the north and east of its shoreline.

Though a small residential community exists on Hawkins Point, the area is predominantly industrial. Over 1700 persons are employed in twelve industries located at Hawkins Point. Approximately 400 of the area's 860 acres are currently undeveloped, posing a substantial opportunity for new industrial development in Baltimore City.

II. Inventory of Land Users

A. Manufacturing Operations

Four major manufacturing operations currently exist at Hawkins Point. Atlantic Cement, W.R. Grace, U.S. Gypsum, and S.C.M. Glidden together employ 1560 people. A fifth manufacturer, Atlas Machine Co., is currently planning to locate on a parcel straddling the Baltimore City - Anne Arundel County line.

Atlantic Cement produces cement and concrete at its batching plant located at Chemical Road. It employs 12[1] persons at this operation.

W.R. Grace-Davidson Chemical Division, located on Chemical Road, produces industrial, chemical and automotive catalysts as well as several silicon derivative products. It has been located at Hawkins Point since 1909. Current employment at the operation is 766.[2] The facility receives materials for production via ship, barge, rail and truck. Distribution of products is primarily by truck and barge.

U.S. Gypsum Co., located at 5500 Quarantine Road produces gypsum building material products. Employment at this facility is 160.[3] The company receives barge shipments of production materials at its own finger pier. Product distribution is primarily by truck and to a lesser degree by rail.

The Glidden Pigments Group of the SCM Corporation produces titanium dioxide pigments at its facility at 3901 Glidden Road. This facility opened at Hawkins Point in 1956. It currently employs 676[4]. Glidden utilizes truck and rail as modes for receipt and distribution of materials and products.

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[1] Source: RPC Master Establishment File, 1976.
[2] Source: The Curtis Bay Works: W.R. Grace Co., 1981.
[3] Source: Maryland Manufactures: Directory, State of Maryland, Department of Economic and Community Development, 1979.
[4] Ibid.

Atlas Machine Company is currently in the process of locating a metal fabrication plant at a site on the City/Anne Arundel County border on Hawkins Point Road. Plans call for a marginal pier for handling oversize metal products. No final date for opening this facility has been set. Anticipated employment at opening is to be 150 with full scale operations employing approximately 600.

B. Wholesale and Trucking Operations

Four wholesale and trucking firms are currently located at Hawkins Point, employing 105 persons

Yellow Freight System, Inc. operates a motor freight hauling facility at 2301 Hawkins Point Road. 50[5] people are employed at this facility.

Striegel Supply and Equipment Company operates an equipment wholesale and service operation for locomotives at 6100 Chemical Road, employing 14[6] persons.

Johnson Transfer, Inc. operates a motor freight hauling operation at 2749 Hawkins Point Road. This employs 37[7] people.

Warwick Supply, Inc. has a construction equipment storage facility at 3000 Hawkins Point Road, employing 6 persons regularly.

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[5]Source: Telephone contact with company.
[6]Source: Telephone contact with company.
[7]Source: Telephone contact with company.

C. Maritime Facilities

Eastalco Aluminum Corporation operates a facility for receipt, storage, and shipment of alumina to its smelting plant in Frederick County, Maryland. The Eastalco Hawkins Point Pier operation employs 12 people.[8] The Frederick County plant employees 700 people and is dependent on this port operation for raw materials.

D. Solid Waste and Dredge Spoil Disposal Facilities

Three landfill operations are currently in operation at Hawkins Point.

Browning Ferris Industries, Inc. and SCM Corporation operate landfills on adjoining sites of 30.56 acres and 37.95 acres respectively. The land fills are located east of Quarantine Road. Though only conventional solid wastes are currently permitted, presently, both operators have filed for permits to dispose of hazardous wastes at this location.

The Maryland Environmental Services office is under an agreement with MPA to dispose of chromium waste from Allied Chemical's Baltimore City Operation. This hazardous waste landfill is located on approximately eight acres of land owned by the Maryland Port Administration at Thom's Cove. MPA operates a small dredge spoil disposal site at Thoms Cove. This operation receives spoil from _____.

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[8] Source: Telephone contact with company.

E. Commercial Activities

The only significant commercial activity located at Hawkins Point is Agro Motors, Inc. This is a used car dealership located at Fort Smallwood and Hawkins Point Roads. Data on employment and tenure of the operation are currently not available.

F. Residential Development

A small residential community exists in Hawkins Point. It is located between Hawkins Point Road and I-695 on a tract of land of approximately 5 acres.

The area's population in 1980 was 113, housed in 37 occupied dwelling units. Home ownership is high in the area. The neighborhood is predominantly black and rural in character. Two churches are located within the community. It is isolated from other uses in Hawkins Point as well as from the City at large.

G. Energy Facilities

Though no energy production or transfer facilities exist within Hawkins Point, there are several located immediately adjacent to the area on Marley Neck in Anne Arundel County. The presence of these facilities has an impact on the character and function of activities in Hawkins Point.

Baltimore Gas and Electric currently operates a power generating station, the Herbert E. Wagner Station, south of Hawkins Point. The station has four generating units, one of which burns coal and three of which burn oil. It is planned that two of the oil burning units will convert to coal prior to 1990. An estimated 1,200,000 tons of coal will be required per year for the Wagner operation after conversion. All fuels used in this station currently arrive by barge at a pier owned by B.G. & E.

Baltimore Gas and Electric is building a second generating facility, the Brandon Shores Station, adjacent to Wagner Station. Although the two units were originally designed to burn oil, both units are now planned to be coal-fired. The first unit will commence operation in 1984 and the second in 1987. When both units are operating, 2,500,000 tons of coal per year will be burned at Brandon Shores. Though it is anticipated that coal will be brought to Brandon Shores via barge, the possibility exists of rail deliveries of coal to the facility.

Both facilities will produce fly ash and bottom ash for the burning of coal, It is estimated that 1,200 tons of ash will be produced each day. Trucks will be used to haul ash from the power plants. The number of trucks required to remove fly ash and bottom ash from both facilities has been estimated at 100 per day.

Soros Associates is acting as devloper of a coal export super-terminal immediately north of BG&E's Brandon Shores Plant. The terminal will be used by five coal companies. It is scheduled to open with an export capacity of 15 million tons per year in 1985 and eventually reach a capacity of 30 million tons per year by 1990.

Coal will be delivered to the facility by train, stockpiled on site, and delivered to ships via a finger pier conveyor system. Approximately 8 unit trains per day, 4 filled and 4 empty, moving in and out of the facility are projected for 1985, rising to 16 trains by 1990 when the export figure is anticipated to reach 30 million tons per year.

III. Infrastructure

A. Public Water and Sewer

Hawkins Point is on the City's public water system. A storm sewer system also exists in the area. However, Hawkins Point is presently without public sanitary sewer service.

All businesses currently operate with package treatment plants or septic systems. Residences use septic systems which fail

frequently. The need for a public sewer facility is being assessed by consultants as part of the Areawide Section '201' Wastewater Management Plan study. The alternatives of connecting Hawkins Point to the Patapsco River plant in Fairfield or to the Cox Creek plant in Anne Arundel County are being evaluated. Limited service could also be provided by connecting the residential community to the nearby U.S. Coast Guard Station, which is considering construction of a pumping station and connection to the Cox Creek Plant. The city currently lacks funds to undertake construction of the sewer system without Federal aid. Because of EPA's policy of not funding sewer projects in predominantly industrial areas, it is doubtful that the City could assume the cost of extending public sanitary sewer service to Hawkins Point in the near future.

B. Public Streets and Highway

The western approach to the Francis Scott Key Bridge, part of the I-695 Baltimore Beltway, is located in Hawkins Point. The portion of I-695 in Hawkins Point and the Key Bridge are owned and operated by the State Toll Authority. Currently, all traffic using I-695 in Hawkins Point must use the Bridge and subsequently pay the toll. Traffic moving east on the Beltway is unable to exit on Hawkins Point. Likewise, traffic in Hawkins Point cannot gain access to the westbound Beltway.

The MDOT and Toll Authority are currently considering the option of creating a full interchange in Hawkins Point to provide full service to Hawkins Point and Marley Neck.

The main arterials feeding Hawkins Point are Marley Neck Road and Fort Smallwood Road from the south and Pennington Avenue from the north. Pennington Avenue is the only point of access to Hawkins Point from within Baltimore City. Pennington Avenue is crossed at-grade by the branch of the B&O Railroad which will serve the Soros Associates Coal Terminal at Marley Neck. The City is currently negotiating with the CSX System concerning the separation of grades at this site to prevent interruption of Pennington Avenue traffic by coal unit trains. Upon resolution of this issue, the City intends to improve Pennington Avenue.

Hawkins Point Road connects Pennington Avenue to Fort Smallwood Road, forming the transportation spine of Hawkins Point. Little of the area's industrial activity is located on Hawkins Point Road, though all local access streets emanate from it.

Chemical Road runs north from Hawkins Pt. Road and provides access to the W.R. Grace Company as well as to W.R. Grace's large undeveloped tracts of land. Striegel Supply and Atlantic Cement are also located on Chemical Road.

Quarantine Road provides access to the major undeveloped W.R. Grace parcel, to the BFI and SCM landfills, and to U.S. Gypsum. A grade crossing of the B&O rail line to Marley Neck is located at the Quarantine Road entrance to U.S. Gypsum.

Glidden Road parallels the Key Bridge approach. It provides access to Fort Armistead Park, the Eastalco Pier, MPA's undeveloped site, the Cosmin-Co. and the MES chromium fill site, and the SCM Glidden plant. Glidden Road is crossed at-grade by the Marley Neck branch of the B&O, affecting access to activities located on that street.

C. The B&O Railroad (CSX System, Inc.)

The B&O Railroad of the CSX System operates a branch of the Curtis Bay Subdivision which currently serves industries in Hawkins Point and Marley Neck. The line, called the Marley Neck Branch, extends from the Curtis Bay Yards south across Pennington Avenue in the City and Ordnance Road in the County, crossing Curtis Creek to Hawkins Point via a swing bridge. Track moves along the periphery of Hawkins Point, serving industries located along the Curtis Bay and Patapsco River shorelines before moving south to terminate near BG&E's Wagner Generating Station. This rail line crosses Quarantine Road and Glidden Road at-grade in Hawkins Point. The B&O will be the sole transporter of coal to the Soros Associates Coal Export

Terminal being developed directly north of BG&E's Brandon Shores Plant on Marley Neck. This facility in its first phase, is likely to generate up to eight train trips per day over the Marley Neck Branch. This, combined with other local rail traffic, could have an impact on access to Hawkins Point via Pennington Avenue and access to local industries located on Quarantine Road and Glidden Road. The Pennington Avenue situation is currently being reviewed by CSX and the Interstate Division for Baltimore City in an attempt to determine relative financial responsibilities for a grade separation project. The Glidden Road and Quarantine Road situations are not currently the subject of such talks.

IV. Undeveloped Land

Hawkins Point contains the largest concentration of industrially zoned, undeveloped land in Baltimore City. The 409 acres on six parcels in the City plus an adjoining 140 acres on two adjoining parcels in Anne Arundel County offer a resource for industrial development in this Port area.

Site 1. W.R. Grace owns a 51.15 acre waterfront site located east of Grace's existing plant. Approximately twenty acres of this parcel are used as a settling pond for Graces's process wastewater. Thirty acres of developable fastland exist here with potential deepwater access. The

development of this parcel is likely to be related to development activity on W.R. Grace's other site (Site 2). Development alternatives for Site 1 and Site 2 will be described in a subsequent section.

Site 2. W.R. Grace owns 140.95 acres, the B&O Railroad 11.74 acres and the Mayor and City Council 7.4 acres forming a contiguous development site of 160.09 acres. A grade variation of over 100 feet constrains development options on this site. In addition, W.R. Grace has been allowing BFI to remove soil from the site to use in BFI's landfill across Quarantine Road. BFI now intends to commence reclamation of the land by placing sludge from the City's Back River Sewage treatment plan on it. This would limit development options in the short term. W.R. Grace has expressed a desire to limit devleopment of its property to industries vertically or horizontally integrated with Grace's Curtis Bay operation. Again, development alternatives for W.R. Grace's property on Hawkins Point are explored in the following chapter of this report.

Site 3. This is a 49 acre site owned by the Patapsco and Marley Neck Co., a subsidiary of The CSX System, Inc. It is adjacent to a 40.34 acre tract in Anne Arundel County owned by the same company. Together they constitute an 89.34 acre tract which would be suitable for one large or

several small industrial developments. Site preparation costs, including grading, filling and access are likely to be minimal. The site has direct access to Hawkins Point Road and Fort Smallwood Road. It also has a rail spur. Employment for industry, at 12 jobs per acre, could be estimated at 810 jobs. The only potential constraint to development lies in the fact that the railroad interests owning the land are anxious to develop rail-dependent activities on this and other Hawkins Point sites. Often these uses do not return as high a number of employees per acre as does manufacturing development.

Site 4. This 79.74 acre site is owned by the Marley Neck and Patapsco Co. and is adjacent to a 100 acre site in Anne Arundel Co. owned by Kennecott Refining Company. This constitutes a site of 179.74 acres suitable for heavy industrial development. Access is provided by Fort Smallwood and Glidden Roads. The property is adjacent to a rail branch line making rail access via spur construction feasible. Site preparation costs would be minimal. Assuming 12 jobs per acre the site could employ up to 2156 persons.

As with other railroad-owned properties, the 79 acre segment of this site is being marketed specifically to railroad-dependent uses. The railroad is looking to

attract firms involved in metal fabricating, chemical processing, bulk liquid products, or automotive goods to this site. Though, according to Chessie representatives, an average of six firms per year view CSX-owned sites in this area, no development has been committed to.

Site 5. This 31.45 acre site is owned by the Marley Neck and Patapsco Company. It has a rail spur (used by the Glidden Corp.) and is located on Glidden Road. Topography of the land is not likely to impose high site preparation costs upon development. At 12 jobs/acre of manufacturing, 372 persons might be employed here.

Access to the site from Glidden Road is affected by the at-grade crossing to the B&O Marley Neck Branch moving coal to the Soros Terminal, located adjacent to this site. The six to eight trains per day which can be expected to initially serve the coal pier may limit access on Glidden Road as they reduce speed when entering the coal terminal.

Site 6. This site consists of 30 developable acres on an 88.79 acre site owned by the Maryland Port Administration. The site was originally purchased by the MPA for development of a marine terminal. The original terminal design was rejected by the U.S. E.P.A. Subsequent designs were found to be economically infeasible. The parcel is now

being used as a spoils disposal site operated by MPA, a chromium waste disposal site operated by Maryland Environmental Services, and an alumina transshipment facility, owned and operated by Eastalco Aluminum Corporation. Long-term development constraints on the landfill sites, combined with the parcel's irregular configuration render only 30 acres along the southern edge of the property developable. Approximately 15 acres of the former U.S. Quarantine Station could also pose development potential in the area. The site contains a rail spur and street access via Glidden Road.

Industrial development, at 12 jobs/acre, could lead to 360 jobs on site. Though the site has poor drainage and is partially covered by surface water, topography does not impose inordinate development costs. Access via Glidden Road might be impeded by frequent train traffic associated with Soros Associates Marley Neck Coal Terminal.

V. Development Alternatives for W.R. Grace Sites

While industrial development on the Marley Neck and Patapsco Company and MPA sites is rather straighforward, development on W.R. Grace's two sites presents a more complex situation. The primary factor here is the topography of the larger of the two sites (Site 2). The site contains a hill, with grades ranging from 36 to 130 feet above sea level. Any development on the site would need to be preceded by a significant

amount of earth-moving, increasing site preparation costs to either the current owner or future developer. A twenty acre portion on the site's eastern edge is being excavated currently by Browning Ferris Industries as a borrow pit. The configuration of this excavation is efficient from the standpoint of BFI's needs. However, cutting from the hill on its steeper, non-rail access side is not efficient in terms of yielding a site for industrial development.

Two alternative proposals are presented below. They respond to the need to excavate in order to create a developable parcel and the need to dispose of potentially large quantities of excess soil within a limited regional soil market.

Alternative One presents a minimum excavation option, posing near-term industrial development on both Grace sites.

Alternative Two presents a maximum excavation option, posing long-term (i.e. 20 + years) development of a marine terminal on Site 1 and major industrial development on Site 2.

A. Alternative One

Under this alternative, 1-2 million cubic yards of earth are redistributed on W.R. Grace sites to create three parcels of land suitable for industrial development. Soil cut from the site is used as fill on the site to obviate the need for Grace to market soil outside of its own development.

1. Site Description - Three sites are created on W.R. Grace land:

   a) Site 1 - 30 acres light industrial development; deepwater, rail, highway access; elevation-sealevel employment = 360 jobs;

   b) Site 2a - 90 acres heavy industrial development; highway access; elevation-100 feet; employment = 1080 jobs;

   c) Site 2b - 25 acres light industrial development; highway access; elevation - 70 feet; employment = 300 jobs;

   d) Total developed acreage = 145.18A

      employment = 1740 jobs

2. City Incentives

   In negotiating with W.R. Grace, the City will likely be asked to provide incentives to the development program. The following incentives are likely to be offered:

   a) Provision of access roads to Site 1.

   b) Provision of utilities to all sites.

   c) Removal of ships from dead ship anchorage.

   d) Financing assistance via MILA for site preparation.

   e) Marketing assistance for firms integrated with W.R. Grace production.

3. Chronology of Development Actions

Year 1 - City approaches W.R. Grace with development alternatives.

W.R. Grace selects alternative 1.

Year 2 - W.R. Grace begins site preparation by excavating cut and fill on Sites 1 & 2.

City develops access to Site 1.

City extends utilities to Sites 1, 2a, 2b.

City works with Army Corps to remove dead ships from anchorage.

4. Site Preparation Costs and Revenues

	Cost	Revenue
a) City:		
o Site 1 access road 2000' @ 400/1f.	$ 800,000	-
o Site 2a, b utilities	$ 500,000	-
o Dead ship removal	no estimate	-
	1,300,000	-

Cost/Benefit of Development Alternative I - Industrial Development

Projects	Investment[1.] ($m)	Employment[2.]	Payroll[3.] ($m)	Payroll Tax[4.] ($m/yr)	Property Tax[5.] ($m/Yr)
A. Private					
1. W.R. Grace Deepwater Site (30A)	12.6	360	5.8	.4	.35
2. W.R. Grace Sites (115A)	48.5	1380	22.1	1.7	1.35
3. CSX & MPA Sites (308A)	121.4	3696	59.1	4.4	3.38
4. Atlas Machine	19.7	600	9.6	.7	.55
Sub Total	202.2	6036	96.6	7.2	5.63
B. Public					
1. Industrial access roads	.8	-	-	-	-
2. Utilities to industrial sites	.5	-	-	-	-
3. Sanitary Sewer	5.0	-	-	-	-
4. Beltway Interchange	1.3	-	-	-	-
5. Pennington Avenue	19.0	-	-	-	-
Sub Total	22.6	-	-	-	-
Total	224.8	6036	96.6	7.2	5.63

1. includes site acquisition ($45,000/A), site development ($25,000/A), 50,000/A deepwater & additional excavation costs of $3/cy where necessary, bldg. costs of $27/ft2at 1000 ft2/employee.
2. assumes 12 employees/gross acre
3. assumes 16,000/employee
4. at 7 1/2%
5. at .47 market value assessment, state property tax rate at .20/$100, City property tax rate at $5.93/$100. Includes only site costs, no personal property taxes on equipment have been included.

b) W.R. Grace:

o Site 1 fill (122,050 cy @ $3/cy	$ 367,515	-
o Site 2a cut and fill (799.593 cy)	$2,338,779	-
o Site 2b cut and fill (175,213 cy)	$ 525,639	-
o Site 1 sale	-	$1,500,000
o Site 2a sale	-	$4,050,000
o Site 2b sale	-	$1,125,000
	$3,231,933	$6,675.00

5. Cost/Benefit of Alternative I. (see table insert)

6. Advantages/Disadvantages

a) Advantages

i) involves only City and W.R. Grace;

ii) short lead time in preparing for development;

iii) minimizes grading costs;

iv) minimal City expenditures.

b) Disadvantages

i) creates two sites without rail access, limiting marketability;

ii) City is not final decision maker in guiding

development to use beneficial in terms of jobs and taxes; and

iii) requires W. R. Grace to invest in speculative industrial development.

B. Alternative Two

Under this alternative, the entire hill on W.R. Grace's Site 2 is removed to create a 132 acre industrial site with rail and highway access. The 7.8 million cubic yards of earth cut from the site are sold in the open market, sold to MPA to use as a stabilization medium at Masonville, and used to stabilize dredge spoils on W.R. Grace Site 1. Site 1 would be sold to MPA for use as a dredge spoil disposal and/or rehandling site. When stabilized, the site would eventually be developed as a four berth marine terminal to meet Port needs after the year 2000.

1. Site Development

a) Site 1 - 150 acre, 4 berth marine terminal on 30 acres W.R. Grace fastland and 120 acres fill; deepwater, rail and highway access; employment = 600 jobs; completion 2010; interim use as spoil disposal/rehandling site for port maintenance and private projects.

b) Site 2 - 132.5 acre heavy industrial development;

rail, highway access; elevation = 50 feet; employment = 1590 jobs; completion 1995;

c) Total: developed acreage = 282.5 A
employment = 2190 jobs

2. City Actions/Incentives

It is likely that Baltimore City will be asked by W.R. Grace and the MPA to participate in this development project.

The City may offer a variety of incentives to induce Grace and MPA to develop:

a) Construction of roads to MPA and Grace properties
b) Extension of utilities to MPA and Grace properties
c) Financial assistance via MILA funds to prepare W.R. Grace site for development
d) Assistance on marketing Grace site to integrated industry
e) Assistance to developer of Grace property with permitting, regulatory procedures, tax-exempt financing, etc.

3. Chronology of Development Activities

Year 1 - City presents alternatives to W.R. Grace.
and to the MPA. Lobbies to have Site 1 purchased by MPA as spoil rehandling/marine terminal site.

Year 2 - MPA acquires Site 1 from W.R. Grace.

MPA develops bulkhead for spoils disposal area -

City contracts with Army Corps of Engineers for dead ship removal from Anchorage. Corps pays 50% of cost, State pays other 50%.

Grace sells earth from Site 2 annually through year 20 at 100,000 yards/year to projects other than Masonville and Hawkins Point.

Year 3 - MPA commences dredge spoil rehandling operation at Hawkins Point through year 15.

Year 5 - MPA purchases 3 mcy of earth from W.R. Grace (Site 2) for Masonville Stabilization, through year 15.

Year 15 - MPA purchases 2 mcy of earth from W.R. Grace for Hawkins Point stabilization, through year 20.

Year 25 - W.R. Grace sells improved Site 2 to industrial developer.

Cost/Benefit of Development Alternative II - Marine Terminal

Projects	Investment[1] ($m)	Employment[2]	Payroll[3] ($m)	Payroll Tax[4] ($m/yr)	Property Tax[5] (Sm/yr)
A. Private					
1. W.R. Grace site (132.5A)	52.2	1590	25.4	1.9	1.45
2. CSX & MPA sites (308A)	121.4	3690	59.1	4.4	3.38
3. Atlas Machine	19.7	600	9.6	.7	.55
Sub-total	193.3	5886	94.1	7.0	5.38
B. Public					
1. Spoils Disposal Site (3.5 mcy)	17.56.	20	.3	.02	10.07.
2. Marine Terminal (4 berth 150 acre)	168.5[8]	600[9]	9.6	.7	4.2[10].
3. access roads	1.4	-	-	-	-
4. utility connection	.5	-	-	-	-
5. Sanitary Sewer	5.0	-	-	-	-
6. Beltway Interchange	1.3	-	-	-	-
7. Pennington Avenue	15.0	-	-	-	-
Sub-total	200.2	620	9.9	.72	14.2
Total	402.5	6506	104.0	7.72	19.58

1. includes site acquisition (45,000/A), site development ($25,000/A, $50,000/A deepwater, & additional excavation costs of $3/cy where necessary, bldg costs of $27/ft^2 at 1000 ft^2/employee.
2. assumes 12 employees/gross acre
3. assumes 16,000/employee
4. at 7 1/2%
5. at .47 market value assessment, State property tax rate at .20/$100, City property tax rate at $5.93/$100. Includes only site costs, no personal property taxes on equipment have been included.
6. at $5/cy dredge spoil disposal facility costs
7. at $3/cy revenues to the State from dredge spoil disposal fees
8. at $40m/berth
9. at 4 employees/acre
10. rental charges for cranes, equipment berthing

4. Site Preparation Costs and Revenues

	Cost	Revenue
a) MPA		
o Site 1 dredge spoil disposal - 3.5 mcy @ $3/cy (minimum fee)	-	$10,000,000
o Site 1 fill-borrow from Site 2 for spoil stabilization --3.5 mcy	$ 7,000,000	-
o Site 1 acquisition @ $45,000/A	$ 1,350,000	-
o Marine Terminal Development @ $40 million per berth	$160,000,00	-
	$168,350,000	$10,000,000
b) City:		
o Site 2 access road (2500 @400/1f.)	$1,000,000	-
o Site 2 access road (1000' @ $400/1f.)	$ 400,000	-
o Site 2 utilities connections	$ 500,000	
o Dead ship removal	no estimate	-
	$1, $1,900,000	-
c) W.R. Grace:		
o Site 1 sale	-	$1,350,000
o Site 2 earth sale (net revenue)	-	$1,750,000
o Site 2 sale	-	$5,962,500
	-	$9,062,500

5. Costs/Benefit of Alternative I (see table insert)

6. Advantages and Disadvantages

a) Advantages

i) Provides for partial solution to Port dredge spoil disposal issue;

ii) Provides new site for marine terminal construction;

iii) Creates large industrial site with complete land transportation access;

iv) Provides benefits at little cost to W.R. Grace;

v) Provides high employment for limited City involvement.

vi) Provides soil for stabilization for MPA's Masonville Terminal.

vii) Marine terminal creates a number of spin-off industries, eq. storage companies, packing/crating, etc.

b) Disadvantages

i) Relies on MPA's willingness to commit to development on a site never previously considered;

ii) Long-range (30-year) nature of development is vulnerable to interference from market forces;

iii) Tax revenues would be limited by MPA tax - exempt status - payment in lieu of taxes would need to be negotiated;

iv) Relies on W.R. Grace's ability to place up to 20% of the current annual Regional market level for borrow soil in the market over a twenty year period;

v) Relies on W.R. Grace willingness to engage in long range speculative development.

Issues and Problems

The following issues exist in Hawkins Point relative to the area's continuation as an industrial area as well as its development to full utilization.

1. Access to the interstate highway systems via I-695 is limited to traffic using the Key Bridge. The State Toll Authority and Department of Transportation are currently considering options to allow a full interchange.

2. Development of the Soros Coal Terminal in Anne Arundel County will produce the following impacts:
   a. blockage of Pennington Avenue access to Hawkins Point area from the north, affecting 15 firms and 2447 jobs in Hawkins Point and lower Curtis Bay, as well as City emergency vehicle access.
   b. blockage of Quarantine Road, Glidden Road and Kembo Road, affecting 5 firms with 1200 employees.

c. blockage of the Curtis Creek Swing bridge cutting of the Baltimore Harbor Coast Guard Station from access to the Harbor.

3. Public Sanitary Sewer Service does not exist to Hawkins Point. The City has a consultant under contract to determine systems alternatives and feasibilities as part the area wide 201 wastewater facilities plan.

4. The dead ship anchorage in Curtis Bay will need to be cleared of ships in order to accomodate development on the north shore of Hawkins Point.

5. The topography of the vacant W.R. Grace site poses high costs to development. There is a need to more between 2 and 7 million cubic yards of each to create developable land configurations on this site.

6. Neither W.R. Grace nor the CSX Railroad. Owners of most developable land at Hawkins Point, are interested in development land for other than uses which relate to their existing operation.

7. Hazardous waste disposal sites on Hawkins Point could be integral to the City's hazardous waste disposal program.

Recommendations

The following actions are recommended for the City with respect to ameliorating problems and encouraging devleopment in Hawkins Point.

1. The City ought to monitor and, perhaps, provide imput to the negotiations between MDOT and the Toll Authority concerning providing a full interchange on I-695 in Hawkins Point.

2. The City ought to work with CSX and Anne Arundel County on developing a financing mechanism to pay for grade separation at Pennington Avenue, Quarantine Road, and Glidden Road.

3. The City should pursue a formal agreement with Anne Arundel County for police, fire, and ambulance protection to Hawkins Point in light of potential disruptions to access caused by coal trains moving to the Marley Neck terminal.

4. The City should investigate alternative funding mechanisms, including cost sharing, to finance construction of a sanitary sewer system for Hawkins Point. Such funding scenarios would be integrated with design alternatives being investigated under the Section 201 study now underway.

5. The City ought to approach W.R. Grace concerning development of its large, vacant sites. Issues to be discussed would include possible dredge spoils rehandling - marine terminal development, coordination with BFI excavation activities, removal of dead ship from Curtis Bay anchorage, and possible marketing assistance.

6. The City should approach the Maryland Port Administration concerning the possibility of developing a dredge spoil rehandling - marine terminal facility on the north shore of Hawkins Point.

   Issues discussed would include MPA's dredge spoil deposit needs, long-range container terminal demand, integration of development with W.R. Grace development on adjacent site.

7. The City should work with concerned State departments to obtain hazardous waste permits at SCM and BFI sites. The City Health Department ought to maintain vigorous control over hazardous waste disposal facilities on the Quarantine Road sites to assure good practices. The Planning Department should provide input of the effect of various waste disposal practices on existing uses and proposed development.

Fairfield Industrial Area

Fairfield Industrial Area

A peninsula of land in south central Baltimore, Fairfield encompasses 57 businesses employing some 4,800 people, 3 separate residential communities with a combined population of 1,457, and an extensive network of railroads and highways. The many warehouses, oil tanks, storage yards, and piers which predominate the landscape are testimony to the area's excellent rail, highway, and port access which has made Fairfield a major transhipment and storage point for goods as diverse as automobiles, oil, ore, chemicals, and food stocks. Besides commerce, the area's businesses also provide a significant number of jobs in shipbuilding and repair, chemical processing, asphalt production, metal working, and general manufacturing.

Development History

Despite repeated attempts by land speculators to promote industrial and residential development, Fairfield remained a rural, agricultural area until the late 19th century. Prior to that time the only significant development had been the founding of "Freetown," reputedly the first settlement of free blacks in the eastern United States.

Two events opened Fairfield to widespread residential and industrial development. In 1878 the state bought the Light Street bridge from its private owner and eliminated the five cent toll thereby encouraging residential development south of the Middle Branch. Then in 1882 the B & O Railroad extended its main line across the Middle Branch, through Brooklyn, and down to Curtis Bay. Almost immediately industrial development began. The B & O Railroad built a coal pier and four other companies opened plants by the turn of the century.

The early 1900's saw a rapid expansion of industrial development, particularly of oil and chemical companies, metal products manufacturers, and ship-building and repair yards. By 1918 when Fairfield was annexed to Baltimore City roughly 2,000 were employed in area industries.

In conjunction with this industrial development four residential communities took root: Brooklyn, Curtis Bay, Old Fairfield, and East Brooklyn (today's Wagner's Point). Most of these began as clusters of company sponsored housing.

The next major surge of development occurred in the 1940's when the United States government established the largest shipyard on the east coast in Fairfield to build Liberty and Victory ships for the war effort. During the course of the war more than 500 vessels were built and launched at the Fairfield yard. Between 1940 and 1944 vacant land in Fairfield disappeared, replaced by new housing for workers, storage yards, and the expansion of industries related to the war effort.

After the war the land occupied by the shipyard was returned to its private owners and wartime housing was either torn down or converted to public housing. (Fairfield Homes was established in this way). The end of the war also saw the development of extensive tank farms in Fairfield and the completion in 1957 of the Harbor Tunnel Thruway which tied Fairfield to major highway systems of the eastern seaboard.

Existing Conditions

Industrial Activity: 57 industries are located in Fairfield: about 40% are involved in commodity storage and distribution, 20% in petroleum storage and refining and 17% in chemical manufacturing. Practically all the rest are engaged in metal manufacture and fabrication, shipbuilding and repair, and general manufacturing.

*Chemical Manufacture -- Most of Fairfield's ten chemical manufacturers are located south of the Harbor Tunnel Thruway crossing. The three largest firms are FMC Corporation, producer of organic chemicals and pesticides, with 395 employees; Conoco Chemicals, maker of detergents and alkalytes, with 182 employees; and Alcolac Corporation, manufacturer of detergents, with 160 employees.

*Petroleum Storage and Refining -- Petroleum companies maintain two types of operations in Fairfield -- tank farms and asphalt refineries. Fairfield contains the largest concentration of tank farms of any area on the Baltimore harbor. Petroleum products storage facilities, maintained by eight oil companies, occupy over 300 acres in Fairfield. The tanks store both light fuels (gasoline, home heating oil, kerosene, and jet fuel) which can be piped into the area through the Colonial Pipeline and heavy fuels (used in manufacturing processes and power plants) which are too thick to be piped and must be moved by ship or barge. In addition to the tank farms, Fairfield contains four asphalt plants which serve both a regional and national market.

Crude oil used in asphalt production is brought to these plants by barge or ship while the asphalt is distributed by truck or rail.

*Metals Manufacture and Fabrication -- Seven firms engage in metal manufacture or fabrication. The largest, Bethlehem Steel's Buffalo Tank Division, employs 97 persons in the production of steel tanks ranging from fuel tanks used by gasoline stations to nuclear reactor shields. Another firm, American Seamless Tubing Corporation, was recently acquired by Copperweld, Inc. and is expected to expand from 60 to 200 employees.

*Shipbuilding and Repairing: The largest employer in Fairfield is the Maryland Shipbuilding and Drydock Company which employs 1,500 people at its Frankfurst Avenue facility. Fairfield's other ship repair firm is the American Dredging Company which specializes in the maintenance of dredging vessels. It employs 17 persons.

*Commodity Storage and Distribution -- Three distinct categories of commodities are stored and distributed at Fairfield facilities. General Merchandise. Low rents and excellent transportation have made Fairfield a favorite location for storing or warehousing a wide variety of products including automobiles, lumber, steel, and plastics. The largest storage operations are run by the Weyerhaeuser Company, manufacturer and distributor of lumber products, and by Hobelmann Corp., which imports and stores Datsun automobiles at their Fairfield facility. Many small firms lease space in the long

row of warehouses operated by Harris Heller Terminals between Curtis and Pennington Avenues and in the Empire Industrial Center on Benhill Avenue.

Solid Bulk Commodities. Two companies store ore and coal in Fairfield. The CSX Railroad runs both an ore import yard and a coal export yard on Curtis Bay. Overflow at the ore import facility is stored by the Joseph Hock Company at their yard on Northbridge Avenue.

Liquid Bulk Commodities. Besides petroleum, two other liquid commodities are stored and distributed in Fairfield. Skyline Terminals, recently acquired by W.R. Grace Company, handles commodities for food and chemical processing industries. Allied Chemical operates a terminal which receives chemicals shipped by barge from its New Jersey plant.

*General Manufacturing -- Two sizeable brick manufacturers operate plants in Fairfield. Harbison-Walker Refractories on Patapsco Avenue employs 510 people and General Refractories on Chesapeake Avenue employs 325.

Another notable Fairfield business is Brooklyn Salvage Corporation, an auto junkyard at 1600 Carbon Avenue.

Residential Areas: Nestled among Fairfield's heavy industry are three residential communities.

*Old Fairfield: Dating back to the turn of the century when housing was allowed in industrial land, this small black community of about 200 residents is impacted not only by industrial encroachment but also by unpaved or deteriorated streets, vacant houses and lots, poor street lighting and limited public transportation. In 1977 the City extended a sewer line into the area.

*Fairfield Homes: Built during World War II to house workers for Fairfield's wartime industries, Fairfield Homes was converted to public housing after the war and today houses 1002 residents -- almost all of them black. Bordered north and south by streets with heavy truck traffic and separated from the nearest shopping areas by the CSX Railroad's Curtis Bay yard, the community is subject to high levels of noise and dust as well as the difficult and dangerous situation of having to cross railroad tracks and highways to reach the nearest retail store. In an effort to improve community facilities, a recreation complex is being built in the project itself.

*Wagner's Point: This 3/4 lock-long, white working class community of 255 residents originated as housing for employees of nearby industry. Bordered on one side by a heavily used industrial road and on the other side by tank farms, Wagner's Point consists of approximately 85 rowhouses and boasts the only grocery store on the Fairfield peninsula. The streets in the community are in generally good repair and the City maintains a playground.

Besides the three communities on the peninsula itself, two others -- Brooklyn and Curtis Bay -- border Fairfield on the northwest and west respectively.

Planned Development

Already intensely developed, Fairfield offers few new development opportunities except by filling in the current shoreline or relocating existing uses.

Private Activity: Two privately sponsored projects have been announced.

*Island Creek Coal-Kentucky Ohio Transportation Inc. Coal Terminal -- On underutilized land in the center of the CSX Railroad's Curtis Bay Yard, a storage area is being prepared for a major coal export terminal. Coal stored in the yard will be transported by an automated conveyor system to a new pier presently being built just south of CSX Railroad's existing coal pier. The Island Creek terminal will exclusively handle coal used for steam generation. Unlike coal used in steel making, which must be carefully graded and mixed for each separate order, the specifications for steam coal, as it is called, are much less stringent. Whereas the different grades of metalurgical coal usually are stored in separate railroad cars, steam coal can simply be stored in large open piles. This enables terminals like Island Creek to make use of unit trains where entire 130-car trains are hired to deliver nothing but one kind of coal. The train enters the terminal, dumps its entire load, and moves out quickly and efficiently. The cost of developing the Island Creek facility is pegged at $100 million. Opening in 1983 it is expected to handle up to 12 million tons of coal a year and employ about 150 persons.

*Skyline Terminals, Inc. -- W.R. Grace recently acquired Skyline Terminals and is expected to invest $5 million to expand the Fairfield facility. Improvements are likely to include redesigning truck bays, providing additional storage capacity, and constructing a new pier for incoming shipments of liquid bulk products.

Public Activity: One major public investment is programmed for Fairfield.

*Masonville Marine Terminal -- to augment its enormously successful general cargo and container handling operations, the Maryland Port Administration will build a new 350-acre terminal largely on fill along the northwest shore of the Fairfield peninsula. With four berths, the new facility will be capable of handling more than 3 million tons of container cargo a year when completed. Together with the MPA's major existing container facility, the Dundalk Marine Terminal which presently moves about 3.77 million tons of container freight a year, and the Canton Seagirt Marine Terminal now under construction, the new Masonville Terminal will enable the port to meet expected demand into the next century. Construction, costing $112 million, will be phased so that two berths will be completed in 19 D and another two by 2000. Over seven million cubic yards of fill, made up of dredge spoil and stable soil, will be needed to create the site for the new terminal In addition, the new facility will necessitate a number of significant transportation improvements, including extension of rail service into the facility by the CSX Railroad, construction of a new interchange between the Harbor Tunnel Thruway and the terminal, and possibly improvements to Frankfurst Avenue near the new facility.

Future Opportunities and Issues

Undeveloped land in Fairfield is both scarce and rarely vacant. The limited undeveloped land that exists is most often used for storage. Thus, all but one of the developable sites identified in the accompanying map are presently used for storage. The availability of a functioning storage site for future development is at best uncertain. Furthermore, two of the sites identified are adjacent to residential communities. This could limit the potential manufacturing activities that would be acceptable on these sites. The one vacant site identified as having development potential is adjacent and immediately south of the Patapsco Waste Water Treatment Plant. It contains 20 acres and affords deep water access.

Besides these limited opportunities for industrial development, there is also the possibility of creating a park on the Pennington Avenue landfill located on the southwest border of Fairfield. The 70 acre landfill which has been used for demolition debris, domestic waste and incinerator ash was closed in 1981. The park would be a recreational resource for the Curtis Bay community.

In addition to these development opportunities the future presents a number of unresolved issues for Fairfield:

*Land Use Issues -- Because of the scarcity of developable land in Fairfield, it has been suggested that some of the peninsula's many tank farms be relocated elsewhere. The proposal is prompted by a number of factors. First, it is supposed that oil distributors who

are not dependent on water-borne deliveries could just as well locate on a peripheral site in the region further inland along the Colonial Pipeline. Second, it is speculated that industrial or port-related development of the tank farm sites would yield greater economic benefits to the city in the form of taxes and jobs.

It has been found, however, that not only would it be extremely costly to relocate the tanks (more than $50 million for relocating 5 million barrels of storage capacity), but also even those distributors who could obtain all their oil through the Colonial Pipeline prefer to retain the flexibility of being able to receive oil by ship if necessary.

A second land use issue facing Fairfield revolves around the conflict between residential and industrial activity. The entire Fairfield peninsula is zoned for the heaviest allowable industrial activity. This creates problems for the peninsula's residential communities which experience elevated levels of air and noise pollution, truck traffic, and industrial encroachment. It also puts the City in the difficult position of having to decide whether to fund projects that will shore up the residential communities or to encourage the conversion of the entire area to industrial activities.

For example, Old Fairfield contains many vacant lots, deteriorated and empty buildings, unpaved streets, and homes that are still not connected to the public sewer line. Furthermore, residents have had to witness the unsightly, hazardous, and steady spread of Brooklyn Salvage, an automotive junkyard which has illegally extended its operations onto vacant lots and public streets.

The City faces a dilemma. On the one hand, it could provide new streets and street lighting, require residents to hook up to the new sewer line at substantial private costs, and turn back Brooklyn Salvage's expansion by strictly enforcing the zoning code. On the other hand, the City could encourage the conversion of the area to the currently zoned industrial activity by helping residents relocate. The difficulty is that some residents would be happy to move to newer housing outside Fairfield while others would like to remain in the area and want the City to improve services in the community.

The conflict is one of the outstanding issues in the future of Fairfield.

*Traffic Issues -- Located at the first interchange south of the Harbor Tunnel Thruway toll plaza, Fairfield is linked to the eastern seaboard by the Tunnel Thruway. Besides the Thruway, three major streets (Frankfurst, Patapsco, and Pennington Avenues) connect the Fairfield peninsula to the city and region. All three streets, which are heavily travelled today, will experience increased congestion with the development of the Masonville Marine Terminal. !Island Creek Coal Terminal, and another major coal terminal south of Fairfield in Marley Neck.1 Particular troublespots occur at the junction of the Harbor Tunnel Thruway ramps and Frankfurst Avenue and at the intersection of Birch Street and Pennington Avenue where northbound traffic routed off Pennington Avenue onto Curtis Avenue is forced to make two sharp 90¼ turns. These two turns are particuarly difficult for trucks to negotiate.

The construction of new or improved ramps from the Harbor Tunnel Thruway directly into Masonville Terminal should help relieve the first of these problems. Resolving the second problem may require

redesigning Birch Street and acquiring several properties so that the connection between Pennington and Curtis Avenues can be realigned.

*Rail Issues -- Three branches of the CSX Railroad serve the Fairfield peninsula. While this provides good rail access for the area's industries and port facilities, the train tracks often cross heavily travelled streets causing traffic tie-ups. This represents a particular problem where tracks cross the only route into an area such as on Pennington Avenue, the only road into Hawkins Point from the north, and on Benhill Avenue the only street serving twelve firms and their 600 employees east of Curtis Avenue. The frequency of traffic tie-ups at grade-level railroad crossings will increase with the development of coal export facilities at Curtis Bay and Marley Neck which will bring 130-car unit trains through Fairfield several times a day in the near future. Resolving this problem will require the attention of the City as well as the CSX Railroad.

*Environmental issues -- The increase in rail activity due to the growth of coal exports will also contribute to noise and air pollution and safety issues. The City has already begun to address the latter problem near Fairfield Homes by constructing improved recreational facilities to meet the needs of that community. Significantly, this project is being funded under the Coastal Energy Impact Program, a federal program designed to reduce the impacts of energy resources on recreational facilities and residential communities. The air pollution problem caused by particles released when coal is transported, loaded,and unloaded will require the

railroads and the exporters to rigorously put into practice techniques designed to control fugitive dust emissions. Methods such as covering or soaking piles have proven effective and economical. Other sources of particulate pollution, open storage piles, unkept vacant land and unpaved roads can be controlled through relatively inexpensive methods. This can significantly improve air quality and the development desirability of an industrial area.

Middle Branch

Middle Branch

The Middle Branch of the Patapsco river is a natural resource of significant potential. Although industrial and commercial uses are currently dominant, the Middle Branch has 416 acres of water area with little commercial shipping activity, over 150 acres of underutilized open space, and the largest wetland areas in Baltimore Harbor. With six miles of shoreline this area is 20 times the size of the City's Inner Harbor. Through careful planning and development, this area will be transformed into the City's most extensive shoreline recreation facility.

Development History

Settlers in the middle of the 18th century found iron ore in the areas adjacent to the Middle Branch and erected an iron furnace at the mouth of what is now the Gwynns Falls. This area, adjacent to the Gwynns Falls, was also the site of the City's first brickyards producing materials for many of Baltimore's early structures.

The rich marshes, an abundance of shad, herring, perch, and rockfish inhabiting the waters and a wooded shoreline attracted visitors from all over the City. By the early 1800's the Middle Branch became an important recreation area for the growing City of Baltimore. Fletcher's Fish House and a public beer garden at the foot of Howard Street established in the early 1800's were the first of numerous commercial, recreational uses.

By the mid-1800's the area began to attract industrial uses. Baltimore's Gas Light Company and Western Maryland Railroad's Port Covington Yard were established in the 1850's. Other development along the north and northwest shores during the mid-19th century included a few breweries, coal yards, and a glass factory.

In 1916 the Hanover Street Bridge opened and spurred residential and industrial development of Brooklyn, Fairfield, and Hawkins Point. Three years later these areas were annexed to the city. During the 1920's, portions of the shoreline changed as industries built new facilities or re-occupied older structures. In 1924, the Western Maryland Railroad completed the existing bridge across the Middle Branch. Cherry Hill was developed by the City as a residential community in the 1930's and 40's.

Most recently, there have been three major changes in the Middle Branch area. The Baltimore Gas and Electric Company was granted a permit in 1976 to fill in seven acres of shoreline at the Spring Garden facility. A similar permit was granted in the same year for the filling of ten acres at the City's Central Garage on Dickman Street. Construction of segments of Interstate 95 and Interstate 395, which intersect in the Middle Branch area, began in 1976. I-395 will provide a link between I-95 and the downtown, via the proposed City Boulevard.

In 1977 the City Department of Planning issued the Middle Branch Park Plan which called for the creation of Baltimore's largest shoreline park along portions of the perimeter of the Middle Branch. The plan included proposals for the creation of boat launches, marinas, playfields, fishing piers, open green spaces, picnic areas, and wetlands -- all

linked together by a pedestrian/bikeway trail. Since the plan was issued a number of its proposals have been carried out including the completion of Ferry Bar Marine Park, Broening Park boat launch, the 115 acre first phase of Reedbird Park, removal of sunken boats and barges, and improvements to the sewer system in areas near the park.

Existing Conditions

The Middle Branch is surrounded by a diversity of industrial and commercial concerns, isolated residential communities, and parkland. Although water-related trade once played a role in the movement of goods, today only one industry still uses barges.

Industrial Activity: Several industries dominate the Middle Branch. Moving westward around the shoreline from the north side of the Hanover Street Bridge, the major industries include:

*City of Baltimore Central Garage: Used for the repair and storage of City vehicles, a portion of the property once served as a landfill for demolition debris.

*Western Maryland Railroad: This large storage area is a staging station for goods to be shipped out of Port Covington.

*Baltimore Gas & Electric Company's Spring Garden Plant: B.G. & E. stores gas at this location and manufactures steam for use in downtown buildings.

*Carroll Industrial Park: This area consists of parcels of

vacant land and many smaller industries. Using Federal funds and the City's Industrial Loan Program, improvements have been made to streets, parking, and lighting to interest industries in locating here.

*Northeast Municipal Waste Disposal Authority: The NEMWDA plans to construct a conventional incinerator on the peninsula east of Russell Street, near the mouth of the Gwynns Falls. This facility is planned to handle a major portion of the areas solid waste.

*Baltimore Gas & Electric Westport Generating Station: This plant generates electricity on an intermittant basis for the downtown area.

*Carr-Lowery Glass Manufacturing Company: The company employs 1,200 persons in the production of glass bottles and jars.

Employment at Middle Branch industries has been stable in the past and is expected to remain stable in the future.

Port Activity: Except for a few barges to the Baltimore Gas and Electric Company's Westport Station, water-borne commerce is non-existent along the Middle Branch. Although the Spring Garden Channel, which extends from the Hanover Street Bridge north to the Western Maryland Railroad bridge, was last dredged by the Corps of Engineers in 1960, it is still deep enough for the barges and for pleasure boats. The responsibility for maintaining the channel belongs to the Corps of Engineers, which has no plans to dredge it.

Residential Areas: Several residential areas are near the Middle Branch: Cherry Hill occupies a large tract of land to the south, Westport is situated between Russell Street and the industry on the western shore; and the South Baltimore community is clustered along Hanover Street and to the east.

Planned Development

The Middle Branch Park Plan has been a great impetus to development in this area. Besides spurring a wide range of recreation-related improvements, it has provided an incentive for local businesses to upgrade the appearance of their properties.

Private/Public: Most of the planned development on the Middle Branch will be publicly sponsored. However, there are also several joint public/private endeavors.

*Waterview Avenue Industrial Park -- The City will designate approximately 40 acres of land north of Cherry Hill and south of Waterview Avenue as an industrial urban renewal area. The area includes 22 manufacturing, warehousing, and retail firms employing over 400 persons. Under the renewal plans businesses are expected to improve their properties to meet certain design standards. For its part the City will reconstruct the portion of Waterview Avenue north of the industrial park widening the median and providing turn lanes into the businesses. The new

boulevard - style roadway will be more in keeping with the improved industrial area to the south and the new park which will replace the junkyards to the north.

*Baltimore Rowing Club -- The City will match private funds raised by the Baltimore Rowing Club to build a storage shed for their rowing shells and other equipment on the north shore of the Middle Branch just west of the Hanover Street Bridge.

Public: Much of the public effort centers on continuing to implement the Middle Branch Park Plan. Projects that have been programmed include:

*Reedbird Park, Phase II -- Sixty-eight acres will be added to the park's current 115 acres as the southern portion of this former landfill is graded and seeded.

*New Waterview Avenue Interchange -- By eliminating the section of Waterview Avenue that forks off from Potee Street and constructing a northbound connection onto Hanover Street, traffic safety will be improved and parkland, formerly cut off from the shoreline, will be tied directly to the waterfront.

*Southshore Open Space -- Land formerly occupied by several junk yards has been acquired by the City and will be converted to public open space.

*Relocation Animal Shelter -- The City's old animal shelter, which was taken for the construction of the expressway, will

be rebuilt on the northernmost shoreline of the Middle Branch.

*Central Garage Landfill Park -- The 8 acre demolition debris landfill south of the City's Central Garage will be converted to a shoreline park in 1982.

*Hanover Bridge Marina -- Improvements to the City-owned marina just east of the north end of the Hanover Street Bridge are nearing completion. The marina's pier has been extended, its repair facilities upgraded, and a picnic area and lookout point developed.

In addition to these improvements which are part of the Middle Branch Park Plan, the City is also planning to construct a sewage pumping station which will complete the hook-up of lines in the previously unsewered Waterview Avenue Industrial Park. The sewer service will not only benefit businesses in the area, but it should also help reduce pollution of the harbor.

Issues and Problems

The problems of the Middle Branch area fall into three major categories:

Conflicting Land Use: First, there is a conflict between adjacent neighborhoods and the various junk yards, scrap metal operations, and storage yards, which often do not maintain a high standard of operation. While some of these problems have been addressed in the improvement program for Carroll Industrial Park in the northern portion of the Middle Branch, considerable attention is still required along Waterview

A second land use problem is the fragmentation and isolation of recreation space. Interspersed between industries and with almost no direct connections to residential areas or other recreation facilities, the open space along the Middle Branch is severely underutilized.

Access: Traffic to most Middle Branch industries uses neighborhood streets in the Westport, Cherry Hill, and South Baltimore communities. The heavy truck traffic in these areas has created safety problems, divided parts of neighborhoods from one another, and generally lowered the liveability of these areas through noise and exhaust pollution. The completion of I-95 and I-395 is expected to relieve these problems somewhat. However, many areas will still be burdened with undesirable levels of truck traffic.

Another access problem is the difficulty of reaching the open space along the shoreline, particularly the south shoreline in the vicinity of South Baltimore General Hospital. Heavily travelled Hanover Street, Potee Street, and Waterview Avenue set up barriers between the Cherry Hill community and the waterfront. Even motorists find it difficult to reach the shoreline under the present street configuration. Better coordination of traffic signals for pedestrians and the pathway under Hanover and Potee Streets should help reduce this problem.

Water Quality: For many years overflow from inadequate sanitary sewers, discharges from industrial concerns, debris, and storm runoff, carrying dirt, oil, and asphalt from city streets, turned the Middle Branch into an unpleasant, polluted water body which supports only the most minimal

forms of aquatic life. Deposits of silt, in several areas reaching a depth of 60 feet, fused with heavy metals and other toxic substances presents limitations to development in certain areas and the possibility that sediments can be stirred up by activity in the water.

Aggravating these already serious problems, traces of the carcinogen Kepone from the former Allied Chemical Plant were found both in the water and the soil around the plant.

Recently, steps have been taken to remedy the most severe aspects of the pollution problems. Completion of the Southwest Diversion Main helped to curtail sewage overflows and enabled many faulty septic tanks to be eliminated. Proposals to clean up the shoreline were included in the Carroll Industrial Park plan. The fill permits issued to the Baltimore Gas and Electric Company, Carr-Lowery, and the City's Central Garage promoted a cleaner and more stable shoreline by insuring that the type and amount of fill were monitored.

To protect the public from possible exposure to Kepone, soil in the area of Swann Park adjacent to the former Allied Chemical Plant were covered with clay. A special committee of State and local health officials continues to monitor the site and deals with problems that arise.

The combination of improved water quality, a stabilized shoreline free from debris, and adequate sanitary facilities provides the basis for water-oriented recreational activities on the Middle Branch.

Future Opportunities

The Middle Branch Park Plan and the Waterview Avenue Industrial Park Plan have laid the basis for a number of significant future public and private development opportunities. These include:

*Reedbird Park Improvements -- When funds become available, ballfields, other recreation facilities, and landscaping could be added to the 68-acre southern portion of Reedbird Park.

2737

*Fishing Pier and Scenic Overlook -- Once the new Waterview Avenue interchange with Hanover and Potee Streets is complete, the old shoreline segment of Waterview Avenue could be removed and replaced with parking for a scenic overlook and fishing pier that could be developed at the site.

*Southshore Marina -- As the demand for boat docking space grows beyond the capacity of existing marina, the open space that had been created by the City on the site of former junkyards will become a prime location for a marina and related commercial development.

*Waterview Avenue Industrial Park -- Nearly 40 acres of vacant land will become available in this industrial park. Improvement in the park itself and to Waterview Avenue should make this an attractive site for new-industrial development.

*Carr Lowery -- There will be an opportunity for the Carr Lowery glass manufacturing plant to build an additional furnace adjacent to their current site.

*Baltimore Rowing Club Expansion -- If, as expected by the Baltimore Rowing Club, the sport of rowing catches on, there is the possibility of the club expanding at the site of its storage shed or at another location on the Middle Branch.

*Trail System -- The Middle Branch Park Plan called for the creation of a continuous pedestrian/bike trail that would link the various segments of the park together and connect the park itself to the Inner Harbor, Gwynn Falls Park, and Patapsco State Park.

3020

*Private Marina Expansions and Improvement -- Three private marinas are currently located on the Middle Branch. With the development of this water body as a major recreation area, these marinas are expected to experience a significant increase in business which is likely to spur them to expand and improve their facilities.

LOCUST POINT
AREA STUDY
COASTAL ENERGY IMPACT PROGRAM
BALTIMORE HARBOR STUDY

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I. Introduction

Locust Point is an area of industrial and port activities situated southeast of the Inner Harbor. The boundary of the area extends to Federal Hill and the Northwest Harbor on the north, Hanover Street on the west and the Middle Branch on the south and east. Locust Point is easily accessible to downtown Baltimore and the Interstate 95/Fort McHenry Tunnel under construction. It's strategic location coupled with the dominance of manufacturing, port and rail activity in the peninsula make Locust Point an important industrial district in Baltimore City.

Manufacturing activity in Locust Point is dominated by Proctor and Gamble, Amstar (Domino Sugar) and Locke Insulator. Numerous smaller manufacturing, warehousing, wholesaling and trucking operations are also located in the area.

The Locust Point peninsula contains two deep water port facilities owned by the Maryland Port Administration: the North and South Locust Point Marine Terminals. Both container and general cargo operations occur at these facilities. In addition, the Western Maryland Railway Company owns the Port Covington Terminal, a general cargo facility.

Locust Point contains a rather extensive network of rail lines and storage areas. The Baltimore and Ohio Railroad and the Western Maryland Railway, both divisions of the CSX, operate in Locust Point.

There are approximately seventy firms located in Locust Point in addition to establishments that operate on MPA and Railroad land. Total employment in Locust Point is estimated at 5,500.

III. Land Use

A. Industrial Activities

1. Major Industries

There are three major industries in Locust Point with employment over 500. These are Proctor and Gamble, Amstar, and Lock Insulator.

Proctor and Gamble employs 500 people. They manufacture soap bars, powder washing detergents, liquid and powder dishwashing detergents and fabric softener at their north Locust Point facility. Brand names include Ivory, Tide and Downey. Raw materials for processing are delivered approximately equally by rail and truck. They receive a minimal amount of raw materials via the water. These are primarily specialty goods used in process such as coconut oil. Almost 100% of their distribution occurs by truck. Proctor and Gamble has recently invested in a new process line. They have also invested in new air control equipment.

Amstar, with employment at about 700, is a sugar refinery located on Key Highway East. Raw sugar is brought in by ship and is processed to remove the color and impurities. Distribution is by both truck and ship.

Locke Insulator employes approximately 500 at its facility off Hanover Street in south Locust Point. Locke is a manufacturer of insulators used in various applications ranging from insulators on

telephone poles to those on high tension transmission lines. The company is one of a few insulator manufacturers in the United States.

2. Key Highway Industries

There are a variety of small manufacturing operations located along Key Highway to the west and south of Bethlehem Steel. These include: paper manufacturing, paint manufacturing, manufacturing of electrical enclosures and industrial fasteners, syrup production, oil reprocessing and several trucking firms. None of the businesses located on the harbor apparently utilize that access.

The concentration of businesses in this area on relatively small sites has created parking problems for several firms and adjacent residences.

3. Peninsula Industries

Several medium sized manufacturing and distribution facilities are located centrally on the Locust Point peninsula. PQ Incorporated employs 18 people and manufactures a glass compound which is cracked with water to form a liquid used in the manufacture of glue and other reisin products. Chesapeake Paperboard which employees 192 people manufactures cardboard shipping containers. National Molasses employes 16 people and warehouses and distributes pure molasses. Coca - Cola owns a syrup manufacturing plant which employs 100 people. Southern States employes 125 people. They operate a feed mill which manufactures and mixes various grain pellets, packages them and distributes them by truck. They also operate an agricultural warehouse which warehouses and distributes seed and farm supplies. They have recently invested

in more mechanized process equipment which will result in declining employment. Their property is leased from the B&O. Several trucking firms are also located within Locust Point. Kane Trucking is the largest; its clients include Proctor and Gamble and other Locust Point firms.

4. Wells Street Industries

The Wells Street area is located just east of Hanover Street with excellent access to I-95. Approximately 200 people are employed in the area. Pratt Thompson, a pipe and valve fitting distributing operation, has recently built a new building adjacent to the Interstate access loop south of Wells Street. Maryland Glass and Mirror operates across the street. The Johnson Building, an old four-story loft industrial structure, has recently been renovated. It is located at the eastern end of the Wells Street area. A variety of small warehousing and manufacturing firms are located in this building. Across the street from the Johnson Building is a larger partially occupied building of the same architectural style. Guardian Moving and Storage and the Seaboard Public Warehouse are presently located in this structure. An additional 133,000 sq. ft. is advertised for lease. To the west of this structure is a dilapidated vacant building which should be considered for demolition, opening a site for new development.

2. Locust Point Marine Terminal North and South

Before describing the operations at each terminal, brief mention of the physical and functional differences between them is warranted. Locust Point North is primarily a general cargo facility. Southside is primarily a container facility although general cargo is handled there as well. Locust Point North has a variety of terminal operators; in fact a different operator for each pier. There is only one operator of the entire Southside terminal: Atlantic and Golf Stevedores(A&G). Physically, the configuration of piers at the two terminals is very different. The berthing structures at Locust Point North are finger piers. This is the old design where ships berth perpendicular to the mainland. Locust Point South is structured in the marginal pier configuration. In this case, ships berth parallel to the mainland. Finger piers are considered less efficient in today's maritime transport industry since their position with respect to cranes and storage areas does not accommodate modern loading patterns.

Locust Point North contains seven pier structures containing seven general cargo and four bulk cargo berths. Operators of the piers are as follows:

Pier 3: Chesapeake Operating Company (Levino Shipping)

Pier 4/5: Ramsey-Scarlet and Company

Pier 6: General Latex Company

Pier 7: Indiana Grain Cooperative

Pier 8: Goodyear Tire and Rubber Company

Pier 9: Unused

Pier 10: Uniroyal Tire/National Molasses Company

There are two seventy-five ton gantry cranes serving Pier 4 at Northside. These are both electric. Locust Point North has approximately 400,000 sq. ft. of covered storage and 30 acres of open storage. There are also rail holding yards for 2,700 cars. The draft at the Northside terminal is 30 to 34 feet.

Locust Point North is served by the B&O Rail with connections to Conrail. MPA has recently constructed a road which links the Locust Point North and South terminals west of the Southern State property. This allows all port bound trucks to enter both MPA facilities via McComas Street. North Locust Point road access was previously via Fort Avenue. Officials with MPA have indicated that they are not interested in a western access point if the proposed Loop Road were to be built. They stress that a single access point is required for security purposes.

The most serious problem cited at the Locust Point North facility is a lack of storage space for both import and export of goods. This requires a special handling of shipments. In the case of exports, cargo is held in other parts of the city and then hauled to Locust Point North when the ship is in berth. For imported cargo, coordination of trucks and rail cars to match incoming shipments is also made more complicated by the scarcity of adjacent storage space.

The Locust Point South Terminal, as mentioned, is operated by Atlantic and Gulf Stevedores Inc. They operate three berths in the marginal pier configuration. These piers structures lend themselves best to container traffic. The terminal has two forty-ton container cranes, one 100-ton revolving crane and the only heavy lift 350-

B. Port Activities

1. Ship Repair Facilities

The largest ship repair operation in Locust Point is the Bethlehem Steel Key Highway Shipyards. This facility has 11 berths and 4 dry docks. It is equipped to service any type of ship (tankers, bulk carriers, barges, refrigeration ships, etc.) with up to 28' drafts. The facility can provide a full range of services from sandblasting and painting to complete overhaul or rebuilding. In discussions with a Bethlehem Steel representative, we were told that business has been bad over the past 6 to 10 years. Employment, historically at 1600-2000, is now only 400. The company is continuing operations at the facility but is concerned over the future of the ship repair industry. New naval contracts as a result of increased Federal defense spending, may improve business, but such contracts would not affect the shipyards until 1983 or 1984. Deepening the ship channel to 50 feet, along with dredging the Key Highway Yard approaches, would also expand the shipyard's potential for work.

Several small ship repair operations are clustered south of Bethlehem Steel's facility along Key Highway. These firms service small ships, barges, and ship parts. Apparently, none of these operators' act as sub-contractors to the Bethlehem Shipyard.

ton crane in the Port of Baltimore. Southside has 120,000 sq. ft. of covered storage space, and 23 acres of open storage space.

Rail access is offered by Western Maryland Railway with connections to Conrail. Road access is via McComas Street. The Southside draft is 36 feet.

Lack of adequate storage space is also viewed as a problem at the South terminal. Of larger consequence however, is concern about adequate truck stacking space. The problem MPA foresees is one of congestion: too much is expected to occur in too little space. The location of ramps and access lanes to the interstate and the location of McComas Street in terms of intersections with these lanes may interfere with the ability of trucks to stack before entering and upon leaving the MPA facility. Also during construction of the Fort McHenry tunnel, MPA will loose parking and storage space on its far eastern pier (not used as a berth).

In 1979, approximately 2,300 railroad cars and 49,000 trucks entered and left Locust Point Marine Terminals (North and South). This compares with 2,800 railroad cars and 63,000 trucks in 1980. A representative of the MPA has indicated that the North terminal is presently operating at capacity. Limited storage space is cited as the reason. The capacity of traffic handled at Southside is also stymied by the inability to expand existing storage space. If additional space could be found at Southside, the volume of traffic handled there (in terms of berthing capabilities) could be increased. Apparently, channel depths at both the North and South side facilities are adequate given the present design and draft of container and

general cargo carriers. The one exception is the grain operation at Pier 7 North Locust Point. Deeper drafts would allow the grain ships to be filled to capacity.

3. Port Covington Port Areas

Port Covington is located in the southwestern section of Locust Point east of Hanover Street. It is approximately 190 acres and is divided into an eastern section of about 60 acres and a western section of approximately 130 acres. Located between these sections is the BG&E Gould Street Station. Port Covington is presently owned by Western Maryland Railway. A contract, however, exists by which the Maryland Port Administration can exercise an option to purchase the eastern section around the turn of the century. The eastern section is presently operated by A&G Stevedores. Most of the port activity occuring in Port Covington is located there.

A&G operates three piers, 7, 8, and 9, which are general cargo piers. They have two 10 ton gantry cranes serving piers 7 and 8 and two-10 ton gantry cranes serving pier 9. Use of the piers and backup land is not intense.

In the western section of Port Covington the Western Maryland Railroad operates an ore pier (Pier 6). The largest import at this pier is bauxite which is used in the manufacture of aluminum. The bauxite is loaded directly from ship to rail cars. Pier 5 to the south of this is a vacant covered pier. Pier 4 south of Pier 5 is the old coal export pier. It also is not in operation. Between Pier 5 and Pier 6 a coal transfer operation takes place. Coal is stockpiled in

barges and is loaded via a floating crane to ships docked at pier 6. This operation is a spill over from the Curtis Bay Coal facility. South of the old coal pier, Louis Dreyfus operates a grain export facility similar to Indiana Grain in North Locust Point.

4. Grain Export Facilities

There are three major grain export facilities located in the Port of Baltimore, two of which are in Locust Point. Indiana Grain operates at North Locust Point and Louis Dreyfus at Port Covington. The B&O Railroad serves Indiana Grain and the Western Maryland Railway serves Dreyfus. Indiana Grain operates Pier 7 and has recently modernzied its entire handling system to increase through put. Dreyfus operates the berth on the east side of its facility. Indiana and Dreyfus are the largest customers in Locust Point for the B&O and Western Maryland Railway, respectively.

5. Latex Import

Three latex import operations are located at the Locust Point North Terminal: Uniroyal, Firestone and Goodyear. The Goodyear operation is soon to be relocated to Port Covington East. These facilities give the Port of Baltimore the distinction of being the largest latex import center in the United States. The liquid latex is used in the manufacture of carpeting. The Baltimore center serves the broad Mid-Atlantic region although distribution is skewed to the south.

C. Rail Activities

As mentioned, both the Baltimore and Ohio Railroad and Western Maryland Railway operate storage and switching yards and serve industries located in Locust Point. The basic operations there today are the same as for the last 150 years.

1. Baltimore & Ohio

The B&O serves clients located along Key Highway and those at the North Locust Point Marine Terminal. B&O tracks parallel McComas Street and terminate at a switching yard in the eastern section of the peninsula. A rail loop traverses south of the piers at Locust Point North and continues southward just west of Protor and Gamble. The railroad loop however, is not used for most Locust Point traffic; cars primarily go in and out on the southern section. The amount of cargo traveling on the B&O lines has declined in recent years. There has also been a specialization of rail cars to handle very specific types of cargo which is hauled. This means that there tends to be more one-way loaded trips. In-bound business on B&O lines at Locust Point is greater that out-bound.

The other major activity on B&O land in Locust Point is the Riverside yards operation located midway along the tracks between Hanover Street and Fort McHenry. This is the locomotive service and maintenance facility for all B&O operations in the entire Baltimore Terminal. All crews from Baltimore report to and leave from Riverside. The yard is presently being rebuilt as a result of Interstate relocation.

2. Western Maryland Railway

Western Maryland Railway owns and serves Port Covington. This location is their primary container piggy-back facility for the entire Port. Both TOFC (trailer on flat car) and COFC (container on flat car) operations occur here. Western Maryland's other container facility is on Wicomoco Street. A storage facility is also located south of Swan Park on the Middle Branch. The piggy-back operation requires cranes which load containers and trailers on to rail cars in the central part of Port Covington.

East-bound traffic on the Western Maryland terminates at the switching and storage yards located at Port Covington. Several industries are served directly by this line. Louis Dreyfus Grain is their biggest customer. They also serve Locke Insulators and the Chrysler warehouse located on the Middle Branch (although this has been cut back recently). Rail access to the South Locust Point Marine Terminal is also via Western Maryland lines. In addition, switching cars takes place at Port Covington for lines to Sparrows Point, Owens Mill and Bayview. As mentioned, direct ship to rail transfer occurs at the bauxite pier.

The area southwest of Louis Dreyfus in Port Covington is primarily vacant. The Lehigh Portland Cement Company building and land and a repair shed on the southern tip are both abandoned. Marginal storage of rail cars and trailers is evident on unused track.

D. Utilities

The Baltimore Gas & Electric Company owns and operates a 103 MGW electric generating station on Gould Street south of McCommas Street. The Gould Street station was commissioned on December 15, 1952. The original boilers were coal fired, however, in 1971 the boilers were modified to burn natural gas or oil. The station is presently operated as an intermediate electric generating facility to augment BG&E's larger primary generating station. Future operation of the Gould Street station will be limited to summer periods of peak electricity demand.

E. Residential Areas

Total 1980 residential population in the study area (Locust Point and South Baltimore east of Hanover Street) approaches 12,000 a majority of which is of working age and 95% of which is white. In 1970, the median family income was $6,000, almost $3,000 below the city's average. Educationally, 95% of those over 25 years of age have completed up to the 12th grade, compared with 85% for the city as a whole.

In terms of employment, those employed in manufacturing and transportation alone account for 49% of the resident labor force, compared with 30% for the entire city. About 55% of the resident work force is in the blue collar, industrial occupational categories of craftsman, foreman, skilled laborer, operative, or unskilled laborer.

The Locust Point Community is served by a small commercial strip along Fort Avenue. A major commercial area around Cross Street in South Baltimore is also accessible to residents of the study area.

The community of Locust Point and residents of the eastern sections of south Baltimore live adjacent to the industrial and port uses described in this paper and must cope with the associated odors, pollution, and traffic. Although employment by residents in nearby industry seems to be significant, we have not determined the proportion of residents of South Baltimore/Locust Point who actually hold jobs there.

F. Fort McHenry

Fort McHenry, at the easternmost tip of Locust Point, is a National Historic Park which attracts over 700,000 visitors a year, 90% arriving by automobile. There is a potential for many of these visitors to spend money within the study area on such services as food and souveniers.

IV. Infrastructure

A. Streets and Highways

Locust Point industries will have direct access to the region's Interstate Highway System via I-95 and the Fort McHenry Tunnel. This is expected to be completely operational by 1985. Currently, Interstate access to the Beltway is via I-95 west at Hanover Street.

This provides Interstate travel in all directions. When I-95 through Locust Point is complete, access will be via McComas Street.

Major arterials in Locust Point include Key Highway, Fort Avenue and McComas Street. Several problems exist with particular streets; most of these however, have been mentioned. We perceive no problems presently with respect to Key Highway. Problems with Fort Avenue stem from the fact that it is the major truck throughfare to eastern and northern Locust Point. Fort Avenue passes directly south of the Locust Point community and separates the community from Latrobe Park and the commercial district across Fort Avenue. Access to Proctor and Gamble and National Molasses is directly on residential streets off Fort Avenue. Truck traffic volumes on Fort Avenue should decrease now that an internal road linking the North and South Marine Terminals has been constructed. Truck traffic to Locust Point North previously traversed Fort Avenue to a gate just west of Fort McHenry. All truck traffic to Northside must now enter via McComas Street. Perceived problems with McCommas Street have been discussed in conjunction with the Southside terminal. Generally, the design of McComas Street in terms of Interstate ramp alignment and capacity may result in congestion and traffic back-ups.

B. Sewer and Water

All residential and industrial areas are serviced by municipal water mains. In addition, some industries use on site wells to provide their own process and cooling water. The Locust Point - Fort McHenry sanitary sewer system and pumping station services North Locust Point residential and industrial areas. Construction is near completion

on the McComas Street - Port Covington Sewer System and Pumping station to service South Locust Point industrial areas. Industries that discharge into the sanitary sewers pay a service surcharge based on the BOD and suspended solids concentration of their waste. Several industries also have MPDES permits to discharge cooling water directly into the harbor.

V. Environmental Quality

The mixing of residential and industrial activities in Locust Point and the close proximity of the area to downtown Baltimore greatly increases public awareness and sensitivity to environmental quality issues. These issues include noise, air pollution, and water pollution. The most significant environmental issue in Locust Point is air pollution. The area has been classified by the US Environmental Protection Agency as a non-attainment area for total suspended particulate (TSP Pollution). Most industrial processes have control equipment to eliminate TSP emissions. However, fugitive dust and other suspended particles from the unpaved surfaces, construction activities and grain loading remains largely uncontrolled. The most significant identifiable sources of particulate pollution are 1) I-95 construction; 2) the Railroad yards; 3) Indiana Grain Elevator; 4) Louis Dreyfus Grain Elevator.

Particulate pollution in the area will be greatly reduced as construction of I-95 is completed. However, until this area is in compliance with Federal Air Pollution standards, no new development activity which generates over 100 tons per year of particulate pollution will be able to locate here without obtaining pollution offsets from existing

facilities. The technical alternatives and expense associated with controlling particulate pollution from grain and other bulk material tranferring operations have been especially difficult to rectify. Effective control solutions will take time and require technological innovations.

Other environmental issues of concern to the communities in and around Locust Point include odors, noise and water quality. Industrial process odors are a nuisance in adjacent residential and retail areas. Neighborhoods as subjected to the noise of truck and rail movements in and out of nearby industries. Recreational users of the harbor and waterfront areas must share these resources with industries of port facilities.

VI. Planned Improvements and Developments

Both public and private investment is occuring in Locust Point in moderate amounts. Several public works projects and one significant private project are presently planned or underway:

A. I-95

Work on the first phase of I-95 in Locust Point is nearing completion and is expected to open December 1981. This will extend the interstate from Hanover Street to Key Highway. The second phase, extending the expressway further east to Andre Street, is expected open at the end of 1983. The remaining portion in Locust Point and the Fort McHenry Tunnel is expected to be operational by early 1985. This will provide a direct link between Locust Point and Canton and completion of the I-95 system in the region.

B. MPA Improvements

Several pier improvements at North Locust Point are underway or scheduled in the near future by the MPA. Contracts have been executed to rehabilitate Pier 10 and demolish the shed and rehabilitate the deck of Pier 6. Work at pier 10 involves the construction of a 380' x 20' structural steel and concrete platform over the existing timber pier. Demolition of a 140' by 940' two story frame building, paving of the pier surface and installation of a lighting system is scheduled for Pier 6.

Plans call for the eventual demolition and rehabilitation of Piers 8 and 9 at Northside similar to the work at Pier 6. This will probably take place in the next 2 to 3 years.

C. Industrial Service Road

For a number of years an industrial service road has been proposed along the B&O rail lines from the eastern terminus of Key Highway to the existing intersection of Hull and Nickolson Streets. The proposed road would serve several industries east of the B&O tracts including Proctor and Gamble, National Molasses, and various trucking and stevedore firms. The service Road would provide access directly to Key Highway rather than have industrial traffic use Locust Point residential streets and Fort Avenue as is the case today. Design of the road will be undertaken this fiscal year, and construction is programmed for fiscal year 1984.

D. Latrobe Park Noise Barrier

The alignment of I-95 through Locust Point has necessitated the construction of a noise barrier system along adjacent residential areas. From Hanover Street to Key Highway the barrier is planned as a solid wall attached to the northside of the elevated highway structure. South of Public School #76 and Latrobe Park, the barrier consists of a planted earth berm approximately 12 feet wide and 10 feet high. Construction of the berm required the acquisition of approximately 7.5 acres of B&O Railroad porperty. The property extends from the school and park south to the berm which is situated just north of the highway. The land acquired will expand the park and quarantee the continued existance of ball fields now located on the site.

E. Hull Street Park

The community of Locust Point, though close to water, does not have direct water access because most of the shoreline is devoted to industrial, port, and rail uses. Locust Point has therefore been targeted for construction of a street-end park and boating pier at the northern terminus of Hull Street. The site is directly east of Proctor and Gamble. General clean-up, landscaping and construction of a fishing and docking area are scheduled. It is projected that the project will cost $80,000 and be completed in mid 1982.

F. Riverside Yard

The B&O Riverside Yard, as described earlier in this report, is undergoing extensive renovation as a result of highway (I-95) relocation. Rail tracks will be relocated, a new maintenance shop is being built, an oil storage tank is to be installed, and internal circulation is being modified.

G. Wetlands Creation

In compensation for the Fort McHenry Tunnel dredging and dredge spoil filling at Caton-Seagirt, the Interstate Division for Baltimore City is constructing a landscaped wetland area of approximately 5.3 acres. The marsh will be located adjacent to Fort McHenry and the Southern States site and will be enclosed by a rip-rap dike.

H. Locke Insulator Fill

The Locke Insulator Company has recently received approval of a fill permit to accommodate an expansion of their plant. The expansion will allow the installation of a new production line. The total area to be filled is 1.5 acres. The expansion will create approximately 100 jobs and retain an additional 100 that would have been relocated.

VII Development Opportunities

Several development opportunities are evident in various of areas in Locust Point:

A. Interstate Land Under I-95 - Six oblong sites ranging in size from .5 to 1.8 acres located under the elevated Interstate between Hanover Street and Key Highway have been identified as available. Physical constraints of the Highway structure and the size of the parcels limits their development potential; parking or open storage for adjacent industries is probably most appropriate.

B. Bethlehem Steel Property - A 16 acre parcel owned by Bethlehem Steel located north of Fort McHenry adjacent to the water is currently leased to the City's Interstate contractor for use in conjunction with construction of I-95 for 3 years. The site contains 4 wet berths and/drydock was previously used by Bethlehem as part of their ship repair operation. Future use of the land is uncertain.

C. Key Highway Parking Expansion - A .3 acre site located between Key Highway and Covington Street opposite the new Southern High School is partially vacant and/or marginally utilized. Two service station structures now occupy the parcel. The site is directly south of a new parking facility recently developed by Bethlehem Steel in response to their parking problems. If further parking space is required by Bethlehem or other Key Highway industries, this site should be considered.

D. Wells Street Area - As described earlier in this report, the Wells Street area offers two significant opportunities for major development. First, a 2.59 acre site containing a vacant building in dilapidated condition. The site would best be cleared and offered for redevelopment. It is located at the southeast corner of Wells and South Charles Streets. Second, two large loft structures located between Light

and Johnson Streets along Well Streets which are marginally used. Construction is wood frame. Present tenants are Guardian Moving and Storage and Seaboard Warehouse; 133,000 square feet is presently available for lease. The complex could be renovated or marketed as is. The owner would like to market the building for maritime related uses. He would like to seek a foreign trade zone designation.

The Wells Street area might profitably be treated along the lines of a minor Carroll Industrial Park. There are existing viable uses that could be strengthened by public improvements new opportunities are provided for in terms of available sites and access to I-95.

E. Port Covington - Possibilities for the future of Port Covington are diverse. The entire complex is 190 acres - 30 acres to the east of BG&E's Gould Street station, 160 acres to the west. Much of the property is either vacant or underutilized. An official of the Chessie Railroad has indicated that many of the uses presently at Port Covington could be relocated. Exceptions to this are the Dreyfus grain operation, located centrally in western Port Covington, and the BG&E plant, not located on Western Maryland Railway land. Chessie is looking now at the possibility of relocating the entire piggy-back container operation, primarily because it would operate more efficiently if consolidated and if additional storage space could be obtained. They are considering a location in Marley Neck. Chessie also has noted that the ore pier operation could be relocated to Curtis Bay. They also have indicated that the eastern portion of the property, now operated by A&G Stevedores is underutilized. As mentioned, the entire western section is currently vacant.

Many possibilities exist for the future development of the area. Chessie has indicated that Port Covington is not suitable for a coal export operation. If Dreyfus and BG&E remain, the eastern section could be used to expand MPA activity at the Locust Point southside terminal. Western sections could be marketed for such new uses as additional grain export operations, auto import/export facilities or other industrial uses. At the extreme, the entire property oculd be developed jointly, possibly as an industrial park or residential community.

F. District Heating Potential

The close proximity of residential and industrial areas and a large electric generating facility makes Locust Point an ideal area for a district heating system. Such a system could provide an inexpensive source of heat energy both for residential heating and cooling and for industrial heating, cooling and manufacturing processes. The system could link residential and industrial heat users to facilities that procude waste or inexpensive heat energy. The Gould Street electric generating facility is a potential major energy source for a district heating system. In addition waste heat from large industries such as Proctor and Gamble, Locke Insulators, Amstar, PQ Corporation and Chesapeake Paper Board may be available as back-up energy sources for the system. A district heating system might particularly be designed to provide energy for new development at Port Covinton and in the Wells Street area. The City Department of Planning has just undertaken a one year study of the feasibility of district heating in this and other older areas of the city.

LOCUST POINT
MAJOR INDUSTRIAL ESTABLISHMENTS

Name	Primary Product or service	SIC #	Employment	Wall Dependent	Water Related	Non-water Relate	Location
Manufacturing & Services							
General Ship Repair	Ship repair	3731	50				1449 E. Key Highway
Egan Marine Contracting	Ship repair	3731	105				1000 E. Key Highway
Oriole Ship Ceiling	Ship ceiling repair	3731	14				1020 E. Key Highway
Bethlehem Steel Balto., yard	Ship repair	3731	400				1101 Key Highway
Amstar Corporation	Sugar refining	2062	700				1100 E. Key Highway
Proctor & Gamble Co.	Detergents, soaps	2841	500				1422 Nicholson Street
Jotun - Baltimore Copper Paint	Paint manufacturing	2851	60				501 Key Highway
Mangels Herold, Inc.	Molasses Syrup mfg.	2099	105				1414 Key Highway
Southern States Co-op	Feed & farm supply	2875	108				2101 E. Fort Avenue
Chesapeake Paperboard	Paperboard mfg.	2631	192				Fort Ave & Woodall Sts
Locke Insulators	Electrical Insulator mfg.	3264	515				2525 Insulator Drive
Polan Katz & Co.	Umbrellas	3999	45				1800 Johnson Street
Stylecraft	Deck sets & Accessories	2649	76				1800 Johnson Street
Edward Phillips	Electrical Contr.	1731	42				1831 Belt Street
Kuehnle-Wilson	Painters	1721	40				733 E. Fort Avenue
Coca-Cola	Mfg. syrup	2087	100				1215 E. Fort Avenue
General Electric Co.	Industrial Repair Shop	7629	95				920 E. Fort Avenue
Wholesaling & Warehousing							
Indiana Farm Bureau Co-op	Wholesale Grain	5153	140				Andre & Beason Sts.
Industrial Supply Corp.	Wholesale Supply	5085	30				209 Key Highway
Louis Dreyfus Corp.	Wholesale Grain	5153	120				5 Light Street
Leonard Jed	Mfg. bolt, nuts; distribution at this location	3452	45				1301 Covington

LOCUST POINT
MAJOR INDUSTRIAL ESTABLISHMENTS

Name	Primary Product or service	SIC #	Employment	Wall Dependent	Water Related	Non-water Related	Location
National Molasses	Molasses Distribution	5145	16				1055 Hull Street
Seaboard Warehouse	General warehouse	4225	15				1900 Johnson Street
Trucking							
Kane Transfer	Trucking	421	50				
Liberty Transfer	Trucking	421	38				1600 Ludlow Street
Utility							
BG&E Gould Street	Power Plant	4911	60				2105 Gould Street

Source: Dun and Bradstreet, 1981 Ed.

LOCUST POINT
MAJOR INDUSTRIAL ESTABLISHMENTS

Name	Primary Product or service	Employment	Water Related
Amstar Corporation	Sugar refining	700	
Locke Insulators	Electrical Insulator mfg.	515	
Proctor & Gamble Co.	Detergents, soaps	500	
Bethlehem Steel Balto., yard	Ship repair	400	
Chesapeake Paperboard	Paperboard mfg.	192	
Indiana Farm Bureau Co-op	Wholesale Grain	140	
Southern States Co-op	Feed and farm supply	108	
Louis Dreyfus Corp.	Wholesale Grain	120	
Mangels Herold, Inc.	Molasses Syrup mfg.	105	
Egan Marine Contracting	Ship repair	105	
Coca-Cola	Mfg. syrup	100	
General Electric Co.	Industrial Repair Shop	95	
Stylecraft	Deck sets & Accessories	76	
Jotum - Baltimore Copper Paint	Paint manufacturing	60	
BG&E Gould Street	Power Plant	60	
Kane Transfer	Trucking	50	
General Ship Repair	Ship repair	50	

LOCUST POINT
MAJOR INDUSTRIAL ESTABLISHMENTS

Name	Primary Product or service	Employment	Water Related
Amstar Corporation	Sugar refining	700	
Locke Insulators	Electrical Insulator mfg.	515	
Proctor & Gamble Co.	Detergents, soaps	500	
Bethlehem Steel Balto., yard	Ship repair	400	
Chesapeake Paperboard	Paperboard mfg.	192	
Indiana Farm Bureau Co-op	Wholesale Grain	140	
Southern States Co-op	Feed and farm supply	108	
Louis Dreyfus Corp.	Wholesale Grain	120	
Mangels Herold, Inc.	Molasses Syrup mfg.	105	
Egan Marine Contracting	Ship repair	105	
Coca-Cola	Mfg. syrup	100	
General Electric Co.	Industrial Repair Shop	95	
Stylecraft	Deck sets & Accessories	76	
Jotum - Baltimore Copper Paint	Paint manufacturing	60	
BG&E Gould Street	Power Plant	60	
Kane Transfer	Trucking	50	
General Ship Repair	Ship repair	50	

LOCUST POINT
MAJOR INDUSTRIAL ESTABLISHMENTS

Name	Primary Product Or Service	Employment	Water Related	Non-water Related	Location
Manufacturing & Service					
Amstar Corporation	Sugar refining	700			1100 E. Key Highway
Locke Insulators	Electrical Insulator mfg.	515			2525 Insulator Drive
Procter & Gamble Co.	Detergents, soaps	500			1422 Nicholson Street
Bethlehem Steel Baltc., yard	Ship repair	400			1101 Key Highway
Chesapeake Paperboard	Paperboard mfg.	192			Port Ave & Woodall Sts
Indiana Farm Bureau Co-op	Wholesale Grain	140			Andre & Beason Sts.
Southern States Co-op	Feed and farm supply	108			2101 E. Port Avenue
Louis Dreyfus Corp.	Wholesale Grain	120			5 Light Street
Mangels Harold, Inc.	Molasses Syrup mfg.	105			1414 Key Highway
Egan Marine Contracting	Ship repair	105			1000 E. Key Highway
Coca-Cola	Mfg. syrup	100			1215 E. Port Avenue
General Electric Co.	Industrial Repair Shop	95			920 E. Port Avenue
Stylecraft	Dock sets & Accessories	76			1800 Johnson Street
Jotum - Baltimore Copper Paint	Paint, manufacturing	60			501 Key Highway
BG&E Gould Street	Power Plant	60			2105 Gould Street
Kane Transfer	Trucking	50			
General Ship Repair	Ship repair	50			1449 E. Key Highway

V.F. INNER HARBOR/FALLS HARBOR

V.F. INNER HARBOR/FALLS HARBOR

Introduction

Baltimore's Inner Harbor has been transformed over the past 17 years to a hub of commercial, recreational and cultural activities. The 240 acres of land which surround the Inner Basin are south of the City's Central Business District and abut the 33 acre Charles Center area. Both the development of the Inner Harbor and the development of Charles Center, a $100,000,000 complex of office and retail facilities, residential units and hotels, were the primary components of a comprehensive plan and program for the revitalization of downtown Baltimore.

The Inner Harbor project is managed by Charles Center Inner Harbor Management (CC-IH) a private non-profit corporation acting as liaison agency between the City and private business. CC-IH has been a significant factor in successfully attracting sound developers to execute and complete projects in Charles Center and the Inner Harbor.

The Inner Harbor development effort is comprised of Inner Harbor I, Inner Harbor West and Inner Harbor East. The area immediately past of the Jones Falls, known as Falls Harbor is also under the management of Charles Center/Inner Harbor. Development efforts which began in 1964 called for public & private investments to finance residential, commercial and cultural development in the north west and south sides of the harbor basin.

Development History

In the late 1950's the City of Baltimore undertook planning for a major renewal for downtown Baltimore and The Inner Harbor. Charles Center marked the beginning of that effort. By 1967 and with a successful Charles Center nearly completed, 30 million dollars of bond funds were authorized by the City for final design, land assembly and site improvement for the Inner Harbor portion of the program. Implementation of the plans was projected to cost 490 million-dollars-$400 million in new private construction and $90 million in land preparation and public improvements from the City, State and local governments. The project was divided into several smaller project areas for manageability purposes and was phased to be implemented in closely related stages. A basic concept of the plan is the promotion of the shoreline for public access and use. In the development of the Inner Harbor priority has been given to providing land at the water's edge for uses which provide enjoyment to all citizens of the Baltimore region, visitors and tourists to the City.

Existing Conditions

Inner Harbor I

Inner Harbor I was the first stage of Harbor Development Program. It includes the 95 acres of land surrounding the inner basin. The total projected investment reaches $270 million of which $210 million is new construction. The entire shoreline is edged with a public promenade. Facilities have been provided along the promenade for excursion boats, ferries to other parts of the harbor, visiting ships, and private mooring.

The inner basin is dominated by two features, Federal Hill Park rising above the southern shoreline and the 32 story World Trade Center on the north. Between the two and adjacent to the promenade lie a number of buildings and public facilities. On the south is the Inner Harbor Marina and Rash Atheletic Field. The promenade turns the corner of the basin a heads north at the Maryland Academy of Science. Light Street parallels the promenade and is the site of the Lutheran Home complex, McCormick Spice Company, the 500 room Regency Hotel and the C & P Telephone building. Between the northwestern corner of the promenade and the intersection of Light Street and Pratt Street Boulevard is Harborplace. Developed by the Rouse Corporation and open in July, 1980 the two pavilions offer the public a unique experience with over 120 restaurants, sidewalk constellation cafes, food markets and specialty shops. In it's first year of operation Harborplace has been visited over 18 million times by area residents and tourists, generated over 3 million dollars in taxes to the State and City and provided over 1000 permanent and 1000 part-time jobs.

Pratt Street Boulevard is also the location of the IBM Companies building and the 40 story headquarters of the United States Fidelity Guarantee Company.

Inner Harbor West

Located immediately south of Charles Center and west of the Inner Harbor I project area Inner Harbor West combines both office buildings, a convention center and residential development. The Federal Court House and the Equitable Trust Center, which also contains a retail mall form

the northern border along Pratt Street Boulevard. The Baltimore Convention Center is across the street and provides over 100,000 square feet of exhibition space. The convention center has been host to numerous conventions, trade shows, celebrations and one of the 1980 Presidential debates. South of the convention center is the 19th Century Otterbien Church which gave its' name to the rehabilitation area with over 100 homes. These diapidated structures once the residences of merchants and sea captains where offered to Baltimore City residents for $1 and the stipulation that they be rehabilitated. Otterbien has been extended to include an elderly high-rise and many additional new townhouses.

Inner Harbor East

Extending east along Pratt Street Boulevard and along the shoreline and piers, Inner Harbor East is dominated by the World Trade Center, the large brick power generating station and the National Aquarium at Baltimore located on Pier 3. Piers 4, 5 and 6 are now connected by pedestrian bridges so the public has full access to the entire waterfront. An 1800 seat tented music pavilion has just been completed on the end of Pier 6. This offers the public a unique setting to enjoy classical and contemporary performances. Inner Harbor East is also the site of the Harbor Campus of the Community College of Baltimore.

Falls Harbor

Falls Harbor, located east of the Jones Falls, is bounded by the Little Italy community on the north, Fells Point to the east and the harbor to the south. While the area is still industrial in character there are

builings and vacant sites which offer the prospect of extending the success of the Inner Harbor eastward. The City has completed the restoration of the fine 19th century Eastern Avenue Sewerage Pumping Station. Little Italy offers both a strong residential community and excellent restaurants.

Planned Development

The economic success of many projects in the Inner Harbor has a special significance to the citizens of Baltimore. Many citizens witnessed the transition of the Inner Harbor from a derelict waterfront which attracted only the workers in the various industries to diversified and unique resource for the entire community.

Development continues to be attracted to the project areas. The success is also being felt in adjacent areas as proposals for loft apartments, new buildings, restaurants and hotels are submitted to the City.

In the Inner Harbor a proposal for the vacant lot on Light Street, south of McCormicks has been received for a condominium and office tower combined with a parking garage. New townhouses are proposed and under construction in and around Otterbien. The new Federal Reserve Bank Building on Sharp Street is to be completed in 1982. The Camden Station owned by the CSX Rail System is due for renovation with houses, offices and hotels proposed in the adjacent areas.

The vacant lot north of Harborplace is planned for a combined hotel, retail and office development. East of the News American Building an

office building and expanded parking garage is under construction.

Concepts for the development of the Pier 4 power house, Piers 5 and 6 and the Falls Harbor area are under review.

Future Opportunities and Issues

The fact that the Inner Harbor has developed at a rapid pace over the past 15 years and is continuing to do so dictates close monitoring to insure that public access remains a priority and that the Inner Harbor remains a place for spontaneous interaction of the public with a relaxed atmosphere. In addition to the various water related activities, the Inner Harbor has become the traditional location for annual events such as the City Fair, ethnic festivals, concerts and other City sponsored cultural and sport oriented events. The concentration of such activity year around helps to promote and support this important area which is vital to the city's economic base, and at the same time returns public expenditures back to the public.

There are a few issues in the Inner Harbor which given proper attention, can be readily alleviated. The problem of vehicular and pedestrian traffic patterns is a major area of concern to the City. Pedestrians, both workers and visitors to the area, presently must cross major thoroughfares for vehicular traffic. Pratt, Light/Calvert and Key Highway each approximately four to six lanes, move traffic around the harbor and through downtown. Truck traffic traveling to and from the industrial areas of the harbor use these streets as primary routes. At peak hours heavy traffic poses impediments to pedestrian movement. This problem

will be exacerbated by added development. Walkways and ramps are available, but in some cases are linked to office buildings which are closed in the evening and are not available for use in weekends. As the public responds to the increasing success of the Inner Harbor careful attention must be given to safe access through the area.

Another major concern is the intrusion of outside parking into the Federal Hill Community which abuts the Inner Harbor to the south. During special events-the problem is further compounded and residents often cannot park on their streets and at times find their driveways and other access blocked. This problem will likely also spread into the newer communities being redeveloped. Recreational Boating and its potential conflict with commercial vessels also presents a concern to the City. As more boaters come into the Inner Harbor through the active port the potential for commercial and recreational conflict is increased. A special Mayor's Task Force on Boating Safety is working to develop mechanisms which would reduce potentials for conflict between the recreational boaters and the working vessels of the port.

The City will also anticipate a greater involvement by the private Sector in the development of many public amenities. This has proven extremely successful in the Pier 6 Music Pavilion. As development extends to other areas, Piers 4, 5 and 6 and Falls Harbor, the City looks to participating with developers in providing parks, promenades and special buildings and attractions.

Fells Point

Fells Point

Shaped like an inverted Y with Broadway running northward at the neck Fells Point juts into the Northwest Branch of the Patapsco River. This community contains evidence of Baltimore's earliest maritime activities while still supporting several large industrial concerns and a diversified residential population. Arundel Corporation's concrete plant on the east and Allied Chemical's plant on the west facing the Inner Harbor clearly indicate that there is still considerable heavy industrial activity in Fells Point. There is also limited maritime trade as represented by several active warehouses and the tug boats assembled along Boston Street and the City's Recreation Pier at the foot of Broadway.

While Fells Point remains industrial in character, many of the large, historic water front warehouses are planned to be converted into shops, offices and residences. This change in use combined with the private renovation of many homes will mark a decidedly different character in the area. The challenge will be to accommodate this change while maintaining the diversity of Fells Points population and shoreline activity.

Development History

Settled in 1730 by William Fell, Fells Point was one of the three original settlements along the Northwest Branch of the Patapsco River which were joined together in 1796 as the City of Baltimore.

Fell recognized the unique advantage for shipping that the stable shoreline and deep water offered. By the mid 18th century, Fells Point dominated the other two settlements, Baltimore Town and Jones Town in waterbourne commerce and shipbuilding. The waterfront was lined with piers and warehouses and the community supported a mixture of commerce and residential development. Shipbuilding was a major industry especially to the east along Boston Street and in neighboring Canton.

Through the 19th and early 20th centuries Fells Point accepted the great influx of immigrants. Although many settled in other parts of the region Fells Point still is home to a large Polish and eastern European community.

As technology changed shipping, maritime activities gradually moved to other locations in the harbor. Today many of the piers have rotted away and a number of warehouses stand ready to be renovated into commercial and residential uses.

In the 60's an alignment for I-83 was chosen locating the proposed road along an east-west corridor through the center of Fells Point, along Boston Street and connecting to I-95 in Canton. The City purchased

houses and land in the path of the road. Realizing the areas historic character and the potential for residential and commercial uses citizens convinced the City to seek other alignments during the 1970's. A tunnel, south of the shoreline became the accepted alternative. This freed many of the houses to be sold and rehabilitated and removed any doubt that Fells Point might be dominated by an elevated expressway. With Federal funding now reduced the City is pursuing other alternatives to construction of a major expressway and tunnel.

Existing Conditions

Industrial Activity: Currently the majority of Fells Points waterfront remains zoned for industrial activity. Four primary uses make up Fells Points industrial character; warehousing, maritime services, a concrete batching plant and a large chemical plant.

Fells Point

East along Boston Street at Lakewood is a cluster of large industrial and warehouse operations. The old J.S. Young factory is now vacant except for warehousing in several of the large buildings. E. Rennenburg and Sons manufactures steel machine products. Two other large buildings both between Boston Street and the harbor are devoted to warehousing. On the north side of Boston Street at O'Donnell, covering several City blocks is the American Can plant and warehouse.

The Arundel Corporations concrete batching plant on Wolfe Street is

the predominate activity on the eastern shoreline. Raw materials are mixed to form concrete which is then trucked out from this site to various parts of the City. The Arundel Corp. has plans to construct a bulkhead which will enable the plant to receive materials by water. Adjacent to the Arundel Corporation is Belt's Wharf located on two sites on Fell Street. Both sites house active warehousing operations.

Several other warehousing operations are found in Fells Point, the most notable being Rukert Terminal Corporation. Rukert Terminals has operated in Fells Point for a number of years and is currently at the foot of Broadway and in several historic warehouses along Thames Street. Also located adjacent to Broadway are several ship chandlers who supply goods to ships for their everyday operations.

The extreme western tip of Fells Point is occupied by the Allied Chemical Corporation plant on Philpot Street. The plant manufactures chromium chemicals and compounds and employs approximately 300 people. Also located along the western boundary of the area are several metal parts warehouses and the H & S Bakery.

Port Activity: As indicated several of the industrial concerns in Fells Point are directly dependent on the port. These include Belt's Wharf and Rukert Terminal's warehouses and several other operations. Many of the goods moved by these warehouses are specialized products and require labor intensive handling.

Perhaps the most evident of the maritime uses found in Fells Point are the towing companies located on Boston Street and at the City's Recreation Pier. Three companies, Harbor Towing on Boston Street and Baker-Whitely and Curtis Bay Towing at the Recreation Pier make up the majority of the water related activity along the Fells Point shoreline. The City pier at the foot of Broadway is also occasionally used as temporary mooring for cargo ships waiting assignment to a pier in another part of the harbor.

At the eastern end of the Boston Street waterfront is the Port East container operation. Containers are consolidated from other ports, shipped to this site and distributed to larger ships or inland destinations.

The water related activity associated with the towing companies, ship chandlers and the City's Marine Police Unit are important links to Fells Point's maritime past. Many residents believe it is very important to encourage these operations to continue along Baltimore's historic waterfront.

Commercial Activity: Fells Point has long been a diversified community mixing residential uses with industry, port operations and commercial properties. Broadway supports an extensive commercial community. While this primarily serves the immediate area residents

a number of establishments, including the City's historic Broadway Food Market, serve an increasingly varied clientele of local residents, tourists and people from other parts of the region. Hardware stores, banks and taverns are mixed with second hand and specialty shops, antique stores and restaurants. This diversity of uses is considered one of Fells Points strongest assets.

Residential: Since Fells Point's founding in the early 18th century there has been a strong residential quality to this community. Originally the houses were built for those tied to the shipping operations and those servicing their needs. During the early to late 19th century Fells Point became the home of thousands of immigrants to this country largely from eastern European counties. Through the first half of this century Fells Point remained a center for European culture. Descendants of many of these families still live in the area. During the 1960's a trickle of new residents, many artists and new city dwellers "discovered" Fells Point. More recently as the diversified quality and the historic character became known, people began to move into the community and renovate many of the 18th and 19th century brick rowhouses. The appeal of living in a historic community adjacent to the harbor grew and has today generated a number of proposals to renovate many of the abandoned warehouses and develop new townhouses on vacant land.

Planned Development

Private:

The composition of Fells Points industrial shoreline is rapidly changing. This is evidenced by the following projects:

*Boston Street Pier: A small waterfront pier is planned for the shoreline at Boston and O'Donnell Streets. This is to be used for public access and small boat mooring. The project is funded by the Coastal Energy Impact Program.

*The Anchorage: Plans have been developed for approximately 40 townhouses and a 90 unit mid-rise on a piece of property along Boston Street between O'Donnell and Hudson Street. Included in the project is a public promenade along the waterfront and a marina.

*Thames Point: The Wolfe Street portion of the National Can Company plant has been renovated as approximately 80 condominiums with the first floor reserved for commercial uses. A public boardwalk and a small marina have also been developed.

*Henderson's Wharf: The former B & O Warehouse on Fells Street and the vacant land that is actually Fells Point are to be developed as a condominium, commercial and marina complex with a landscaped parking area. The shoreline around the parking lot and the ground

floor of the building is to be available as a public promenade. The shoreline of this project affords some of the most exciting views of port activities available in the harbor.

*Western Shoreline: Brown's Wharf, the Terminal Corporations warehouse, Jacksons Wharf and parcels of vacant land are all under consideration for redevelopment as residential and commercial complexes. Several marinas are also included in these plans.

*Inland: A number of smaller yet highly visible renovations are either underway or planned for the community of Fells Point. The Vinegar Factory on South Broadway will offer residential units and commercial space. The Rag Factory at Lancaster and Wolfe will be renovated and combined with new townhouses.

Public: The City of Baltimore has sought to encourage existing and new residents of Fells Point to make improvements to their properties. Several projects have been completed with the idea to spur commercial and residential upgrading. These public projects include:

*Fells Point Plaza: A public plaza has been constructed in the bed of S. Broadway between Lancaster and Thames Streets. The plaza was designed to be a focal point for community events and festivals.

Broadway Market Renovation: The southern shed of the Broadway Market has been restored to recapture the appearance of earlier

Fells Point. Major interior improvements were also accomplished to assist local merchants. Improvements are also planned for the brick north shed.

*Neighborhood Park: Located on the northwest corner of Thames and Wolfe Streets, this is one of several planned public parks in the area designed to give residents needed green space. The park contains a play area for small children, green space and a gazebo.

*Public Waterfront access: Included in several private projects which have received support through Urban Development Action Grants are promenades, walkways or small parks to provide the public with access to the shoreline. These will be constructed as the projects are developed.

Future Opportunities and Issues

Fells Point offers the unique opportunity in the Baltimore harbor of a residential community along a historic working waterfront. Now vacant warehouses and commercial buildings stand ready for rehabilitation. Derelict piers and crumbling shorelines are to be rebuilt as marinas and public promenades. Innovative rehabilitation programs are designed to assist new homeowners and existing residents. However there are a number of issues which must be addressed if the area is to retain its unique mix of residential and commercial, new and old and European heritage.

The influx of new residents dilutes the control of the communities activities by residents who have been in the area for many years. The unique European flavor and the strong distinction of the community could disappear. Coupled with this is the fear that newer residents willing to pay much higher prices for homes will trigger dramatic increases in property taxes. These will be well beyond the means of fixed income residents and could force them to sell their homes. The increased commercial activity, restaurants, shops and tourists leads to an influx of automobiles. Traffic and lack of parking are becomming major concerns of both long time and the more recent residents. This can be especially accute when large warehouses, which had limited or no parking, are converted to commercial and residential uses. Several proposals call for over 100 condominiums and will require parking garages to accommodate the increase in automobiles. Fells Point has long had port and heavy

industrial uses mixed with residential areas. However, as homes are rehabilitated and warehouses are converted into condominiums many of the new residents will not accept heavy truck traffic, trains in the streets and the noise and dust associated with heavy industry. While wishing to maintain industry the City will have to carefully phase new development to avoid direct conflicts with existing industry. With many of the residential proposals come plans for marinas. A similar conflict that could exist on land has the potential for developing on the water, new users, recreational boaters will increase in number and confront existing users, the towing companies. Review of marina proposals with the commercial shippers and towing companies should assist the City in developing safe compromies.

Much of the shoreline is in private ownership, however one of the promises of Fells Point is public access to the waterfront, to view ships, harbor activity, the new marinas and industry. The City has and is working with private developers to insure the availability of the shoreline to the general public.

NAME & TITLE	David W. Chapin, Chief Joint Development Planning Bureau
AGENCY NAME & ADDRESS	Interstate Division for Baltimore City 2225 North Charles Street Baltimore, Maryland 21218
SUBJECT	Coal Transportation

CITY of BALTIMORE

MEMO

DATE: May 8, 1981

TO

Mark Wasserman
346 City Hall

Attached is a copy of the status report on the coal transportation issue which you recently requested.

You are familiar with the issue, and much of the information in the report is not new. I thought, however, that it would be useful to put in all of the appropriate information in this format.

There are differences between this report and the Mayor's written testimony which you should note. For instance, skepticism regarding CSX train crossing times is included here, where obviously, it could not have been in the Mayor's testimony. Preliminary conclusions regarding the feasibility of grade separations are included. A discussion of alternatives to grade separation is included. Several options regarding future negotiations with CSX are discussed. Finally, some decisions which need to be made are highlighted.

Should the Mayor want to review this, I suggest that he concentrate on the Executive Summary, and the sections "Possible Actions to Mitigate Impacts of Coal Trains", and "City Relationship to Railroads".

A three sentence summary of the report would be as follows:

1. There will be substantial impact in Mt. Winans/Westport, Curtis Bay and Canton.

2. The success of attempts to mitigate the problems will be very limited, due to lack of funds, engineering feasibility and environmental concerns (relocation).

3. The City Administration should decide how much and in what manner it wants to pressure CSX to participate in improvements.

I am distributing copies to those most directly concerned with the issues in the report.

attach.

cc: W. Thiersen w/attach
B. Berkowitz w/attach
J. Boyd w/attach
D. Carroll w/attach
J. Brodie w/attach
W. Hellmann w/attach
F. Kuchta w/attach
S. Lynn w/attach
R. McCauley w/attach
A. Spanier w/attach

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All-America City - 76-77

TRANSPORTATION ISSUES

RELATED TO COAL EXPORTATION

Interstate Division for Baltimore City

May, 1981

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EXECUTIVE SUMMARY

Coal export out of Baltimore is presently approximately 12-14 million tons per year. This could increase to between 54 and 69 million tons. Six (6) to eight (8) daily unit coal trains move through the City. This could increase to as many as 40 daily trains.

CSX (Chessie) will haul the bulk of the coal exported. Conrail will haul a lesser amount. Rail lines utilized run through Mt. Winans, Morrell Park, Carroll Industrial Park in southwest Baltimore; Cherry Hill, Fairfield, Curtis Bay and Hawkins Point in southern Baltimore City; Charles Village and Homestead/Montebello in north and northeast Baltimore, and Canton in East Baltimore. CSX may make improvements to allow additional use of tracks in Westport and Mt. Winans.

Streets may be crossed by coal trains at eighteen (18) locations throughout the City. Train volumes will be highest over the 2600 block of Hollins Ferry Road (Mt. Winans), Benhill and Pennington Avenues (Curtis Bay), Quarantine and Old Hawkins Point Roads (Hawkins Point), and Boston Street and the O'Donnell Street service drives (Canton).

Delays at intersections will, in many cases, be significant. Delays of 3 to 12 minutes per train might be expected. Most delays will be 6-10 minutes per train. Several locations will be blocked for 3-4 hours each day by trains of all types.

Some streets blocked by coal trains provide the only or primary means of access to neighborhoods. Areas in Hawkins Point, Curtis Bay, Westport and Mt. Winans fall within this category. Blockage of streets may interrupt emergency vehicle access to areas.

Several approaches to dealing with the problem are possible. One, preventing terminal development, is unwise and impractical. The two approaches which are desirable include making modifications to train schedules, speed, etc. as well as improving signal devices, and building bridges carrying streets over railroads. Combinations of both approaches will be necessary. It is unlikely, however, that pursuit of these will be more than moderately successful. Lack of financial cooperation from CSX, funding constraints, and other factors will limit the City's ability to resolve problems at each of the eighteen effected rail/highway crossings.

Bridge construction carrying at least Boston Street and Pennington Avenue over railroad tracks is recommended. At nine other locations, grade separations would be desirable. Engineering studies now underway at the Interstate Division will probably indicate that building bridges at each location will not be cost-effective or feasible.

Grade separating Boston Street and Pennington Avenue will likely cost $25-30 million. A program involving grade separation of these two streets and some of the other nine locations, as well as signal improvements, improvement of crossing surfaces, and other related improvements would likely cost approximately $60-80 million.

Thusfar, the City has avoided exerting great pressure on CSX to financially participate in an improvement program. Two options for future policy vis a vis the railroads are presented. One would involve continued "private" negotiations accompanied by increased pressure on CSX. The other would "escalate" the intensity of negotiations, by focusing public attention on the problems. In either case, decisions must be made regarding specific actions the City will take in pressuring CSX to become more involved in an improvement program.

With the exception of Curtis Bay, community response has been slight, or non-existant. Lack of awareness of the issues involved has contributed to this. Communities which will be most seriously effected are Mt. Winans, Curtis Bay, Westport, Carroll Industrial Park, and the Canton industrial area.

Increased use of rail facilities for coal export may have various other rail related "impacts". Difficulty in expanding commuter rail service or the B&O mainline is the most obvious.

INTRODUCTION

This report deals only with land-side transportation issues related to coal exportation. Excluded from consideration are a number of other issues pertaining to land use policies, tax revenues, employment, air quality, and dredging.

COAL TERMINAL DEVELOPMENT

Existing Facilities

There is one existing terminal of major significance: the CSX (Chessie; B&O) owned and operated *Curtis Bay Terminal* (see Figure No. 2). Approximately 12-14 million tons of coal are exported annually from this terminal, requiring 6 to 8 daily unit coal trains, each of which are about 6000-6500 feet long.

Two other coal terminals exist in the port. These are: the *Port Covington* facility, and the *Conrail Clinton Street pier*. Use of Port Covington is a temporary measure enacted to relieve some of the congestion of coal ships in the bay. It will terminate operation once new terminals come on line. No trains serve this facility. The Conrail facility is used only for loading coal on barges which are destined for the Sparrows Point facilities, or other locations. It is not in the export business. On the average, a total of 2 train movements per day are made to service this terminal.

Planned Facilities

Two terminals are in the construction or advanced design stages. One terminal is in the early planning phase. A fourth new terminal may be proposed. A fifth has been discussed.

A portion of the *Occidental/Island Creek/Kentucky-Ohio* project is under construction in Curtis Bay, within the B&O Railroad's Curtis Bay Terminal

complex. The first phase (under construction) involves a ground storage area. Baltimore City enacted a $35 million tax exempt industrial revenue bond to assist the project. Occidental also plans to build a related coal pier, which will cost approximately $30 million. Occidental has recently requested the City to increase the original $35 million IRB to $100 million to allow pier development. The Occidental Terminal would be in operation by late 1982, or early 1983. Estimates of annual volume vary between 7 and 15 million tons. Twelve (12) to 15 million tons is likely. It would require, on the average, 8 daily, 6600 foot long trains.

The *Consolidation Coal Terminal* (Consol), in Canton, is in the advanced design stage. It will be completed in early or mid 1983. At a projected volume of 10 million tons per year, it will require 6-8 daily 5200 foot long unit trains. The terminal might, in the relatively distant future, be expanded to 20 million tons. Consolidation is investing over $110 million in the project, (including the $30 acquisition of the Canton Company). Approximately 100 persons will be employed at this facility.

The *Marley Neck Terminal*, also known as the Soros project, would be the largest of any constructed. To be located in Anne Arundel County, it would occupy about 500 of the Chessie System's 2000 acre holding in Marley Neck. Its construction is strongly supported by Chessie. Project costs would be about $100 million. The terminal would begin operations in 1985, would have an initial capacity of 15 million tons per year and an ultimate capacity of 30 million tons per year. Eight (8) to 16 daily 6700 foot long trains would be required. Approximately 100-200 persons would be employed. The project has encountered strong community opposition and may have some permit related problems. Nevertheless, it is still likely to be built.

There has been recent speculation that *Bethlehem Steel* will build a coal export facility in Sparrows Point. As of yet, there has been no announcement,

nor details regarding its development. If built, it would probably be located on the south side of the Sparrows Point Plant, and would be in the 10 million plus annual ton range.

A *Hawkins Point* facility has been mentioned. It is doubtful, however, that this terminal will materialize.

Summary of Terminal Development

The two tables below summarize the information given above.

COAL TERMINAL DEVELOPMENT

Terminal	Status	Completion Date	Investments (millions)	Employment
Curtis Bay	Existing	--	$11*	100-*
Island Creek	Construction	1983	$70	100-*
Consol	Design	1983	$100	100
Marley Neck	Proposed	1985	$100*	100-200
Beth. Steel	?	?	?	?
Hawkins Point	?	?	?	?
Totals:	Existing:		$11+	100
	Proposed:		$270	300-400

*Figures are estimated.

COAL TERMINAL OPERATIONS

Terminal	Status	Volume (million tons/year)	Unit Trains/Day
Curtis Bay	Existing	14	8
Island Creek	Construction	15	8
Consol	Design	10	6-8
Marley Neck	Proposed	15 initial	8
		30 ultimate	16
Beth. Steel		?	?
Hawkins Point		?	?
Totals:	Existing:	14	8
	Proposed (initial):	40	22-24
	Proposed (ultimate):	55	30-32
	Total (initial):	54	30-32
	Total (ultimate):	69	38-40

Thus, if the Curtis Bay, Island Creek, Consolidation and Marley Neck Terminals were built, and were all terminals but the Marley Neck Terminal operated at ultimate capacity, 54 million annual tons would be exported, requiring 30-32 unit trains per day.

Were these same facilities completed and operated at ultimate capacity, total volumes would be 69 million annual tons; total unit trains, 38-40 per day.

An expansion of the Consol facility and development of other facilities would increase these figures.

It should be noted that in the past terminals have not usually operated at more than 70% of design capacity. In addition, there is some concern that more terminals are proposed on the East Coast than is warranted by demand. Nevertheless, despite these two concerns, new terminals continue to be proposed. Obviously, coal exporters are very optimistic. It is therefore wise to presume that at least the Curtis Bay, Consol., Island Creek and Marley Neck Terminals, if built, will ultimately operate at or near capacity.

RAIL TRANSPORTATION NETWORK

Figure Nos. 1, 2, 3 and 4 show the rail transportation network related to the Curtis Bay, Island Creek, Marley Neck and Consolidation Terminals.

Existing Rail Network and Service

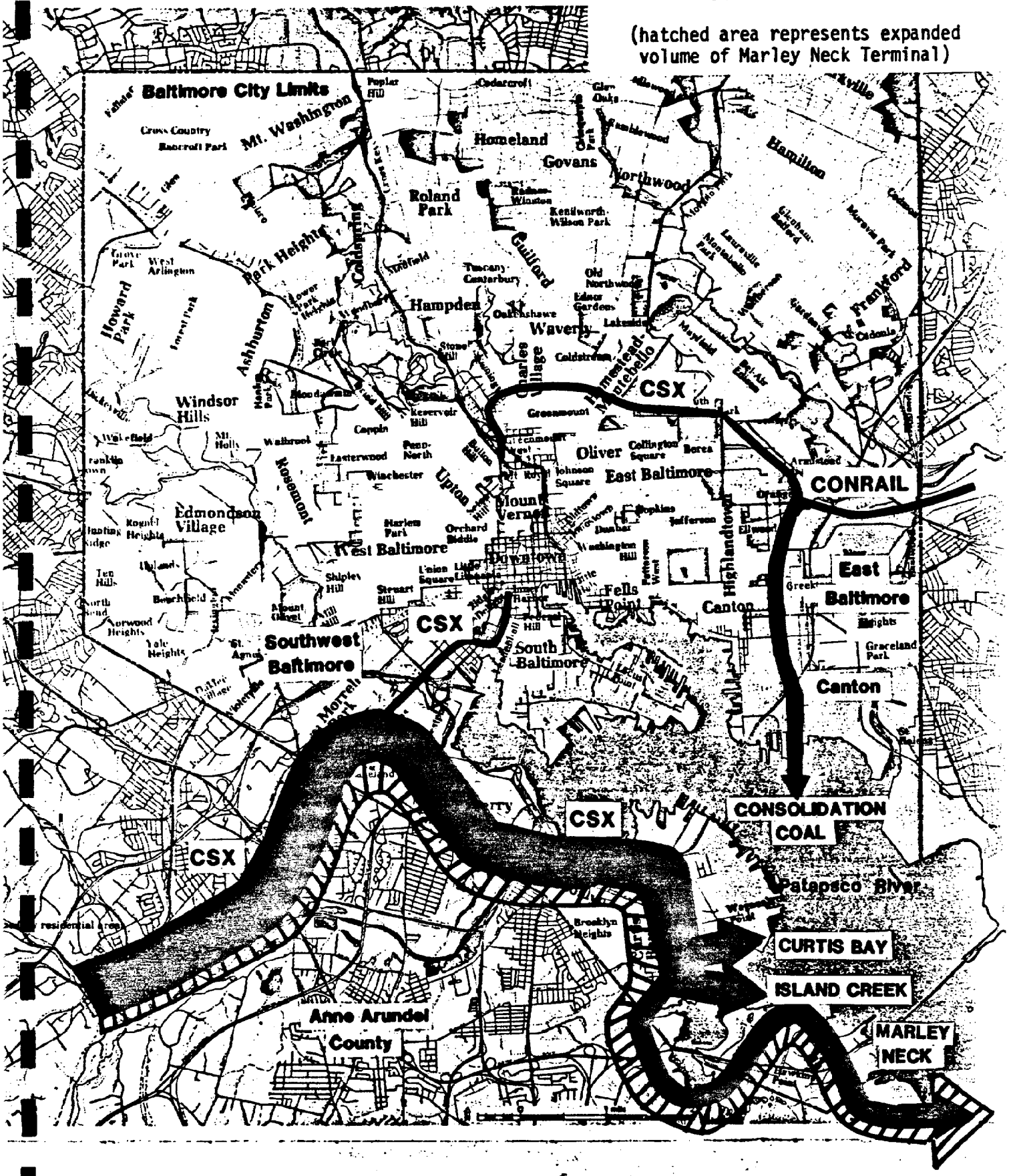
Coal trains feed two existing terminals.

The *Curtis Bay Terminal*, requiring 6-8 daily trains, is fed by the CSX (Chessie System), and indirectly by Conrail. Chessie trains (4-6 per day) enter the city from the southwest on the B&O mainline, exit it at Curtis Bay Junction in Mt. Winans, and run to (or from) the terminal on the Curtis Bay

FIGURE NO. 1

COAL HAULING RAIL LINES
IN BALTIMORE AREA

(hatched area represents expanded volume of Marley Neck Terminal)



Branch. One grade crossing, the 2600 block of Hollins Ferry Road, is effected. (See Figure No. 2).

Conrail trains serving the Curtis Bay Terminal (2 per day) enter the City from the northeast on the Amtrak mainline, run through the Union Tunnels, pass Penn Station, and are switched to the Chessie System at Mt. Vernon Yard, north of North Avenue, CSX (Chessie) then hauls the trains through the Howard Street Tunnel, on to the South Baltimore Branch, and subsequently down the Curtis Bay Branch. Effected grade crossings are Warner, Ridgely, Bayard and Bush Streets, Annapolis Road (2000 block), Kloman Street, and Waterview Avenue. (See Figure No. 2).

As indicated earlier, the *Conrail Clinton Street Terminal* is serviced by 2 daily Conrail trains which cross the O'Donnell Street service drives and Boston Street.

Railroad Service to Proposed Terminals

The *Island Creek* and *Marley Neck Terminals* would be fed exclusively by CSX (Chessie). Were a *Hawkins Point Terminal* built (unlikely), it would also be serviced by CSX. The *Consolidation Coal Terminal* will be serviced by both CSX and Conrail. If a *Bethlehem Steel Terminal* is built, it would likely be serviced by both CSX and Conrail, although one might expect Conrail to play a more important role in regard to this facility.

Railroad Network Modifications to Service New Terminals

To a large extent, the new terminals will be fed by trains running in existing patterns; that is, CSX oriented terminals on the south shore (*Island Creek* and *Marley Neck*) would receive trains routed on the B&O mainline and the Curtis Bay Branch, while Conrail trains will reach the *Consolidation Coal Terminal* on existing Conrail tracks.

FIGURE NO. 2

COAL RELATED GRADE CROSSINGS
IN SOUTHWEST BALTIMORE

KEY TO GRADE CROSSING SHOWN ON FIGURE 2 AND FIGURE 3

Figure 2

1.	Warner Street	CSX; B&O Mainline
2.	Ridgely Street	CSX; B&O Mainline
3.	Bayard Street	CSX; B&O Mainline
4.	Bush Street	CSX; B&O Mainline
5.	Hollins Ferry Road (2200 block)	CSX; B&O Mainline
6.	Hollins Ferry Road (2600 block)	CSX; Curtis Bay Branch
7.	Hollins Ferry Road (2000 block)	CSX; WMRR-B&O Connector
8.	Berlin Street	CSX; WMRR-B&O Connector
9.	Annapolis Road (2000 block)	CSX; South Baltimore Branch
10.	Annapolis Road (2100 block)	CSX; WMRR
11.	Kloman Street	CSX; South Baltimore Branch
12.	Waterview Avenue	CSX; South Baltimore Branch

Figure 3

13.	Benhill Avenue	CSX; Marley Neck Branch
14.	Pennington Avenue	CSX; Marley Neck Branch
15.	Quarantine Road	CSX; Marley Neck Branch
16.	Old Hawkins Point Road	CSX; Marley Neck Branch

FIGURE NO. 3

COAL RELATED GRADE CROSSINGS
IN SOUTH BALTIMORE

Some significant changes are however, anticipated.

In order to better utilize the Curtis Bay Branch, CSX may build a track connecting the South Baltimore Branch to the Western Maryland Mainline just east of Annapolis Road and north of Manokin Street in Westport. (See Figure No. 2). This project would be funded as part of the Off Corridor Diversion program, or by CSX on its own. It would allow CSX to have two means of connecting its B&O mainline to the Curtis Bay Branch. If this connection is made, perhaps as many as 5-7 additional trains of all types would cross Waterview Avenue, Kloman Street, Annapolis Road (2100 block), Berlin Street, and Hollins Ferry Road (2000 block) on their way to or from the B&O mainline. If this connection is not made, these trains would use the Curtis Bay Branch's existing junction into the mainline, and would cross Hollins Ferry Road at the 2600 block.

NOTE: A decision is required as to whether the City should oppose CSX's construction of this connection. Although there is little leverage that the City could apply (CSX owns the needed property), the City might be able to influence CSX. Not building the connection would lessen impacts on Westport and a portion of Mt. Winans; building it would lessen impact on another portion of Mt. Winans. (See pages 13, 14, and 18).

Secondly, in order to gain access to the *Consolidation Coal Terminal*, CSX will acquire Conrail and Canton Railroad tracks which lead from the vicinity of the Bayview Yards to the Consol Terminal, and build a track connecting CSX tracks at Bayview Yards to the to be acquired Conrail tracks. Thus, CSX trains feeding the terminal, as well as Conrail trains, will cross the O'Donnell Street service drives and Boston Street. (See Figure No. 4).

NOTE: This route for CSX trains is the only practical route; construction of the connection should not be opposed.

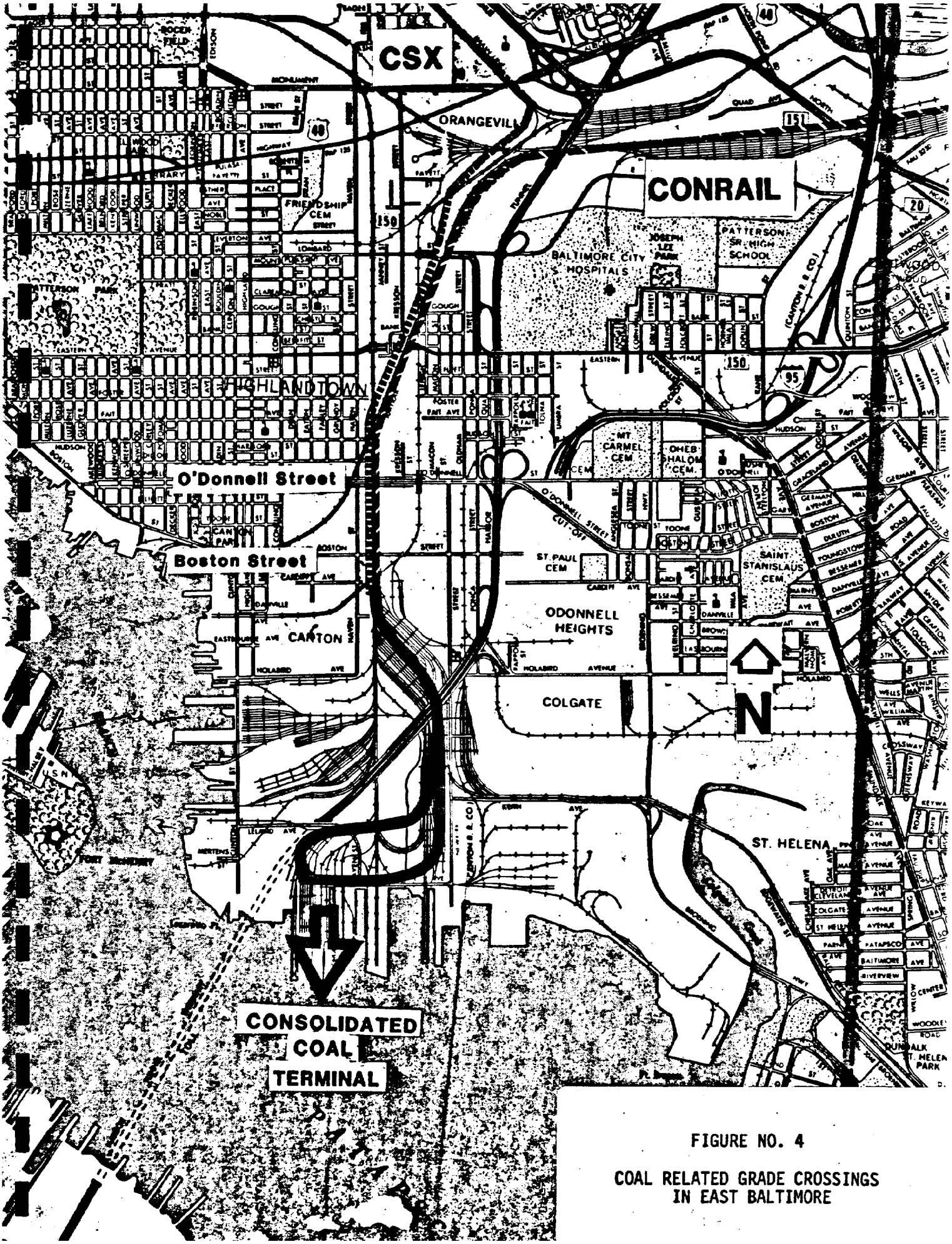


FIGURE NO. 4

COAL RELATED GRADE CROSSINGS
IN EAST BALTIMORE

EFFECT OF PROPOSED ROUTING OF TRAINS ON STREET NETWORK

Effected Grade Crossings

Presuming that the above described improvements are made, and presuming that the Curtis Bay, Island Creek, Marley Neck and Consolidation Coal Terminals are built and operated at capacity, coal related rail movements and their effect on the local street network will be as follows.

Up to eighteen different locations could be effected by coal trains. These are given below, and shown and summarized on Figures 2, 3, and 4, and Tables II and III.

COAL TRAIN EFFECTED GRADE CROSSINGS

	Street	Existing Coal Trains/Day	Additional Coal Trains/Day
1.	Warner Street	2	4
2.	Ridgely Street	2	4
3.	Bayard Street	2	4
4.	Bush Street	2	4
5.	Hollins Ferry Road (2200 block)	0	4
6.	Hollins Ferry Road (2600 block)	6	19
7.	Hollins Ferry Road (2000 block)	0	5
8.	Berlin Street	0	5
9.	Annapolis Road (2000 block)	2	0
10.	Annapolis Road (2100 block)	0	5
11.	Kloman Street	2	5
12.	Waterview Avenue	2	5
13.	Benhill Avenue	0	16
14.	Pennington Avenue	0	16
15.	Quarantine Road	0	16
16.	Old Hawkins Point Road	0	16
17.	O'Donnell Street service drives	2	8
18.	Boston Street	2	8

If a Bethlehem Steel Terminal were to be built, and if it were fed by CSX trains, these trains would probably cross Newkirk Avenue, Ponca Street, and Holabird Avenue. They would also go through Fort Holabird. Numerous grade crossings in Dundalk would be effected. Please note that there is no certainty that such a terminal will be proposed, let alone be built.

It should also be noted that Ordinance Road, within Anne Arundel County in the Curtis Bay area, would be effected in a manner identical to Pennington Avenue. So too would Kembo Road, which is a far less important road in the Marley Neck area of Anne Arundel County.

Finally, one should note that these train volume figures are based on information given by CSX, and are the result of averaging. They are based on a presumption that trains will run 365 days per year. If they run less than 365 days per year, and if terminal volume goals are to be achieved, daily train volumes will be greater. Also, no strikes, derailments, etc. are considered. Consequently, on any given day, the number of trains could be as much as 25%-50% higher, or lower than that shown.

Delays Caused at Grade Crossings

A 130 car unit coal train can be as long as 6690 feet.

CSX claims that trains on the Curtis Bay Branch, crossing Hollins Ferry Road (2600 block), Benhill Avenue, Pennington Avenue, Quarantine Road and Old Hawkins Point Road, as well as Ordinance Road and Kembo Road in Anne Arundel County, will probably travel at 15 mph, with a maximum speed of 20 mph. A 15 mph train of this length will block an intersection for about 6 minutes. We have no guarantee that CSX will be able to operate trains at this speed, other than our knowledge of CSX's intention to upgrade the line to a 20 mph hypothetical design speed. Delays of up to 8-9 minutes per train (speed 10 mph) should be expected, since it is likely that trains will operate at less than 15 mph.

Tracks on the South Baltimore Branch, and the Western Maryland Mainline - B&O Mainline Connector in Mt. Winans will not allow speeds of 15-20 mph. CSX anticipates these trains to run at 10 mph (8-9 minutes delay per train). Occasional delays of approximately 12 minutes per train should be expected. Effected streets include: Waterview Avenue, Kloman Street, Annapolis Road (2100 block), Berlin Street, and Hollins Ferry Road (2000 block).

The tracks which cross the O'Donnell Street service drives and Boston Street allow speeds of 10-15 mph. Delays of 6-12 minutes per train can be expected.

Baltimore and Ohio Railroad Mainline (CSX) tracks running through the Carroll Industrial Park allow speeds of up to 35-40 mph. Trains will probably operate at 20 mph. Delays of 3 to 5 minutes per train can be expected.

Due to the large number of trains passing over certain streets, total daily delay will be significant. *Boston Street* and the *O'Donnell Street service drives* will have the greatest daily blockage (nearly 4 hours per day). The *2600 block of Hollins Ferry Road* will be blocked for nearly 3 hours per day. Several other locations, including the *four streets in the Carroll Industrial Park* and *Pennington Avenue* would be blocked some 2 hours per day. (Daily delays are based on all train movements).

Impact on Neighborhoods and Industrial Districts

The delays to motorists at grade crossings, which will occur numerous times each day, are only part of negative effects to various areas.

Several areas of the City, although small in size, are "landlocked" by rail lines which will be used by coal trains. These areas have no other means of access other than the street crossed by the railroad. *Benhill Avenue* provides the only means of access to at least four industries on the Curtis Bay waterfront. *Quarantine Road* is the only means of access for at

least one firm, notably the National Gypsum Company. *Old Hawkins Point Road* similarly provides the only means of access to several firms. Each time a coal train passes over these streets (up to 16 times daily) access will be denied for at least 6 minutes.

Industrial areas along the west shoreline of the Middle Branch in Westport, and on the south shore of the Gwynns Falls in Mt. Winans may have alternative means of access available, although these will largely be ineffective, or insufficient due to street width, direction, or condition.

A section of Mt. Winans, located west of the B&O mainline, south of the Western Maryland Mainline, and north of Hollins Ferry Road could, under rare circumstances, have all means of access blocked by concurrent passage of trains on three coal hauling lines. It should be noted that *Hollins Ferry Road* is crossed four times by rail tracks within the Mt. Winans area; three of these crossings may have coal trains on them; conceivably three trains could pass through this community concurrently.

The Carroll Industrial Park has alternative means of access available other than *Warner*, *Ridgely*, *Bayard* and *Bush Streets*, although firms there have already expressed concern about the inconvenience and disruption which will occur.

Trains passing over *Pennington Avenue* and *Ordinance Road* will not entirely prohibit access to areas on either side of the crossings; but the available alternative routes are so long and circuitous that the effect is the same as a total denial of access for at least 6 minutes per train.

Alternative east-west routes for *Boston Street* are available. However, vehicles, especially trucks, who are stopped on Boston Street by a train crossing will be effectively trapped; they will not be able to turn around due to the narrow width of the street.

In those areas which have no alternative means of access, it is conceivable that fire, police, and ambulance access will be denied for the duration of any train crossing. It should be a very rare occurrence, but it is nevertheless a hypothetical possibility that this could cause loss of life and property, raising of insurance rates, labor problems, lack of reinvestment in areas, etc.

Also of concern to areas through which trains will pass is the possibility of greater safety problems and increased noise. Some sections of the railroad lines discussed, especially within Mt. Winans, are unfenced. In some areas, fencing would not even be effective, due to multiple street crossings in a small area. The railroads' proximity to residences may lead to a greater possibility of injury to persons walking along or across rail tracks, as well as to increased noise levels. The frequency of accidents to children or adults depends entirely upon the judgment of those in the area; for the speed of most of the coal trains will be slow enough to allow persons to avoid accidents if common sense prevails. The only exception to this, obviously, is young children, who may not be aware of the dangers involved.

Please note that train volumes given above are only coal trains. There are other existing movements made, and proposed additions of non-coal trains in the planning stages. Also, hours of delay given only pertain to existing trains plus coal trains. No delays resulting from other proposed trains are shown.

POSSIBLE ACTIONS TO MITIGATE IMPACTS OF COAL TRAINS

There are three general alternative approaches by which the City might deal with problems attendant in coal train transportation. These are:

- Prevent the problem from developing.
- Minimize problems created through operational adjustments and limited physical improvements.
- Eliminate problems through major physical improvements.

Alternative 1: Prevention

This alternative is draconian, and in all probability, unwise, It is mentioned only because it is an alternative. Simply stated, this would involve drastic reversal of City policy whereby the City would undertake to halt coal terminal development. Additional industrial revenue bonds for terminals would be denied, existing laws prohibiting passage of trains over streets for more than 5 minutes would have to be enforced with extremely harsh penalties, permits denied if and when justification for doing so exists, and the spector of retalitory actions, such as removing the B&O's tax exempt status, and imposition of an extreme coal tax threatened. In short, our existing relationship with Chessie (CSX), MPA, GBC and the business community at large would be severely altered.

The obvious consequences of this policy underscore the reason for not undertaking it.

An additional reason for not pursuing this policy is that there is no guarantee that it would work. The Consolidation Coal Terminal will be built; the Island Creek Terminal will probably be built, regardless of any efforts to the contrary. There is enough governmental support (Anne Arundel County) and too little City leverage to give an measure of certainty that the City could stop the Marley Neck Terminal.

Therefore, despite the negative aspects of coal terminals and related activities, it is not recommended that this policy be adopted.

Alternative 2: Operational Adjustments and Limited Physical Improvements

The second general approach would involve a number of related actions. The likelihood of success in each is limited. Under this approach the City would attempt to persuade CSX (Chessie) to modify train operations to reduce impacts, and would undertake a limited physical improvement program which would reduce impacts.

NOTE: This course of action has not yet been pursued, because in order to achieve any success, it would require a more negative, forceful, and coercive relationship with Chessie. Direction to undertake this policy reversal, can come only from the Mayor.

First, Chessie would have to be persuaded to expend funds necessary to further upgrade the design speed of the Curtis Bay Branch. A minimum speed of 20 mph would have to be guaranteed. Delays would be reduced from approximately 6 to 8 minutes to 4.5 minues per train. Chessie will spend about $1 million to upgrade this line to a hypothetical design speed of 20 mph - which will mean a practical speed of 15 mph $\pm$. There is no certainty that Chessie could, or would fund improvements necessary to guarantee a 20 mph operating speed.

Secondly, Chessie would have to be persuaded to schedule trains to run during off peak hours, and would be asked to concentrate movements at night. Due to the large number of trains required, it may be impossible for Chessie to do this. They are presently planning to run the trains whenever they arrive in the area.

Third, Chessie would be asked to install train activated signals where they do not exist on heavily travelled streets. Pennington Avenue is, perhaps, the best example. Presently, trains must stop, a crewman must disembark, stop traffic, the train recommences (at a very slow rate of acceleration) and crosses the street. This causes significant delay. Were signals

installed, the train could maintain speed as it approaches and crosses an intersection. Signals would be activated 30 seconds before passage of the train.

At lesser streets this is not as much a problem; for the trains do not stop, as they supposedly should. Instead, the train maintains speed, and a crewman throws a flare onto the street as the train passes.

Signal activators which respond sensitively to the speed of an oncoming train cost between $50,000 and $100,000 each.

In addition, Chessie would be asked to install activators which are sensitive to train speed at locations where non-sensitive activators presently exist. In many cases, such as the crossings in the Carroll Industrial Park, signals are activated when a train reaches a certain distance from the crossing, regardless of its speed. They are timed so that were the train running at maximum allowable speed, the signal would be activated 30 seconds in advance of the train passage. Trains running slower than the speed limit, or switchers moving back and forth, activate the signal well in advance (1 minute or more) of the train crossing, or occasionally, without ever crossing the street.

Fourth, the City, Chessie, and/or Conrail could attempt to devise and install a pre-warning signal system to alert motorists to not turn onto a street over which a train is about to pass. Such a system might be applicable to streets in the Carroll Industrial Park and Boston Street. I am not aware of any such system in the Baltimore region. Costs could be significant. Its effectiveness is uncertain.

Fifth, Chessie might be asked to not build a track connecting the South Baltimore Branch to the Western Maryland Mainline which will allow passage of additional trains over Waterview Avenue, Kloman Street, Annapolis Road (2100

block), Berlin Street, and Hollins Ferry Road (2000 block) (see page 9). This would require significant pressure on CSX. Chessie already owns the necessary land. Not building the connection would restrict Chessie's operatios. It would also throw any trains which would use this route (up to 5 per day) onto the tracks crossing the 2600 block of Hollins Ferry Road, raising the total number of coal trains crossing that street to 30 per day.

Sixth, the City would review, and map out all alternative means of access to areas, and would modify and coordinate emergency vehicle access to areas to minimize delays caused by train crossings. For instance, two or more engine companies might be required to respond to a fire alarm in a certain area to assure that at least one reached the fire, even if the other were delayed by a train blocking its route.

Seventh, existing City law might be changed, even if all of the above described measures were implemented. City code now prohibits passage of a train for more than 5 minutes over a street. It is unlikely that we would be able to guarantee that all trains would block a street for less than 5 minutes. The City's choice is to ignore the law (as is done in certain instances today), or to modify it.

It should be noted that these steps, even were they successfully implemented, will not eliminate the problems. Instead they would only make the problems less severe, and slightly more acceptable.

Alternative 3: Major Physical Improvements

The only manner by which the problems inherent in grade crossings can be eliminated is to separate a street from a railroad. A bridge carrying the street over the railroad or vice versa would be built.

The Interstate Division for Baltimore City has begun a case by case analysis of the engineering feasibility of building bridges. The study is incomplete, but several preliminary conclusions can already be stated. These are:

- In order to construct bridges, right-of-way acquisition will probably be required in most locations, except at Boston Street and possibly Old Hawkins Point Road.
- Relocation of residential, commercial, or industrial parties would be required in at least several cases.
- In order to build bridges, other streets which presently intersect the street to be grade separated might have to be closed or modified since their existing intersection with to-be-grade-separated streets would be blocked by the bridge abutments and approaches.
- Costs for bridge construction, property acquisition, and relocation could fall between $3 million and $25 million per project. Presuming an average cost of $5 million per project, a program intended to grade separate all 18 locations would reach $90 million.
- Some locations do not warrant grade separations. Train volumes do not justify the expenditure.
- Due to cost, political and, environmental factors, it will not be desirable to construct bridges at numerous locations. The problems caused at such locations by increased train volumes will simply have to be tolerated.
- Funding any substantial program will be difficult. Some existing federal programs are proposed to be eliminated (Federal Aid Urban Systems, Rail/Highway Crossing Program). Even were these programs maintained, funding levels would be inadequate. The Urban System Program provides approximately $5 million per year to the City. The Federal Primary Systems Program is to be maintained, but provides only $1-2 million per year to the City. Interstate Transfer is a possibility, however we have no guarantee that sufficient federal funds would be appropriated in the near future, nor that sufficient local funds to match the federal money will be available.

Railroads will balk at any significant participation in costs. For instance, CSX (Chessie) has said informally that it would consider paying half the local share of a project, if the local share would be in the range of 10% of the total cost. It is doubtful that CSX would agree to paying more, unless significant pressure were exerted on it.

The State's inability to fund these projects is clear. Existing funding is inadequate. Were MDOT to create a special program, it might be perceived as another "gift" to Baltimore. Thus, even if the funds were available, the State might not be able to expend them due to the backlash of rural areas.

Based on the preliminary analysis done to date, one can state the following:

Boston Street, and *Pennington Avenue*, being the two most heavily travelled streets effected by coal trains, should be the first priority projects for grade separation. Funds are not now available to do the work.

Boston Street's grade separation would not require any additional property acquisition beyond that anticipated for I-83; no unanticipated relocation would be required. Cost to grade-separate Boston Street would likely exceed $25 million. There is a possibility that this work could be funded on a 90-10 basis, as part of I-95 work. Funding is however limited. It could also be funded on an 85-15 basis, as an interstate transfer project. Lack of funds, in either case, probably would prevent completion of any bridge until after the time when the coal trains begin crossing the street (early 1983).

Pennington Avenue should be grade separated if the Marley Neck Terminal is built. Property acquisition and relocation might be required. The project's cost would be approximately $10 million. Interstate transfer is the only source of funds. The Marley Neck Terminal would begin operations in

1985; bridge construction might take place as early as late 1983-1984, if interstate transfer funds and local matching funds are available.

Numerous locations require more analysis before a recommendation is made regarding the cost-effectiveness of grade separations. Those which might be considered for grade separation if engineering feasibility, cost, property acquisition and relocation do not present problems are: *Hollins Ferry Road (2600 block)*, *Hollins Ferry Road (2200 block)*, *Bush Street*, *Bayard Street*, *Ridgely Street*, *Warner Street*, *Waterview Avenue*, *Quarantine Road*, and *Old Hawkins Point Road*. Five of these streets (Hollins Ferry Road: 2200 block, Bush, Bayard, Ridgely, Warner) are on the B&O mainline, which presently carries substantial train traffic. Volumes are likely to increase, regardless of coal export. It should be noted; however, that those streets within the Carroll Industrial Park (Bush, Bayard, Ridgely, Warner) will likely be very difficult to grade separate.

Alternatives to grade separation will also be studied for some of the above named streets, especially those which provide the only means of access into an area. For instance, should grade separation of both Old Hawkins Point Road and Quarantine Road prove infeasible, construction of a bridge carrying Old Hawkins Point Road over the railroad tracks and construction of a roadway connecting it to the isolated area now served by Quarantine Road should be evaluated. Also, should grade separating any of the streets in the Carroll Industrial Park prove infeasible, modifications to street directions and signing might be considered to avoid dependence on those streets for access to the area.

The remaining locations, including *Benhill Avenue*, *Annapolis Road (2000 block)*, *Annapolis Road (2100 block)*, *Berlin Street*, *Hollins Ferry Road (2000 block)*, and *Kloman Street* cannot be grade separated without significant relocation or disruption. Non-grade separation alternatives will have to be

evaluated, especially for Benhill Avenue, Hollins Ferry Road (2000 block), Kloman Street, and Berlin Street, which provide the primary, if not only means of access to certain areas.

It is important to note that the combination of funding limitations, engineering feasibility, and potential property acquisition and relocation requirements will likely prohibit the City from developing acceptable solutions to access problems at every location. In those cases where major physical improvements to the street system cannot be made due to these factors, the City's only alternative will be to attempt to ameliorate the negative effects through options described under Alternative 2.

CITY RELATIONSHIP WITH RAILROADS

Inherent in the entire discussion above is the fundamental issue of the City's relationship with the two coal hauling railroads (CSX, and to a lesser extent Conrail). This is of enough importance to be discussed in its own right.

Thus far, statements made at public meetings and to the press have reflected a general policy of neutrality. We have attempted to describe potential problems in detail, but have avoided creating any controversy which might be interpreted by CSX as "bad will" on the part of the City. For instance, voicing skepticism over CSX predictions regarding train speed, design, impacts has been avoided. No statements which would publicly disagree with railroad policies have been made. Debates with CSX employees at public meetings have been minimized. Furthermore, we have underplayed the issue of impact in general, and have refrained from stating how much responsibility railroads should bear in relation to off setting negative impacts. The only step which the City has taken which was viewed adversely by CSX was the coal tax proposal.

In addition, in private discussions with CSX employees, a formal City policy regarding how much is expected of the railroad has not been stated. Instead, most attention has been focused on understanding the full range of impacts.

If CSX is to be convinced to participate in the financial cost of grade separations or lesser improvements, as described earlier, City actions and policy may have to be adjusted. (Since Conrail's financial participation is all but impossible, Conrail is not included in this discussion). Two general options exist.

Policy Option: Negotiate Privately

Under this approach public controversy would still be avoided. However, in private, the City would begin to exert stronger pressure on CSX to participate in various improvements. First, the City staff would ask CSX to list all improvements it intends to finance, what improvements could be financed jointly by CSX and the public, the degree of financial participation, and justification for CSX's unwillingness to finance other improvements. Second, a Mayoral letter to and/or meeting with Mr. Watkins would follow. Further hesitation by CSX to participate would have to be countered with a specific list of actions the City might take to give them reason to participate (threaten to create public controversy, enforce existing legal rail/highway delay requirements, go slow on construction permits for certain proposed tracks, oppose permits for new coal terminals, provide less cooperation on other joint projects). Obviously, in any case, we would not have much leverage.

Policy Option: Negotiate in Public

This option would be similar to that described above, with a fundamental difference in that the City would begin putting pressure on CSX through

a greater public discussion of the issues. Were the City to create public controversy regarding rail impacts (or threaten to do so) there is a slight chance that CSX might respond positively. I believe that CSX would do this only if it felt it would help win approval of the Marley Neck Terminal. Only if CSX perceives a connection between public opinion and its ability to increase revenues through development of new terminals will it respond to public opinion.

The danger to the City of "going public" is that it might only focus negative attention on potentially unresolvable problems.

COMMUNITY REACTION

Communities which will be effected by the increased movement of unit coal trains include:

Mt. Winans
Cherry Hill
Curtis Bay
Westport
Carroll Industrial Park
Bolton Hill/Mt. Royal
Charles Village
Homestead/Montebello
Greektown
Canton Industrial Area

Of these, *Mt. Winans* and *Curtis Bay* in that order, are effected most seriously. The *Carroll Industrial Park*, *Westport*, and *Canton Industrial* areas will be effected to a lesser extent. The remaining communities will be impacted, but for the most part only due to the nuisance value that trains may or may not present to residents. No grade crossings exist in these neighborhoods.

Residents of *Mt. Winans* apparently have expressed no concern about proposed developments. There is a possibility that the community is not aware

of the impending use of tracks for unit coal trains. This community will be more adversely effected than any other within the City.

Residents of *Curtis Bay* appear to be very concerned about not only the rail/highway crossing problem (Pennington and Benhill Avenues) but also the entire prospect of new terminal development.

Businessmen in the *Carroll Industrial Park* have expressed concerns about more trains moving through the area.

There has been little, if any, comments received from the *Westport Community.*

The *Canton residential community* has expressed concern about the side effects of additional use of neighborhood streets by trucks if Boston Street becomes less desirable due to unit coal trains related delays. Industries in that area have not expressed any concern.

OTHER RAIL IMPACTS RELATED TO COAL EXPORTATION

Efforts to date have concentrated on the rail/highway crossing issue. However, there will be other rail related impacts resulting from use of rail lines by coal trains.

1. Coal hauling revenues to railroads are significant. Strengthening of CSX's and Conrail's financial health will be welcome.

2. CSX acquisition of several Canton Railroad tracks in Canton may be a precursor to the eventual disposition of the Canton Railroad. Consolidation Coal, which owns the Canton Railroad, apparently has no long term interest in operating a short line railroad. CSX and Conrail may eventually propose dividing amongst them the profitable portions of the Canton railroad.

3. Increased use of CSX tracks insouthwest Baltimore for coal trains will make any significant expansion of the B&O operated commuter service

between Baltimore and Washington difficult. CSX will balk at significant expansion of this service.

4. The increased number of coal trains passing through the City may effect quality of rail service to general merchandise customers. The nature of the effect is uncertain. CSX officials claim that service quality will suffer.

TABLE I: EXISTING AND PROPOSED COAL EXPORT TERMINALS

Name	Location	Status	Serving Railroads	Annual Tonnage (million tons)	Total Unit Coal Trains Per Day Required[1]	Train Lengths
Curtis Bay	Curtis Bay, Baltimore City	Existing	CSX[2]	14	8	130
Island Creek	Curtis Bay, Baltimore City	Proposed	CSX[2]	15	8	130
Marley Neck	Marley Neck, Anne Arundel County	Proposed	CSX[3]	15 (initial) +15 (future)	8 (initial) +8 (future)	130 130
Consolidation Coal	Canton, Baltimore City	Proposed	CSX[4] Conrail[5]	10	8	100
Totals		Existing Proposed Total		14 40-55 54-69	8 24-32 32-40	

[1]Train volumes are based on 365 days per year operation with 83 tons of coal per car. Figures are rounded to next highest unit. Figures given include loaded and empty trains.

[2]Using the Baltimore and Ohio Railroad's Mainline, Curtis Bay Branch, and related tracks.

[3]Using the Baltimore and Ohio Railroad's Mainline, Curtis Bay and Marley Neck Branches, and related tracks.

[4]Using the Baltimore and Ohio Railroad's Mainline, as existing portion of the Penn-Mary Branch and tracks within Conrail's President Street Branch.

[5]Using the Amtrak Northeast Corridor, and Conrail President Street Branch.

TABLE II: COAL TRAIN IMPACTED STREET CROSSINGS WITHIN BALTIMORE CITY

Street	Type ADT	Nature of Traffic	Railroads	Coal Trains/Day	Terminal Serviced
Boston Street	Principal Arterial 20,000+	Industrial	CSX (B&O) CR	8 Proposed	Consolidation Coal (Consol.)
O'Donnell Street	Service Drive 3,000±	Industrial	CSX (B&O) CR	8 Proposed	Consol.
Warner Street	Secondary 1,500±	Industrial	CSX (B&O)	4 Proposed 2 Existing	Consol. Curtis Bay
Ridgely Street	Secondary 1,000±	Industrial	CSX (B&O)	4 Proposed 2 Existing	Consol. Curtis Bay
Bayard Street	Secondary 1,750±	Industrial	CSX (B&O)	4 Proposed 2 Existing	Consol. Curtis Bay
Bush Street	Secondary 1,500±	Industrial	CSX (B&O)	4 Proposed 2 Existing	Consol. Curtis Bay
Hollins Ferry Rd. (2200 block)	Secondary 6,100	Residential Industrial Commercial	CSX (B&O)	4 Proposed	Consol.
Hollins Ferry Rd. (2600 block)	Secondary 6,100	Residential Industrial Commercial	CSX (B&O)	6 Existing 7 Proposed[1] 6 Proposed (initial)[2,3] 12 Proposed (ultimate)[2,4]	Curtis Bay Island Creek Marley Neck Marley Neck

TABLE II: COAL TRAIN IMPACTED STREET CROSSINGS WITHIN BALTIMORE CITY

Street	Type ADT	Nature of Traffic	Railroads	Coal Trains/Day	Terminal Serviced
Subtotal Hollins Ferry Rd. (2600 block)				19-25	
Hollins Ferry Rd. (2000 block)	Secondary 6,100	Residential Industrial Commercial	CSX (WMRR-B&O)	1 Proposed[5] 2 Proposed (initial)[3,5] 4 Proposed (ultimate)[4,5]	Island Creek Marley Neck Marley Neck
Subtotal Hollins Ferry Rd. (2000 block)				3-5	
Berlin Street	Collector-Distributor 750+	Industrial Residential	CSX (WMRR-B&O)	1 Proposed[5] 2 Proposed (initial)[3,5] 4 Proposed (ultimate)[4,5]	Island Creek Marley Neck Marley Neck
Subtotal Berlin Street				3-5	
Annapolis Road (2000 block)	Secondary 14,000±	Industrial Commercial Residential	CSX (B&O)	2 Existing	Curtis Bay
Annapolis Road (2100 block)	Secondary 14,000±	Industrial Commercial Residential	CSX (WMRR)	1 Proposed[5] 2 Proposed (initial)[3,5] 4 Proposed (ultimate)[4,5]	Island Creek Marley Neck Marley Neck
Subtotal Annapolis Rd. (2100 block)				3-5	
Kloman Street	Collector-Distributor 1,000±	Industrial	CSX (B&O)	2 Existing 1 Proposed[5] 2 Proposed (initial)[3,5] 4 Proposed (ultimate)[4,5]	Curtis Bay Island Creek Marley Neck Marley Neck
Subtotal Kloman Street				5-7	

TABLE II: COAL TRAIN IMPACTED STREET CROSSINGS WITHIN BALTIMORE CITY

Street	Type ADT	Nature of Traffic	Railroads	Coal Trains/Day	Terminal Serviced
Waterview Ave.	Secondary 12,000±	Industrial Residential	CSX (B&O)	2 Existing[5] 1 Proposed[5] 2 Proposed (initial)[3,5] 4 Proposed (ultimate)[4,5]	Curtis Bay Island Creek Marley Neck Marley Neck
Subtotal Waterview Ave.				5-7	
Benhill Ave.	Collector-Distributor 1,000±	Industrial	CSX (B&O)	8 Proposed (initial)[3] 16 Proposed (ultimate)[4]	Marley Neck Marley Neck
Pennington Ave.	Principal Arterial 19,000±	Industrial Residential Commercial	CSX (B&O)	8 Proposed (initial)[3] 16 Proposed (ultimate)[4]	Marley Neck Marley Neck
Quarantine Road	Secondary 1,000±	Industrial	CSX (B&O)	8 Proposed (initial)[3] 16 Proposed (ultimate)[4]	Marley Neck Marley Neck
Old Hawkins Pt. Rd.	Secondary 800±	Industrial	CSX (B&O)	8 Proposed (initial)[3] 16 Proposed (ultimate)[4]	Marley Neck Marley Neck

EXPLANATORY NOTES FOR TABLE II

[1]Train volume given (7 trains per day) presumes that one (1) train per day is routed via South Baltimore Branch, Western Maryland/B&O connection, which crosses Waterview Avenue, Annapolis Road, Berlin Street, Hollins Ferry Road (2000 block). If connection of South Baltimore Branch to Western Maryland mainline is not made, volume at 2600 block of Hollins Ferry Road pertaining to Island Creek will be eight (8) trains per day.

[2]Train volumes given (6 per day at 15 million tons terminal volume, 12 per day at 30 million tons terminal volume) presume use of South Baltimore Branch, Western Maryland, and Western Maryland/B&O connection for some trains. At a 15 million ton terminal volume, two (2) trains per day are diverted to this alternative route. At a 30 million tons per year terminal volume four (4) trains per day are diverted. Should the South Baltimore Branch/Western Maryland mainline connection not be made, then the Marley Neck Terminal related trains crossing Hollins Ferry Road will total eight (8) per day at a 15 million ton level terminal or sixteen (16) per day at a 30 million ton level terminal.

[3]Presumes that the Marley Neck Terminal operates at 15 million ton annual throughput.

[4]Presumes that the Marley Neck Terminal operates at 30 million ton annual throughput.

[5]Train volumes given presume that the proposed connection of the South Baltimore Branch to the Western Maryland mainline is made. If it is not these trains will instead travel only on the Curtis Bay Branch, and will cross Hollins Ferry Road at the 2600 block.

TABLE III: COAL TRAIN IMPACT AT GRADE CROSSINGS WITHIN BALTIMORE CITY

STREET		DAILY IMPACT DUE TO TRAINS (hours'; minutes")						
		Existing (All Types)		Proposed (Only Coal)		Total		
Name	Type ADT	Move-ments	Delay	Movements	Delay	Move-ments	Delay	Increase In Delay
Boston Street	Principal Arterial	47±	2' 57"	8	51"	55	3' 48"	29%
	20,000+							
O'Donnell Street	Service Drive	47±	2' 57"	8	51"	55	3' 48"	29%
	3,000+							
Warner Street	Secondary	76	1' 45"	6	12"	82	1' 57"	11%
	1,500							
Ridgely Street	Secondary	76	1' 49"	6	12"	82	2' 01"	11%
	1,000							
Bayard Street	Secondary	76	1' 57"	6	12"	82	2' 09"	10%
	1,750							
Bush Street	Secondary	76	2' 19"	6	12"	82	2' 31"	9%
	1,500							

TABLE III: COAL TRAIN IMPACT AT GRADE CROSSINGS WITHIN BALTIMORE CITY

STREET		DAILY IMPACT DUE TO TRAINS (hours'; minutes")						
		Existing (All Types)		Proposed (Only Coal)		Total		
Name	Type ADT	Move-ments	Delay	Movements	Delay	Move-ments	Delay	Increase In Delay
Hollins Ferry Rd. (2200 block)	Secondary 6,100	27	45"	6	14"	33	59"	31%
Hollins Ferry Rd. (2600 block)	Secondary 6,100	17	1' 13"	13[1,2] (initial)	1' 12"	30	2' 25"	98%
				19[1,3] (ultimate)	1' 45"	36	2' 58"	143%
Hollins Ferry Rd. (2000 block)	Secondary	8	26"	3[2,4] (initial)	24"	11	50"	92%
				5[3,4] (ultimate)	40"	13	1' 6"	153%
Berlin Street	Collector-Distributor 750±	8	26"	3[2,4] (initial)	24"	11	50"	92%
				5[3,4] (ultimate)	40"	13	1' 6"	153%
Annapolis Road (2000 block)	Secondary 14,000	26	53"	same	-	-	-	0%
Annapolis Road (2100 block)	Secondary	16	51"	3[2,4] (initial)	24"	19	1' 15"	47%
				5[3,4] (ultimate)	40"	21	1' 31"	78%

TABLE III: COAL TRAIN IMPACT AT GRADE CROSSINGS WITHIN BALTIMORE CITY

STREET		DAILY IMPACT DUE TO TRAINS (hours'; minutes")						
		Existing (All Types)		Proposed (Only Coal)		Total		
Name	Type ADT	Move-ments	Delay	Movements	Delay	Move-ments	Delay	Increase In Delay
Kloman Street	Collector-Distributor	18	42"	$3^{2,4}$ (initial)	24"	21	1' 06"	57%
	1,000+			$5^{3,4}$ (ultimate)	40"	23	1' 22"	95%
Waterview Ave.	Secondary	18	42"	$3^{2,4}$ (initial)	24"	21	1' 06"	57%
	12,000			$5^{3,4}$ (ultimate)	40"	23	1' 22"	95%
Benhill Ave.	Collector-Distributor	10	20"	8^{2} (initial)	41"	18	1' 01"	205%
	1,000			16^{3} (ultimate)	1' 22"	26	1' 42"	410%
Pennington Ave.	Principal Arterial	10	42"	8^{2} (initial)	45"	18	1' 27"	107%
	19,000			16^{3} (ultimate)	1' 30"	26	2' 12"	214%
Quarantine Road	Secondary	4	17"	8^{2} (initial)	45"	12	1' 02"	265%
	1,000			16^{3} (ultimate)	1' 30"	20	1' 47"	529%
Old Hawkins Point Road	Secondary	4	8"	8^{2} (initial)	45"	12	53"	563%
	800			16^{3} (ultimate)	1' 30"	20	1' 38"	1125%

EXPLANATORY NOTES FOR TABLE III

[1]Figures given presume that some of the trains servicing Island Creek and Marley Neck are diverted to the South Baltimore Branch, Western Maryland mainline/B&O connection, which crosses Waterview Avenue, Kloman Street, Annapolis Road, Berlin Street and the 2000 block of Hollins Ferry Road. If the connection of the South Baltimore Branch and Western Maryland mainline is not made, train volumes will be higher than that given.

[2]Presumes Marley Neck Terminal has an annual throughput of 15 million tons.

[3]Presumes Marley Neck Terminal has an annual throughput of 30 million tons.

[4]Figures given presume that some of the trains servicing Island Creek and Marley Neck are diverted to the South Baltimore Branch, Western Maryland mainline/B&O connection, which crosses Waterview Avenue, Kloman Street, Annapolis Road, Berlin Street and the 2000 block of Hollins Ferry Road. If the connection of the South Baltimore Branch and Western Maryland mainline is not made, train volumes will be lower than that given. If connection is not made, trains will cross the 2600 block of Hollins Ferry Road.

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