Industrial Land Use Analysis,

City of Baltimore, Maryland

Executive Summary

Prepared for:

Baltimore Development Corporation

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Executive Summary

Baltimore's long-term economic health depends in part on its ability to attract, accommodate and retain industry. The city and regional economies were built upon the port and the manufacturers supported by the city's advantages as a hub of rail and water transport. Manufacturing and other industries that serve larger markets than just the city are critical economic engines. They bring new dollars to the local economy from the industrial customers that live beyond its borders. This gives these businesses an important "multiplier" effect – new jobs and income are created throughout the local economy by the wages they pay their employees and their purchases of materials and services. The long-term viability of industry in the city depends on having appropriate and competitive sites and conditions that allow industry to operate profitably.

Baltimore Development Corporation hired the Bay Area Economics' consulting team to:

- evaluate the existing supply of industrial land,
- estimate the future demand and need for industrial land,
- review the history of changes of use in the city,
- evaluate the fiscal implications of changes of use,
- identify policy tools,
- recommend an approach for deciding future changes of use, and
- test the proposed approach on specific areas and sites.

Pressures for Change from Industrial Use

In recent years, development on the water or with water views has played an important role in the city's economic vitality. As the demand for waterfront development has grown, residential and office users have reused historic multi-story industrial facilities no longer competitive for modern industrial use. Baltimore has taken advantage of its relatively unique assets of extensive waterfront and historic buildings to compete better with the suburbs for office and residential uses. However, that movement to reuse the waterfront for offices, hotels and residences has led to significant encroachment on formerly industrial areas. With increased demand from non-industrial uses, land and building prices have increased, in some cases pricing out industries that cannot afford to match the prices paid by office or residential developers. With that encroachment has come the fear and reality of complaining neighbors restricting industry's ability to operate. Industry, particularly heavy industry, needs the freedom to operate in a responsible and environmentally compliant way without worrying about nearby residents being disturbed by early-morning noises.

Increasingly, the City is being asked to change industrial zoning to allow individual parcels to be developed for other and more profitable uses.

Demand and Supply

Baltimore's industrial market has been stagnant or declining over the last few years due to employment cutbacks among some major manufacturers and movement to suburban sites. The city has not had marketable industrial sites that could compete successfully with suburban industrial and business parks. State economic development officials and area realtors and

developers report demand from companies that would have considered Baltimore if modern facilities and well-located sites were available.

The city has a relatively small inventory of competitive, available industrial buildings and development sites having more than 10 acres that are zoned for industrial use. In particular, there are few sites with good access to I-95/695, which is the primary focus of most new industrial activity in the region. Large, vacant sites with access to interstate, port, and rail are rare in a region that has significant advantages and demand for distribution and wholesale-related uses. Much of the available industrial building stock is functionally obsolete or otherwise non-competitive for the very wholesale and distribution uses for which the Baltimore region is competitive. The older buildings lack the ceiling heights, clear-span space, refrigeration, docking, and interstate access required by distribution operations. Modern facilities in quality business environments, such as Holabird Industrial Park, meet with good market response. Portions of the city could offer very competitive sites with clearance of blighted structures, upgraded infrastructure and development controls.

Construction in the city is also constrained by limitations on reuse of contaminated, brownfield sites. Because much of Baltimore's industrial land has been in industrial use for many years, it is constrained by real contamination and the perception that it might be contaminated. The successful redevelopment of the Esskay plant for Mid-Atlantic Baking and the Coca-Cola plant for Phillips are just two of many examples that cleaned up, well-located sites in the city are marketable for very positive industrial reuse.

Discussions with private port operators and users also indicate steady demand for deepwater sites for expansion of their own operations, for tenants being priced out of the Port of New York and New Jersey, which is very short of deepwater sites and for other international companies seeking to expand their U.S. operations. The Port Land Use Development Zone Master Plan (PLUDAC) background analysis identified potential need for 412 acres of public and private port-related demand by 2011 in Baltimore. One constraint on demand for deepwater sites in Baltimore is the perception by those considering port expansion that commercial and residential uses may be crowding out traditional port-related users. When making a 20-year commitment to a major capital facility, it is only prudent to want evidence that the facility will be allowed to operate without undue restrictions into the future. International companies watch encroachment and land conversion trends very closely in evaluating potential locations.

With modern buildings developed on competitive sites in the I-95 corridor, Baltimore could expect to attract up to 15 to 20 percent of the region's industrial activity or 30 to 40 acres per year. Relocation of existing industry to better-located modern facilities could increase that potential absorption while helping to retain jobs in the city. Achieving the city's potential will require aggressive public/private partnerships to clean up brownfield sites, assemble properties and create modern industrial parks. Without upgrading and redevelopment of key industrial properties, Baltimore's industrial demand will continue to lag behind other jurisdictions in the region with only 10 to 15 acres of annual demand.

The City's current strategy includes appropriate measures to increase the supply of marketable industrial sites. Land development initiatives include:

- **Carroll-Camden**: a strategy that combines revised urban renewal plan controls, selected acquisition/site assembly, and infrastructure/access improvements will upgrade an economically important and very marketable industrial area;

- **West Baltimore Industrial Tax Increment Financing (TIF) District:** use of a TIF to finance the acquisition/redevelopment of two strategic sections of West Baltimore: Rosemont and the Carroll-Camden/Warner Street corridor;

- **Fairfield:** an urban renewal plan that seeks to upgrade the public thoroughfares, assemble small parcels, and generally improve the appearance, hence the marketability, of the area; and

- **Hollander Ridge**: a good example of change-of-use appropriately going the other direction, i.e., that the City realized that the former public housing site was best used for job-producing industrial-commercial development.

Policy initiatives that are also geared to improving the City's capacity to redevelop industrial land include:

- **Brownfields**: The recently announced $1.2 million EPA grant will allow the City to expand brownfields incentives. A General Assembly-authorized Task Force is looking at ways to improve Maryland's Brownfields Voluntary Cleanup Program.

- **TIF Financing**: BDC is looking at ways to improve the authorizing legislation for TIFs, as well as other ways to creatively use TIFs to accelerate the City's efforts to upgrade and create marketable industrial land. (See W. Baltimore TIF, above.)

- **Eminent Domain Powers**: Through General Assembly action in 2002 and proposed City Council action (CCB 701), the City has broadened the circumstances under which eminent domain can be used for economic development.

As these projects move toward implementation, some of the regional demand will shift from suburban locations to locations in the city.

Current Industrial Zoning

The foundation of Baltimore City's industrial land use policy is the City's Zoning Code for Industrial Districts with three Industrial Districts. The M-1, M-2, and M-3 zoning categories are summarized in the following table. The Mayor and City Council approve specific land use regulations for particular industrial areas in Urban Renewal Plans and Ordinances.

City of Baltimore Industrial Zoning Categories *

Zoning	Intended Uses	Performance Standards	Conditional Uses	Excluded Uses	Other Requirements
M-1	Relatively nuisance-free industrial uses compatible with adjoining Business and Residential Districts.	Noise, vibration, smoke and particulate matter, toxic matter, odors and glare	Marinas, hotels and motels and offices	Restaurants and residential uses	Operations must be located in enclosed structures. 30 ft yard required beside R & O-R Districts
M-2	General industry but not as heavy as in M-3. Moderate nuisance characteristics. Allows all M-1 uses and restaurants without live entertainment.	None	Hotels and motels, offices and restaurants with live entertainment	Recreational marinas and residential uses	Enclosed or effectively screened within 200 ft. of R & O-R Districts. 20 ft yard beside R & O-R Districts.
M-3	Industrial, manufacturing and related activities described as "heavy" industry. Allows all M-1 and M-2 uses.	None	Hotels and motels, offices and restaurants with live entertainment	Recreational marinas and residential uses	Enclosed or effectively screened within 200 ft of R or O-R Districts. 10 ft yard beside R & O-R Districts.

* Some Industrial Urban Renewal Plans add additional standards and regulations.

Sources: Baltimore Zoning Code for Industrial Districts; Rachel Edds, 2002.

Recommended Zoning Strategies for Baltimore

The City's current industrial zoning categories do not accommodate the full range of development alternatives desired by users. The current code does not encourage the mixed-use development that is so attractive to office and technology users and appropriate for the reuse of historic structures. Protections for adjoining districts are often minimal, so many adjoining residential neighborhoods have little buffering from industrial uses. Although some individual Urban Renewal Plans set screening and landscape standards, and the M-1 Zoning District establishes performance standards controlling the environment, the basic Zoning Code for Industrial Districts does not incorporate the modern development standards and guidelines that industrial and business park developers use to ensure quality development and long-term compatibility among uses.

New Zoning Categories. We recommend adding four new zones to the City's zoning code to remedy weaknesses in the existing industrial zoning categories and to offer districts that better meet current development needs:

- **Industrial Park** – On properties of 20 acres or more, the industrial park zone would impose setbacks, design guidelines and performance standards to ensure quality development. Technology and support office uses should be allowed as conditional uses with limited FARs, but retail uses and gas stations should be excluded, except for specific types of support retail

services. Support offices should be allowed as a matter of right. The Holabird Business Park guidelines could serve as a model.

- **Urban Business** – To accommodate office and technology uses, an urban business zone should be developed, possibly using the Seton Business Park as a model. Design guidelines and performance standards should ensure a level of quality. Office and technology uses should be allowed as a matter-of-right. Retail uses should be excluded, except for specific types of support retail services.

- **Mixed Use** – For the Jones Falls Valley and reuse of other historic industrial properties, we recommend developing a new mixed-use zone that would allow a mix of office, light industrial and residential uses in the same building and/or property with performance standards.

- **Port-Compatible Development** – Large sites with deepwater access and key clusters of port-related businesses should be designated and protected for industrial and port-related activity. However, the City must also nurture Digital Harbor/technology/job-intensive uses of the waterfront. Policies should be geared to protecting the larger clusters of port-related users, and allowing some flexibility for case-by-case decision-making relative to smaller sites and sites that are not part of key clusters of port businesses.

Rezoning. The proliferation of M-3 zoning along rail lines throughout the city has resulted in an overabundance of heavy industrial land without the performance standards and use restrictions associated with M-1 zoning. This limits the options available to light-industrial businesses that want an attractive setting for their business and compatible neighbors. The City should consider a comprehensive rezoning of the city's industrial lands that would concentrate M-3 zoning in protected clusters of heavy industry in Canton, Fairfield, Hawkins Point, Curtis Bay, Carroll Camden, parts of the Locust Point shoreline and parts of Pulaski-Erdman.

Remaining industrial properties should be re-zoned to M-1 or one of the new industrial zoning categories as appropriate to the existing users and neighboring uses. If this option produces too many non-conforming uses, alternative means should be sought to lessen the impact of heavy industrial uses on nearby residential property. For example, controls can be added through the urban renewal plan process.

Approaches for High-Visibility Sites and Noxious Uses. Currently, unsightly heavy industrial uses are regulated by the Baltimore City Zoning Code of 1974 or by some individual Urban Renewal Plans. The Code contains mandatory industrial performance standards (noise, vibration, smoke, toxic matter, odor, and glare) for M-1 zoning districts. It provides use and bulk restrictions and yard setbacks for all industrial zoning districts. However, the Code lacks standards for buffering, landscaping and siting of uses. Only a few Urban Renewal Plans set such standards. Based on review of other jurisdictions' approaches, we propose a set of buffering and landscaping standards for uses associated with heavy industry on high-visibility sites or near residences. These standards deal with buffer yards, parking, storage areas, loading areas, fencing, service areas and refuse areas with specific recommendations for salvage and scrap yards and rock-crushing activities.

Individual Industrial Areas

Eight specific industrial areas in different parts of the city have been evaluated for their ability to compete for industrial users and future zoning recommended. The selection of these areas for

analysis was based on the pressures for changes in zoning to non-industrial uses. Other more stable industrial areas, such as Fairfield and Hawkins Point, were not singled out for focused analysis. It should be noted that intense community planning efforts are underway or planned for at least two of the areas below: Locust Point and the Westport section of Carroll-Camden. The recommendations in this study should be viewed as advisory to more intense community planning activities. Also note that more geographic-specific recommendations follow in the "Unstable Areas" analysis. Following is a summary of the zoning recommendations.

Industrial Area Zoning Recommendations

Area	Recommended Zoning
Canton	M-3 except for Mixed-Use for Brewer's Hill and Canton Crossing
Pulaski/Erdman	M-3 with M-1 near residences
Central Avenue	Commercial and residential
Locust Point	Port-compatible uses along the water, generally retain M-1 and M-3. Exceptions should be made through the application of the city-wide criteria for change-of-use.
Carroll Camden	Industrial or business park west of MD 295, office/residential mixed-use along Middle Branch waterfront
Shipley Hill	Residential or commercial except for M-3 at south end along rail and M-1 on U.S. 40
Northwest Corridor	Residential or commercial except for M-1 west of Reisterstown Road in Menlo Industrial Park between Northern Parkway and Patterson Avenue
Jones Falls Valley	Mixed-use for historic building reuse, M-1 east of the Expressway unless economics support mixed uses

Source: BAE Consultant Team, 2002.

Fiscal Impacts

The economic and fiscal impact analysis estimated the potential taxes generated by developing a site for general office, flex/office/R&D, manufacturing/heavy industrial; warehouse distribution, and big box retail uses. It shows that general office and big box retail are fiscally superior uses of the subject site in terms of direct tax benefits generated by the project. Flex/R&D follows as a close third and provides almost the same amount of annual tax revenues as big box retail. As a result of high employee density ratios and relatively high average employee wage earnings, general office significantly exceeds the other land-use alternatives in terms of tax dollars generated. Low employee density ratios and relatively low assessed property values result in warehouse distribution yielding the least amount of direct tax benefits for the City among the alternatives considered.

Even though big box retail ranked second among the five uses explored in terms of total annual tax dollars generated on the subject site (per 1.5 acre), its economic benefits are relatively limited.

While retail uses will typically hire a larger percentage of their workers from within the city, average wages are generally low. More importantly, the success of big box retail stores is sometimes at the expense of existing local merchants. As neighborhood retail declines due to big box retail competition, neighboring residential and commercial property values are oftentimes negatively impacted as well.

Employment and City Tax Revenues by Land Use, Fiscal Year 2002

Use Type	Number of Employees Total	Number of Employees City Residents	Income Taxes Balt. City*	Real Property Taxes	Personal Property Tax	Total Tax Revenue
General Office	102	25.5	$33,596	$41,299	$10,325	$85,220
Manufacturing/Heavy Industrial	21	8.4	$10,872	$11,966	$2,991	$25,829
Flex/Office/R&D	31	15.4	$16,261	$18,773	$4,693	$39,727
Distribution Warehouse	5	4.5	$3,906	$11,966	$2,991	$18,863
Big Box Retail	275	24.7 **	$13,860	$34,920	$8,730	$57,510

*Taxes based upon a 1.5-acre developable site.
**The total number of workers is 247 or 24.7 per 1.5 acre.

Source: Milestone Associates

Change-of-Use Decisions

Developing a comprehensive approach to change-of-use decisions is quite complex because of the multitude of goals and issues to be considered. Finding the appropriate balance among those goals will depend on the circumstances surrounding each decision, because no two projects are alike. Previous to this report, decision-making has not always been grounded in an overall policy that takes into account both City-wide objectives and economic trends.

The City/BDC key goals to be achieved in setting policies for industrial land use include:

- Provide well-paying jobs for city residents by maintaining an adequate supply of industrial land and encouraging full utilization of land and buildings for economic uses.
- Protect the long-term viability of industrial uses by protecting them from encroachment by incompatible uses.
- Encourage industrial investment and reinvestment by providing greater certainty as to the long-term protection of their right to operate.
- Provide for the growth of “Digital Harbor” technology-oriented businesses that may be attracted to waterfront or historic industrial buildings and sites.
- Maintain flexibility so that the city’s land use patterns can shift with changes in its economic structure.

- Generate additional tax revenues for the City.
- Reinforce viable residential and commercial districts by reducing land use conflicts.
- Avoid speculative land price increases that drive industry out of the city.
- Avoid diversion of office tenants from the Central Business District.
- Avoid undue competition with existing retail districts.
- Encourage clean up and reuse of environmentally contaminated properties.
- Streamline the process so that the approval and permitting process does not impede desirable development.

The BAE Consultant Team recommends the following guidelines for change-of-use decisions. As a general frame of reference, change-of-use proposals for office and technology uses, which are currently conditional in all M-zoned districts, should be regarded as relatively easier to justify, and proposals to change the use to residential or retail should be regarded as requiring more rigorous and conservative application of the criteria.

1. Retain as industrial sites those sites that can meet the needs of industry and can compete for users/tenants.

2. Reserve sites with deepwater access or close proximity to these sites for port and port-related businesses that require access or close proximity to piers serving ocean-going vessels.

3. Protect established concentrations of industrial space in areas with adequate infrastructure.

4. Allow conversion of marginal industrial land (e.g., small sites without good access, sites with adjacent or nearby residential uses, older multi-story buildings) unless nearby viable industries would be damaged by encroachment.

5. Allow conversion of multi-story, historic buildings without industrial reuse opportunities that are near residential and commercial areas. The new uses should exclude retail space except limited support retail serving primarily the on-site businesses or population. The new use should not result in burdensome zoning or regulatory restrictions on nearby viable industries, such as restricted operating hours or delivery times.

6. Allow conversion if a higher-intensity use is required to finance needed environmental remediation or other extraordinary expenses associated with out-moded industrial properties and buildings, but only if the new use would not result in burdensome zoning or regulatory restrictions on neighboring industries.

7. Allow conversion to mixed use if the intensity, investment levels and economic benefits of the new use far outweigh the alternative industrial use and if there is not a nearby concentration of viable industry that would be negatively affected by the new uses. The mixed use must include office and/or technology uses that will bring new higher paying jobs and income to the city, rather than retail uses. The new use should produce more jobs than the alternative industrial use.

Baltimore is faced with a number of choices regarding the conversion of industrially-zoned lands. Clear policy guidelines and systematic evaluation of the issues inherent in each change-of-use decision will form a better basis for decision-making than the more ad-hoc process. Guidelines

for change-of-use decisions should be codified to create greater predictability and to reduce land speculation that keeps some key industrial properties from being reused by industry. Clear commitment to protection of industrial land will send an important message to industry considering locating or expanding in the city.

It should be noted that intense community planning efforts are underway or planned for at least two of the areas below: Locust Point and the Westport section of Carroll-Camden. The recommendations in the study should be viewed as advisory to more intense community planning activities. The following summarizes the BAE Consultant Team's recommendations for twelve "unstable" areas and focus sites subject to pressure for change from industrial use.

"Unstable" Area Zoning Recommendations

Area	Recommended Zoning
Canton	Port-compatible uses south of Danville Avenue. Mixed-use for Brewer's Hill and Canton Crossing without undue restrictions on existing industry. Landscaping standards on Boston Street.
Fort Avenue Near Lawrence Street	M-1 zoning so as to protect nearby industry and truck access routes for other businesses using Fort Avenue. Allow office and select commercial uses through an industrial PUD, but not residential. Further exceptions should be made through the application of the city-wide criteria for change-of-use.
Chesapeake Paperboard Company Property	M-1 or M-2 zoning unless the cost of environmental cleanup and/or the cost of re-using outmoded buildings requires a higher land price. In that case, mixed-use, technology or office development but not retail or residential uses.
Key Highway Between Harborview and Amstar	Light industrial and port-compatible uses as long as Amstar operates or its site is used for industrial purposes. If Amstar ceases operations and existing buildings are suitable for mixed-use reuse and require more intensive use to cover renovation or cleanup costs, allow conversion of Amstar and adjacent properties.
Middle Branch Waterfront at Westport	Business or residential reuse of the now vacant Carr-Lowrey Glass plant and the BGE Westport plant.
Clipper Mill Industrial Park, Hooper Property and Sears/Hedwin Property	Mixed-use reuse of properties west of Jones Falls Expressway to allow office, light industrial and/or residential uses. East of the Expressway, conversion to higher-value mixed-use development if economics support the high costs of redevelopment in the flood plain. Otherwise, retain for industry or park land.
Hooper Property	If the current industrial use ceases operations, mixed-use reuse for office, light industrial and/or residential uses.
Falls Road North of the Streetcar Museum	Convert land in the Valley to park land. Retain the Sisson Street properties in industrial use with M-1 zoning.
Kane Street and Eastern Avenue at Lombard St.	Modern industrial park or urban business zoning. Retain in industrial use.
Anchor-Hocking Property	Modern industrial park or urban business zoning. Retain in industrial use.
Shipley Hill -- Frederick Ave. to Hollins St.	Rezone for residential use or park land. Encourage reuse of Eigenbrott Brewery Complex for commercial or residential use.
United Iron & Metal Property	Retain M-3 zoning with buffer and screening standards along Monument Street.

Source: BAE Consultant Team, 2002.

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services. Support offices should be allowed as a matter of right. The Holabird Business Park guidelines could serve as a model.

- **Urban Business** – To accommodate office and technology uses, an urban business zone should be developed, possibly using the Seton Business Park as a model. Design guidelines and performance standards should ensure a level of quality. Office and technology uses should be allowed as a matter-of-right. Retail uses should be excluded, except for specific types of support retail services.

- **Mixed Use** – For the Jones Falls Valley and reuse of other historic industrial properties, we recommend developing a new mixed-use zone that would allow a mix of office, light industrial and residential uses in the same building and/or property with performance standards.

- **Port-Compatible Development** – Large sites with deepwater access and key clusters of port-related businesses should be designated and protected for industrial and port-related activity. However, the City must also nurture Digital Harbor/technology/job-intensive uses of the waterfront. Policies should be geared to protecting the larger clusters of port-related users, and allowing some flexibility for case-by-case decision-making relative to smaller sites and sites that are not part of key clusters of port businesses.

Rezoning. The proliferation of M-3 zoning along rail lines throughout the city has resulted in an overabundance of heavy industrial land without the performance standards and use restrictions associated with M-1 zoning. This limits the options available to light-industrial businesses that want an attractive setting for their business and compatible neighbors. The City should consider a comprehensive rezoning of the city's industrial lands that would concentrate M-3 zoning in protected clusters of heavy industry in Canton, Fairfield, Hawkins Point, Curtis Bay, Carroll Camden, parts of the Locust Point shoreline and parts of Pulaski-Erdman.

Remaining industrial properties should be re-zoned to M-1 or one of the new industrial zoning categories as appropriate to the existing users and neighboring uses. If this option produces too many non-conforming uses, alternative means should be sought to lessen the impact of heavy industrial uses on nearby residential property. For example, controls can be added through the urban renewal plan process.

Approaches for High-Visibility Sites and Noxious Uses. Currently, unsightly heavy industrial uses are regulated by the Baltimore City Zoning Code of 1974 or by some individual Urban Renewal Plans. The Code contains mandatory industrial performance standards (noise, vibration, smoke, toxic matter, odor, and glare) for M-1 zoning districts. It provides use and bulk restrictions and yard setbacks for all industrial zoning districts. However, the Code lacks standards for buffering, landscaping and siting of uses. Only a few Urban Renewal Plans set such standards. Based on review of other jurisdictions' approaches, we propose a set of buffering and landscaping standards for uses associated with heavy industry on high-visibility sites or near residences. These standards deal with buffer yards, parking, storage areas, loading areas, fencing, service areas and refuse areas with specific recommendations for salvage and scrap yards and rock-crushing activities.

Individual Industrial Areas

Eight specific industrial areas in different parts of the city have been evaluated for their ability to compete for industrial users and future zoning recommended. The selection of these areas for

analysis was based on the pressures for changes in zoning to non-industrial uses. Other more stable industrial areas, such as Fairfield and Hawkins Point, were not singled out for focused analysis. It should be noted that intense community planning efforts are underway or planned for at least two of the areas below: Locust Point and the Westport section of Carroll-Camden. The recommendations in this study should be viewed as advisory to more intense community planning activities. Also note that more geographic-specific recommendations follow in the "Unstable Areas" analysis. Following is a summary of the zoning recommendations.

Industrial Area Zoning Recommendations

Area	Recommended Zoning
Canton	M-3 except for Mixed-Use for Brewer's Hill and Canton Crossing
Pulaski/Erdman	M-3 with M-1 near residences
Central Avenue	Commercial and residential
Locust Point	Port-compatible uses along the water, generally retain M-1 and M-3. Exceptions should be made through the application of the city-wide criteria for change-of-use.
Carroll Camden	Industrial or business park west of MD 295, office/residential mixed-use along Middle Branch waterfront
Shipley Hill	Residential or commercial except for M-3 at south end along rail and M-1 on U.S. 40
Northwest Corridor	Residential or commercial except for M-1 west of Reisterstown Road in Menlo Industrial Park between Northern Parkway and Patterson Avenue
Jones Falls Valley	Mixed-use for historic building reuse, M-1 east of the Expressway unless economics support mixed uses

Source: BAE Consultant Team, 2002.

Fiscal Impacts

The economic and fiscal impact analysis estimated the potential taxes generated by developing a site for general office, flex/office/R&D, manufacturing/heavy industrial; warehouse distribution, and big box retail uses. It shows that general office and big box retail are fiscally superior uses of the subject site in terms of direct tax benefits generated by the project. Flex/R&D follows as a close third and provides almost the same amount of annual tax revenues as big box retail. As a result of high employee density ratios and relatively high average employee wage earnings, general office significantly exceeds the other land-use alternatives in terms of tax dollars generated. Low employee density ratios and relatively low assessed property values result in warehouse distribution yielding the least amount of direct tax benefits for the City among the alternatives considered.

Even though big box retail ranked second among the five uses explored in terms of total annual tax dollars generated on the subject site (per 1.5 acre), its economic benefits are relatively limited.

While retail uses will typically hire a larger percentage of their workers from within the city, average wages are generally low. More importantly, the success of big box retail stores is sometimes at the expense of existing local merchants. As neighborhood retail declines due to big box retail competition, neighboring residential and commercial property values are oftentimes negatively impacted as well.

Employment and City Tax Revenues by Land Use, Fiscal Year 2002

Use Type	Number of Employees Total	Number of Employees City Residents	Income Taxes Balt. City*	Real Property Taxes	Personal Property Tax	Total Tax Revenue
General Office	102	25.5	$33,596	$41,299	$10,325	$85,220
Manufacturing/Heavy Industrial	21	8.4	$10,872	$11,966	$2,991	$25,829
Flex/Office/R&D	31	15.4	$16,261	$18,773	$4,693	$39,727
Distribution Warehouse	5	4.5	$3,906	$11,966	$2,991	$18,863
Big Box Retail	275	24.7 **	$13,860	$34,920	$8,730	$57,510

*Taxes based upon a 1.5-acre developable site.
**The total number of workers is 247 or 24.7 per 1.5 acre.

Source: Milestone Associates

Change-of-Use Decisions

Developing a comprehensive approach to change-of-use decisions is quite complex because of the multitude of goals and issues to be considered. Finding the appropriate balance among those goals will depend on the circumstances surrounding each decision, because no two projects are alike. Previous to this report, decision-making has not always been grounded in an overall policy that takes into account both City-wide objectives and economic trends.

The City/BDC key goals to be achieved in setting policies for industrial land use include:

- Provide well-paying jobs for city residents by maintaining an adequate supply of industrial land and encouraging full utilization of land and buildings for economic uses.
- Protect the long-term viability of industrial uses by protecting them from encroachment by incompatible uses.
- Encourage industrial investment and reinvestment by providing greater certainty as to the long-term protection of their right to operate.
- Provide for the growth of "Digital Harbor" technology-oriented businesses that may be attracted to waterfront or historic industrial buildings and sites.
- Maintain flexibility so that the city's land use patterns can shift with changes in its economic structure.

- Generate additional tax revenues for the City.
- Reinforce viable residential and commercial districts by reducing land use conflicts.
- Avoid speculative land price increases that drive industry out of the city.
- Avoid diversion of office tenants from the Central Business District.
- Avoid undue competition with existing retail districts.
- Encourage clean up and reuse of environmentally contaminated properties.
- Streamline the process so that the approval and permitting process does not impede desirable development.

The BAE Consultant Team recommends the following guidelines for change-of-use decisions. As a general frame of reference, change-of-use proposals for office and technology uses, which are currently conditional in all M-zoned districts, should be regarded as relatively easier to justify, and proposals to change the use to residential or retail should be regarded as requiring more rigorous and conservative application of the criteria.

1. Retain as industrial sites those sites that can meet the needs of industry and can compete for users/tenants.

2. Reserve sites with deepwater access or close proximity to these sites for port and port-related businesses that require access or close proximity to piers serving ocean-going vessels.

3. Protect established concentrations of industrial space in areas with adequate infrastructure.

4. Allow conversion of marginal industrial land (e.g., small sites without good access, sites with adjacent or nearby residential uses, older multi-story buildings) unless nearby viable industries would be damaged by encroachment.

5. Allow conversion of multi-story, historic buildings without industrial reuse opportunities that are near residential and commercial areas. The new uses should exclude retail space except limited support retail serving primarily the on-site businesses or population. The new use should not result in burdensome zoning or regulatory restrictions on nearby viable industries, such as restricted operating hours or delivery times.

6. Allow conversion if a higher-intensity use is required to finance needed environmental remediation or other extraordinary expenses associated with out-moded industrial properties and buildings, but only if the new use would not result in burdensome zoning or regulatory restrictions on neighboring industries.

7. Allow conversion to mixed use if the intensity, investment levels and economic benefits of the new use far outweigh the alternative industrial use and if there is not a nearby concentration of viable industry that would be negatively affected by the new uses. The mixed use must include office and/or technology uses that will bring new higher paying jobs and income to the city, rather than retail uses. The new use should produce more jobs than the alternative industrial use.

Baltimore is faced with a number of choices regarding the conversion of industrially-zoned lands. Clear policy guidelines and systematic evaluation of the issues inherent in each change-of-use decision will form a better basis for decision-making than the more ad-hoc process. Guidelines

for change-of-use decisions should be codified to create greater predictability and to reduce land speculation that keeps some key industrial properties from being reused by industry. Clear commitment to protection of industrial land will send an important message to industry considering locating or expanding in the city.

It should be noted that intense community planning efforts are underway or planned for at least two of the areas below: Locust Point and the Westport section of Carroll-Camden. The recommendations in the study should be viewed as advisory to more intense community planning activities. The following summarizes the BAE Consultant Team's recommendations for twelve "unstable" areas and focus sites subject to pressure for change from industrial use.

"Unstable" Area Zoning Recommendations

Area	Recommended Zoning
Canton	Port-compatible uses south of Danville Avenue. Mixed-use for Brewer's Hill and Canton Crossing without undue restrictions on existing industry. Landscaping standards on Boston Street.
Fort Avenue Near Lawrence Street	M-1 zoning so as to protect nearby industry and truck access routes for other businesses using Fort Avenue. Allow office and select commercial uses through an industrial PUD, but not residential. Further exceptions should be made through the application of the city-wide criteria for change-of-use.
Chesapeake Paperboard Company Property	M-1 or M-2 zoning unless the cost of environmental cleanup and/or the cost of re-using outmoded buildings requires a higher land price. In that case, mixed-use, technology or office development but not retail or residential uses.
Key Highway Between Harborview and Amstar	Light industrial and port-compatible uses as long as Amstar operates or its site is used for industrial purposes. If Amstar ceases operations and existing buildings are suitable for mixed-use reuse and require more intensive use to cover renovation or cleanup costs, allow conversion of Amstar and adjacent properties.
Middle Branch Waterfront at Westport	Business or residential reuse of the now vacant Carr-Lowrey Glass plant and the BGE Westport plant.
Clipper Mill Industrial Park, Hooper Property and Sears/Hedwin Property	Mixed-use reuse of properties west of Jones Falls Expressway to allow office, light industrial and/or residential uses. East of the Expressway, conversion to higher-value mixed-use development if economics support the high costs of redevelopment in the flood plain. Otherwise, retain for industry or park land.
Hooper Property	If the current industrial use ceases operations, mixed-use reuse for office, light industrial and/or residential uses.
Falls Road North of the Streetcar Museum	Convert land in the Valley to park land. Retain the Sisson Street properties in industrial use with M-1 zoning.
Kane Street and Eastern Avenue at Lombard St.	Modern industrial park or urban business zoning. Retain in industrial use.
Anchor-Hocking Property	Modern industrial park or urban business zoning. Retain in industrial use.
Shipley Hill -- Frederick Ave. to Hollins St.	Rezone for residential use or park land. Encourage reuse of Eigenbrott Brewery Complex for commercial or residential use.
United Iron & Metal Property	Retain M-3 zoning with buffer and screening standards along Monument Street.

Source: BAE Consultant Team, 2002.

I. Introduction

Baltimore's long-term economic health depends in part on its ability to attract, accommodate and retain industry. The city and regional economies were built upon the port and the manufacturers supported by the city's advantages as a hub of rail and water transport. Manufacturing and other industries that serve larger markets than just the city are critical economic engines. They bring new dollars to the local economy from the industrial customers that live beyond its borders. This gives these businesses an important "multiplier" effect – new jobs and income are created throughout the local economy by the wages they pay their employees and their purchases of materials and services.

The long-term viability of industry in the city depends on having appropriate and competitive sites and conditions that allow industry to operate profitably. This analysis evaluates the extent and nature of the city's supply of industrial land and its adequacy for meeting future demand for manufacturing, warehousing, distribution and technology uses.

Baltimore Development Corporation hired the Bay Area Economics' consulting team to:

- evaluate the existing supply of industrial land,
- estimate the future demand and need for industrial land,
- review the history of changes of use in the city,
- evaluate the fiscal implications of changes of use,
- identify policy tools,
- recommend an approach for deciding future changes of use, and
- test the proposed approach on specific areas and sites.

This analysis focuses on eight industrial districts, shown on the following map:

- Canton
- Pulaski/Erdman
- Central Avenue
- Locust Point
- Carroll Camden
- Shipley Hill
- Northwest Corridor
- Jones Falls Valley

Industrial Location Factors

When industrial firms choose a location, a number of factors enter into the decision. The relative importance of each factor then depends on the specific operations of the individual company. Competitive industrial sites that attract businesses typically offer:

- Accessibility – In some industries, direct access to a deepwater port is their primary locational decision factor. For most companies, though, their operations depend primarily on truck access, making easy access to the highway network their key concern. Rail access is also important for some businesses that ship heavy material inputs or finished products.

- Allowance for Operating Conditions – While many businesses operate without any external effects on neighboring properties, many need sites where nearby businesses or residents will not complain about truck traffic, noise, occasional odors, vibration and/or the unsightly nature of outdoor storage. They need assurance that their operations will not be unduly limited or that they will be forced to move in response to neighbors' complaints.
- Parcel Size – Modern industrial site standards call for parcels large enough to accommodate truck staging and maneuvering on site. With today's 18-wheel trucks, many older industrial sites are too small for efficient truck operations. The time spent jockeying the truck to serve the site is quite expensive and the accompanying street blockage is an irritant to employees, customers and neighbors.
- Utility Service – Heavy power or water users often have specific utility requirements that are best met in industrial districts where facilities are sized to meet that demand.
- Access to Labor Force – No business can operate without workers, so employee accessibility is a key factor. In recent years, that has tended to mean automobile access. However, for industries dependent on lower-wage workers, the availability of public transportation to the areas where these workers live is an important consideration.
- Access to Customers – For industrial service companies, access to customers is an important factor. This includes both individual consumers and industry customers.
- Cost – For most companies, controlling operating costs is a priority concern. Most are limited in what they can afford for total occupancy costs, including land, building and utility costs.
- Nearby Environment – Though industry is typically less demanding about the aesthetic quality of the surrounding area, some are concerned about the image they present to the world and all are concerned about providing a safe environment for their workers. Neighborhood crime rates are a consideration for many companies choosing a location.
- Proximity to Research Institutions – For technology-based industry, proximity to major research institutions can be a critical location factor. Ease of consultation with research faculty and access to graduate student labor are important to certain types of technology companies, particularly in the start-up phase.

The industries' specific building needs depend heavily on the nature of the business and its operations. However, most companies prefer modern industrial buildings on one story with:

- ample truck docks and clear-span construction for efficient movement of materials and product using forklifts,
- modern and preferably redundant sources of power and telecommunications service to minimize downtime,
- no environmental problems, and
- flexibility to expand in place.

Increasingly, distribution/warehouse companies are seeking warehouses with ceilings at least 28 feet high to allow for stacking and mechanical retrieval of goods.

The City of Baltimore has a large supply of industrial land, but much of it is in use or is impacted by conditions that make it less than competitive. Environmental contamination, small parcels, obsolescent buildings and incompatible neighboring uses are key constraints on much of the city's land supply.

Pressures for Change from Industrial Use

Clearly, the city's economic base is changing, as are those of the nation and the state. The manufacturing base has shrunk considerably with growing competition from foreign producers and shifts to less expensive domestic locations. Much of the nation's industrial base has shifted from traditional heavy industry to greater reliance on technology. The service industry (which is in fact many different industries ranging from health care to legal services to personal care to business services) has expanded rapidly to become the largest economic sector. With the increased importance of knowledge-based industry, the need for office space is outstripping demand for industrial facilities.

The proliferation of industrial and business parks throughout the surrounding suburban jurisdictions has greatly increased the pressure on the city to become more competitive.

In recent years, development on the water or with water views has played an important role in the city's economic vitality. The Inner Harbor development tapped the appeal of water as a setting for offices, hotels and residences, triggering important reinvestment. The appeal of the waterfront setting has spread the development into Inner Harbor East, Fells Point and Canton. As the demand for waterfront development has grown, residential and office users have reused historic multi-story industrial facilities no longer competitive for modern industrial use. Baltimore has taken advantage of its relatively unique assets of extensive waterfront and historic building stock to compete better with the suburbs for office and residential uses.

That movement to reuse the waterfront for offices, hotels and residences has led to significant encroachment on formerly industrial areas. With increased demand from non-industrial uses, land and building prices have increased, in some cases pricing out industries that cannot afford to match the prices paid by office or residential developers. With that encroachment has come the fear and reality of complaining neighbors restricting industry's ability to operate. Industry, particularly heavy industry, needs the freedom to operate in a responsible and environmentally compliant way without worrying about nearby residents being disturbed by early-morning noises.

Increasingly, the City is being asked to change industrial zoning to allow individual parcels to be developed for other and more profitable uses.

Current Industrial Land Use Policy

Industrial Zoning. The foundation of Baltimore City's industrial land use policy is the City's Zoning Code for Industrial Districts. Three Industrial Districts are established: M-1, M-2, and M-3.

According to the Code, the Industrial Districts are intended to:

- promote growth and stability of industrial and related development;
- strengthen the economic base of the City;
- provide the flexibility needed to meet the changing technological conditions that affect industry, its plants, and products;
- encourage the upgrading of industrial operations by the application of good housekeeping standards;
- protect the character of the district and its suitability for particular uses; and
- preserve and expand the City's tax base and employment potential.

In each district, the Code identifies permitted uses, conditional uses that require Zoning Board approval, conditional uses that require a City Council Ordinance, and accessory uses. The Code also specifies setback requirements and floor area ratios for buildings in the districts.

In all three Industrial Districts, residential development is prohibited. This exclusion is "to protect industrial development from the intrusion of non-industrial uses and to ensure the reservation of adequate areas for industrial development."

City of Baltimore Industrial Zoning Categories *

Zoning	Intended Uses	Performance Standards	Conditional Uses	Excluded Uses	Other Requirements
M-1	Relatively nuisance-free industrial uses compatible with adjoining Business and Residential Districts.	Noise, vibration, smoke and particulate matter, toxic matter, odors and glare	Marinas, hotels and motels and offices	Restaurants and residential uses	Operations must be located in enclosed structures. 30 ft yard required beside R & O-R Districts
M-2	General industry but not as heavy as in M-3. Moderate nuisance characteristics. Allows all M-1 uses and restaurants without live entertainment.	None	Hotels and motels, offices and restaurants with live entertainment	Recreational marinas and residential uses	Enclosed or effectively screened within 200 ft. of R & O-R Districts. 20 ft yard beside R & O-R Districts.
M-3	Industrial, manufacturing and related activities described as "heavy" industry. Allows all M-1 and M-2 uses.	None	Hotels and motels, offices and restaurants with live entertainment	Recreational marinas and residential uses	Enclosed or effectively screened within 200 ft of R or O-R Districts. 10 ft yard beside R & O-R Districts.

* Some Industrial Urban Renewal Plans add additional standards and regulations.

Sources: Baltimore Zoning Code for Industrial Districts; Rachel Edds, 2002.

Specific Industrial Area Land Use. The City has established specific land use regulations for particular industrial areas. These are established through Mayor and City Council approval and are called Urban Renewal Plans and Ordinances.

Initially, in the 1960's and 1970's such plans were used to implement City development of industrial parks such as the Crossroads Industrial Park, Holabird Industrial, Park Circle Industrial Park, and the Seton Business Park. These plans authorized property acquisition and set standards for the industrial development.

Later such plans were used to establish special regulations and standards for privately owned industrial areas. In 1987 and 1990, the Key Highway Industrial Area Plan and the Canton Industrial Area Plan were enacted specifically to protect industrial areas from encroachment of non-industrial waterfront redevelopment and from speculation of future redevelopment. These two plans drew boundaries for the redevelopment of waterfront land stretching east and south from the Inner Harbor. In these two plans, marinas, restaurants with live entertainment, and hotels and motels are prohibited. Offices are required to be ones that directly engage in or

support industrial, port or marine activities. Restaurants are made conditional uses requiring Zoning Board approval.

Recent industrial area plans prepared by the City for Carroll Camden and proposed in Fairfield set standards and authorize acquisition to support conversion of the areas to modern industrial parks.

Following are descriptions of these area industrial plans.

Canton Industrial Area Urban Renewal Plan, Enacted June 20, 1990. As described above, the objective of this plan is to:

- Maintain the Canton Industrial Area as an industrial and port-related employment area and protect it from the influence of speculation and incompatible uses.
- Encourage re-use of waterfront parcels for non-residential and non-commercial development that is compatible with adjacent industrial and residential areas.
- Encourage the redevelopment of unused or underutilized parcels for intensive industrial uses that provide job and tax benefits.
- Promote compatibility between the industrial area and the needs of nearby residential communities.
- Improve the visual appearance of the industrial area - especially the Boston Street corridor, which is a primary gateway to both the industrial area and the city as a whole.

As its primary means of achieving its objectives, the plan prohibited or restricted marinas, restaurant, hotels and motels, and office uses in the area. It also established design controls for the Boston Street Corridor.

Carroll Camden Master Plan and Carroll Camden Urban Renewal Plan, Enacted March 6, 2002. The Carroll Camden Master Plan recommends "a diversification of its land use from a predominance of heavy industry to ...a high tech, light manufacturing, office, linked services, and transit-oriented development." High tech, e-commerce, warehouse distribution, and light industry are encouraged, while support for the growth and viability of existing industry is recommended. The renewal plan establishes several industrial districts within the area's boundaries. One of the districts allows general M-1 uses. Another district excludes most of the M-3 heavy industry uses. Still another district most M-3 uses. Automobile service stations are allowed in the "heavier" land use districts. Restaurants and taverns with live entertainment are prohibited in two districts, but made conditional on Zoning Board approval in another. Office use is not mentioned, so it presumably remains conditional in all the industrial districts.

Seven disposition lots are identified for redevelopment. Redevelopment is specified for mixed uses including combinations of industrial, office, ancillary retail, commercial, parking or public open space. Extensive design and rehabilitation standards are included.

Fairfield Urban Renewal Plan. Objectives and goals of the Fairfield Urban Renewal Plan ordinance as introduced in City Council include the following:

- Promote environmentally responsible industrial development in the Project Area and provide employment opportunities for city residents.
- Facilitate redevelopment of vacant or underutilized land for industrial and business use.

- Remove blighting influences or uses, and discourage development in substantial non-compliance with the provisions of this Plan.
- Establish a positive and identifiable image for the Project Area to encourage private investment and to protect and ensure the stability of property values.

The intent of the plan is to "maintain and enhance the peninsula as an industrial and port-related employment area and to protect it from the influences of non-industrial and incompatible uses." The Plan designates two subareas, each for heavy industrial uses. The first area's permitted uses are M-2 uses with certain exclusions including taverns and hotels and motels. The second area's permitted uses are M-3 uses, all exclusions listed in the first category, and a few additional ones (abattoirs, arsenals, explosives manufacturing and storage, and auto dismantling and scrapping).

Acquisition of seven disposition lots, primarily along Chesapeake Avenue, is authorized for redevelopment for industrial/light manufacturing/office use.
General regulations require that control of fugitive particulate matter emissions be a condition of any area building and occupancy permit issuance. An environmental ethics policy is articulated in the plan. It emphasizes and defines environmental achievement, leadership, management, community outreach and commitment.

Other Land Use Policies

*Harbor Master Plan***.** The Baltimore City Planning Commission establishes rules and policies for recreational boating along Baltimore's shoreline. The Plan designates areas where recreational marinas may be located and specifies the design and support parking required for these marinas. An initial Plan, called the Marina Master Plan, was adopted in 1985. An extensive update of this plan was adopted in 1989. An update of that plan is now being prepared. This plan added definitions to distinguish among different types of boating facilities, provided maps to identify designated marina locations, protected shipping channels and view corridors, strengthened parking requirements, and incorporated environmental requirements to mitigate pollution from boat traffic and wastes.

An extensive update of the Marina Master Plan, to be called the Maritime Master Plan to reflect its expanded scope, has been developed by the Planning Department with the guidance of a Technical Advisory Committee. The plan recommends approval of four new marinas – at Canton Crossing in Canton, Ritz Carlton on Key Highway, Union Wharf in Fell Point and Port Covington. It denies requests for new marinas at Tide Point in Locust Point and the Museum of Industry on Key Highway, and conversion of the Tidewater Marina in Locust Point to recreational use. The draft also recommends preserving the existing Canton Industrial Protection Zones, site guidelines for kayak and canoe use in the harbor, and the consolidation of water taxi service to one purveyor.

Critical Area Master Plan. Maryland's Chesapeake Bay Critical Area Act establishes regulations to protect and improve shoreline habitat and tidal waters of the Chesapeake Bay. Every state jurisdiction with Chesapeake shoreline is required to prepare and implement a Critical Area Management Plan (CAMP) for these areas. Baltimore's Critical Area Plan was first established in 1988 and has just completed an update. The Plan applies to all land within 1,000 feet of the shore, and therefore establishes further regulation of Baltimore's waterfront industrial land. Baltimore's CAMP classifies shore land in two categories: Intensely Developed Areas and Resource Conservation Areas. The majority of Baltimore's shoreline is classified Intensely Developed. Intensely Developed Areas are further broken down into two classifications:

Waterfront Redevelopment Areas and Waterfront Industrial Areas. The division between Waterfront Redevelopment and Waterfront Industrial Areas corresponds with the areas the City has approved for non-industrial redevelopment and those it has protected for industrial use. Within each area, the Plan limits the amount of new building that can take place and sets standards for new development about runoff pollution reduction, placement of structures and landscaping.

II. Industrial Land Demand

Traditionally, the demand for industrial land has been closely linked to growth in employment. As companies grew and industries developed, they required additional land and facilities. Now, even in times of declining manufacturing employment, companies continue to require new industrial facilities to replace outmoded facilities or to accommodate expansion or changes in technology. The demand for industrial land and buildings now requires analysis of both employment changes and absorption trends. This section evaluates the employment changes in economic sectors that typically require industrial facilities, tracks the absorption of industrial facilities and land in recent years, draws on inputs from brokers and developers actively involved in the industrial market, and evaluates the specific demand for port-related industrial sites.

Employment Trends

Manufacturing employment has been declining nationally and within the Baltimore region for several decades. Foreign competition, coupled with emerging technologies and increasing mechanization, have gradually reduced the labor requirements of American manufacturing industries. At the same time, heightened environmental regulation has pressured companies to seek alternatives to polluting processes. Baltimore's labor-intensive heavy manufacturing and chemical industries have been in long-term decline due to a combination of all of these factors. The decline of Baltimore as a manufacturing center has impacted the city's markets and has had a ripple effect on its other industries.

Maryland and Baltimore. As shown in Appendix Table A-1, Maryland lost 41,100 or 20.7 percent of its manufacturing jobs between 1990 and 2002. This contrasts with growth of 13.9 percent overall in the state's employment during the 12-year period. Most of the state's employment growth has been concentrated in the services sector.

Within the Baltimore Metropolitan Statistical Area (MSA), employment increased by 8.4 percent from 1990 to 2002. However, the region's manufacturing base declined by 32.5 percent, or 41,300 jobs during the 12-year period. Services and government were important growth sectors in the metropolitan area, as they were in the state as a whole. Interestingly, the metropolitan area had a stagnant financial sector job base, according to State employment data. These data are summarized in Appendix Table A-2.

The decline in manufacturing in Baltimore was even more pronounced than it was in the MSA and the state. Between 1990 and 2002, the city's manufacturing sector lost 18,500 jobs, from a total of 41,500 in 1990 to about 23,000 in 2002. This loss represents a decline of 44.6 percent in 12 years.

Unlike the MSA or the state, however, almost all of the city's economic sectors declined during the 1990-2002 period. Retail trade employment declined by 47.3 percent, followed by declines in financial activities (38.3 percent), transportation, warehousing and utilities (38.3 percent), and construction (32.6 percent). Services employment increased 7.0 percent, a relatively slow growth rate in comparison to the growth in services regionally and nationally during this same period. Overall, Baltimore employment decreased by 16.2 percent or by almost 75,000 jobs. These data are based on information from the State's Department of Labor, Licensing, and Regulation and are summarized in the following table.

Table 1: Employment by Industry Sector, Baltimore City, 1990-2002

Sector	1990	2000	2002	1990-2002 Change Number	Percent
Services	173,900	188,900	186,100	12,200	7.0%
Retail Trade	38,500	25,600	20,300	(18,200)	-47.3%
Government	91,900	85,600	83,100	(8,800)	-9.6%
Manufacturing	41,500	26,900	23,000	(18,500)	-44.6%
Wholesale Trade	21,600	13,300	13,100	(8,500)	-39.4%
Construction	17,500	13,000	11,800	(5,700)	-32.6%
TWU*	20,900	14,300	12,900	(8,000)	-38.3%
Financial Activities	45,500	31,500	29,000	(16,500)	-36.3%
Information, Telecommunications	10,200	9,400	7,500	(2,700)	-26.5%
Total	**461,500**	**408,500**	**386,800**	**(74,700)**	-16.2%

Note: *Transportation, warehousing and utilities.

Sources: Maryland Department of Labor, Licensing and Regulation; Randall Gross / Development Economics; BAE, 2003.

Focusing on industrial employment (defined as manufacturing, wholesale trade and transportation, warehousing and utilities), Baltimore's trends suggest a steady overall decline in Baltimore's industrial base during the 1990s and early 2000s. (See Table 2.) Industrial employment declined 41.7 percent from 1990 to 2002. Baltimore had 49,000 industrial jobs in 2002.

Wholesale trade employment increased 3.6 percent in the metropolitan are while transportation, warehousing and utilities grew 1.0 percent between 1990 and 2002. This is an indication of the Baltimore region's relative strengths as a wholesale and distribution location, especially for companies distributing to Philadelphia, Baltimore, and Washington. Much of the region's new industrial development has clustered around areas in the Baltimore-Washington Corridor with good access to I-95 and I-695.

Centrally located in the urban corridor that now stretches from the Carolinas to Maine, and within two days of two-thirds of the U.S. market, Baltimore will continue to serve as an important distribution and transfer point. This advantage is further demonstrated by the significant growth in air traffic through Baltimore-Washington International Airport (BWI) during the past decade. The combination of excellent port, airport, rail, and major interstate access continues to make the Baltimore region a key multi-modal transportation center.

Table 2: Industrial Employment Trends, Baltimore City, 1990-2002

Year	Manufacturing	Wholesale Trade	TWU*	Total
1990	41,500	21,600	20,900	84,000
1991	38,000	20,600	17,300	75,900
1992	36,700	19,300	16,700	72,700
1993	35,600	17,500	15,400	68,500
1994	33,700	16,800	14,800	65,300
1995	32,500	16,400	15,200	64,100
1996	31,900	16,000	14,200	62,100
1997	30,700	15,600	13,900	60,200
1998	28,900	14,700	13,600	57,200
1999	28,100	14,200	13,800	56,100
2000	26,900	13,300	14,300	54,500
2001	24,600	14,200	13,900	52,700
2002	23,000	13,100	12,900	49,000

Note: *Transportation, warehousing and utilities.

Sources: Maryland Department of Labor, Licensing and Regulation; Randall Gross / Development Economics; BAE, 2003.

Manufacturing Industries. Baltimore has long been a center for shipbuilding, chemical production, food, and metals industries. Even today, these industries dominate the city's manufacturing base. Unfortunately, three of the four (with the exception of food) are heavily impacted by foreign competition and environmental regulation. Available NAICS data from 1998 and 2001 illustrate a short-term trend in some of these industries, although it would be difficult to draw conclusions about the long-term health of these industries from such limited data.

Chemicals still represent the largest manufacturing industry in the city with about 4,400 jobs and 18.3 percent of all manufacturing employment in 2001. The local chemical industry lost almost 450 jobs in the three years between 1998 and 2001, representing about 9.2 percent of the industry's employment base in the city.

Baltimore is still a food production center with almost 3,800 jobs in this industry in 2001, representing 15.6 percent of the city's manufacturing base. However, the city lost about 300 food industry jobs between 1998 and 2001 for a 7.5-percent decrease in three years. Printing is still an important industry in the city with 2,600 jobs or 10.6 percent of the manufacturing base. Unlike the other major industries, printing (including newspaper printing) is a relatively stable employer in the city, impacted less by competition than by changes in the local market base and technology. Transportation equipment (including shipbuilding) was the city's fourth largest manufacturing industry in 2001 with 2,000 jobs or 8.4 percent of the manufacturing base. This industry declined by 46 percent (1,709 jobs) in just three years, between 1998 and 2001.

There have been only a handful of growing manufacturing industries in the city, led by beverage manufacturers (141 new jobs or a 28-percent increase in three years). Textile manufacturing has also gained some jobs, though the exact number is not known due to data inadequacies. Textiles is an industry hard hit by foreign competition on wages, but seems to be slowly bouncing back in Baltimore. Textile employment is spread out among about 20 companies, including fabric finishing mills, curtain mills, and other textile product producers. There has also been some nominal growth in plastics manufacturing in the city, with an increase of about 115 jobs in the three-year period from 1998 to 2001. The distribution of jobs and short-term trends by industry are shown in the following table, drawn from 1998 and 2001 NAICS data.

Table 3: Employment Trends by Manufacturing Industry, Baltimore City, 1998-2001

			1998-2001 Change		2001
Industry	**1998**	**2001**	**Number**	**Percent**	**Share**
Food	4,078	3,771	(307)	-7.5%	15.6%
Beverage	494	635	141	28.5%	2.6%
Textiles	584	725	141	24.1%	3.0%
Apparel	1,872	583	(1,289)	-68.9%	2.4%
Leather	60	60	-	0.0%	0.2%
Wood	196	184	(12)	-6.1%	0.8%
Paper	1,319	1,164	(155)	-11.8%	4.8%
Printing	2,617	2,566	(51)	-1.9%	10.6%
Petroleum	175	322	147	84.0%	1.3%
Chemicals	4,884	4,437	(447)	-9.2%	18.3%
Plastics/Rubber	1,894	2,009	115	6.1%	8.3%
Nonmetallic Minerals	1,305	1,099	(206)	-15.8%	4.5%
Primary Metals	375	175	(200)	-53.3%	0.7%
Fabricated Metal	2,406	2,234	(172)	-7.1%	9.2%
Machinery	550	373	(177)	-32.2%	1.5%
Computer/Electronic	404	185	(219)	-54.2%	0.8%
Electrical	90	60	(30)	-33.3%	0.2%
Transportation Equip.	3,750	2,023	(1,727)	-46.1%	8.4%
Furniture	870	694	(176)	-20.2%	2.9%
Misc. Mfg.	1,071	944	(127)	-11.9%	3.9%
Total Manufacturing	28,825	24,185	(4,640)	-16.1%	100.0%

Note: 1998 and/or 2001 employment for textiles, leather, petroleum, primary metals, computers/ electronics and transportation equipment are averages of Census employment ranges.

Sources: U.S. Bureau of the Census (NAICS); Randall Gross / Development Economics; BAE, 2003.

Mechanization, wage competition, and free-trade agreements have had the most dramatic impact on apparel manufacturing, both nationally and locally. As shown in Table 3, apparel employment declined by 1,200 (almost 65 percent) within the very short period from 1998 to 2000. This rapid

decline in employment is indicative of the nationwide shift away from labor-intensive apparel manufacturing in this country, particularly in favor of Mexico in the wake of the North American Free Trade Agreement (NAFTA). Baltimore's competitiveness for this industry has been reduced significantly as a result of NAFTA and these other factors.

Industrial Investment Trends

Despite the overall net decline in Baltimore's industrial employment base, there is always expansion or relocation of some companies to the market. Baltimore Development Corporation has tracked industrial investment in the city since 1997. The BDC investment inventory suggests that 107 industrial companies expanded or relocated in the city between 1997 and 2000. During that period, these companies invested over $190.7 million in new or upgraded industrial facilities with a total of 5.4 million square feet of space. The businesses accounted for 6,065 jobs, of which 1,400 were new jobs for Baltimore.

During this period, the largest industrial facilities improved, expanded, or built included:

- 465,000 square-foot truck maintenance facility (Chesapeake Fleet Maintenance)
- 307,000 square-foot automotive processing facility (American Port Services, Inc.)
- 305,000 square-foot manufacturing facility (Picorp, Inc.)
- 209,000 square-foot warehouse (C. Steinweg, Inc.)
- 290,000 square-foot petroleum facility (Quaker State)
- 200,000 square-foot port-related use (ATC Logistics)
- 180,000 square-foot clothing manufacturing facility (SourceOne, LLC)
- 160,000 square-foot manufacturing facility (Atco Rubber)
- 150,000 square-foot ship repair facility (General Ship Repair Corporation).

Importantly, many of the city's largest recent industrial investments are in transportation, warehousing, and other distribution-related concerns.

Industrial Land & Space Supply

The Baltimore metropolitan market has a total inventory of 168,867,000 square feet of industrial space based on inventories compiled by CoStar Realty Information. Of this total, 133,052,000 square feet (79 percent) are bulk and office/warehouse, and 35,815,000 square feet (21 percent) are flex space. Flex space is multi-tenant warehouse/shell space that has a front office component built out to the individual tenant's requirements. In general, flex space has a 20-percent office component.

Baltimore City has 41,780,000 square feet or 25 percent of the metro area's industrial space. About 90 percent (37,562,000 square feet) of the city's industrial inventory is in bulk and office/warehouse space. Only 10 percent (4,218,000 square feet) of the city's industrial inventory is in flex space. As a result, the city has a higher share of the region's bulk space (28 percent) and a relatively small share of its flex space (12 percent). This phenomenon reflects, in part, the built-up nature of the city, limiting the availability of developable sites during the 1980s and 1990s when most of the region's flex space was constructed. Modern facilities and competitive sites offered at industrial prices met with good demand.

Table 4: Industrial Space Inventory, Baltimore City and Region, 2002

Space Type	Baltimore City	Metropolitan Area	City Share of Metro Area
Bulk and Office/Warehouse	37,562,000	133,052,000	28.2%
Flex	4,218,000	35,815,000	11.8%
Total	**41,780,000**	**168,867,000**	**24.7%**

Source: CoStar Realty Information, Inc.; Woodley Appraisal Group, 2002.

The city has a relatively small inventory of competitive, available industrial buildings and industrially-zoned development sites of 10 or more acres. In particular, there are few sites with good access to I-95/695, which is the primary focus of most new industrial activity in the region. Large, vacant sites with access to interstate, port, and rail are rare in a region that has significant advantages and demand for distribution and wholesale-related uses. Much of the available industrial building stock is functionally obsolete or otherwise non-competitive for the very wholesale and distribution uses for which the Baltimore region is competitive. The older buildings lack the ceiling heights, clear-span space, refrigeration, docking, and interstate access required by distribution operations. The city's older facilities do have cranes, rail access, and infrastructure that are attractive to a few heavy manufacturing users. As a result of all of these factors, Baltimore's industrial demand is driven more by production than by the distribution activity that dominates its neighbors' markets.

Construction in the city was also constrained by limitations on reuse of contaminated, brownfield sites. Because much of Baltimore's industrial land has been in industrial use for many years, it is constrained by real contamination and the perception that it might be contaminated. With the development of new legislation, programs and insurance products to protect new owners of a property contaminated by earlier users, this constraint is not as severe as it was from the 1980s through the mid-1990s. The successful redevelopment of the Esskay plant for Mid-Atlantic Baking and the Coca-Cola plant for Phillips are just two of many examples that cleaned up, well-located sites in the City are marketable for very positive industrial re-use.

The surrounding counties, which include Anne Arundel, Baltimore, Carroll, Harford and Howard, have a total of 127,087,000 square feet of industrial space. A much higher share of the suburban counties' industrial supply is in flex space, with 31,597,000 square feet of flex representing 25 percent of the suburban supply. Flex tenants include the smaller wholesale, industrial service, and distribution companies serving the Baltimore-Washington region. The remaining 75 percent (95,490,000 square feet) is in bulk and office/warehouse buildings accommodating larger distribution operations.

Construction Trends. An average of 2,440,000 square feet of new industrial space (on approximately 187 acres) had been constructed in the Baltimore metropolitan area each year over a five-year period until last year, when 3,900,000 square feet of new industrial space were built in the market. Construction trends for the last three years are summarized below.

Table 5: Industrial Construction and Land Absorption, Baltimore Metropolitan Area, 1999-2001

	Square Footage		
	1999	**2000**	**2001**
Type of Space			
Bulk	1,875,000	750,000	2,400,000
Office/Warehouse	200,000	400,000	500,000
Flex	475,000	250,000	1,000,000
Total	**2,550,000**	**1,400,000**	**3,900,000**

	Acreage			1999-2001	
	1999	**2000**	**2001**	**Acres/Year**	**Percent Distribution**
Type of Space					
Bulk	143	57	184	128	64%
Office/Warehouse	15	31	38	28	14%
Flex	36	19	76	44	22%
Total	194	107	298	200	100%

Sources: CoStar Realty Information, Inc.; Woodley Appraisal Group, 2002.

Over the past three years, almost two-thirds of the new construction has been in bulk space, with more than 5.0 million square feet of bulk space built out of a total 7.8 million square feet of industrial construction. About 1.7 million square feet of flex space was built, followed by 1.1 million square feet of office/warehouse space. CoStar did not add any new industrial buildings to its inventory in Baltimore City between 1999 and 2001.

Industrial Demand Factors

Absorption Trends. Given the declining job counts in manufacturing and wholesale trade, absorption of industrial space in Baltimore reflects "transfer" demand primarily. Thus, demand for local industrial space is generated primarily as existing companies relocate into larger, more modern, or more efficient buildings.

The region's absorption pace averaged about 2.6 million square feet per year from 1999 through 2001 but has not kept up with the recent growth in supply. As a result, industrial vacancies saw the largest single-year increase since 1993. Rents contracted in response to uncertainty in the market. That uncertainty was heightened by national events, including a continuing manufacturing recession, the events of September 11, and the last stages of deflation in the dot-com and telecom bubbles. Recent accounting scandals on Wall Street and the current market sell-off have contributed even more to business uncertainty in general.

Within the City of Baltimore, net absorption has averaged about 40,000 square feet per year. Absorption for bulk and office/warehouse space over the last 15 quarters was 524,000 square feet for an average of 140,000 square feet per year. At a 30-percent coverage rate, this equates to a demand for about 10 acres per year. Over the past 3.5 years, flex space in the city has had a net *loss* of 99,000 square feet.

Absorption in suburban Baltimore counties has averaged about 2.8 million square feet per year. Bulk & office/warehouse absorption has averaged 1,906,000 square feet or about 146 acres per year, while absorption of flex space has averaged 885,000 square feet or about 68 acres per year.

Vacancy and Rents. Bulk and office/warehouse in the city currently has a vacancy rate of 16.0 percent, up from 13.5 percent at the end of the 3rd quarter of 2000. The average rental rate stands at $3.97 per square foot, which is down from a high of $4.60 per square foot in the 2nd quarter of 2001. The city's flex vacancy rate is 14.2 percent, up from a low of 9.3 percent in the 1st quarter of 2001. Average rent stands at $10.26 per square foot, down from a high of $11.01 per square foot at the end of 2001.

By comparison, suburban bulk and office/warehouse space has a vacancy rate of 14.9 percent and an average rental rate of $5.66 per square foot. Suburban flex has a 12.5-percent vacancy and an average rental rate of $10.89 per square foot.

The lower average rents achieved in the city reflect the age and condition of many of the existing facilities which are no longer competitive with newer developments in suburban industrial parks. A large share of the city's inventory lacks the high ceilings, clear spans, multiple truck-level docks and other features sought by businesses today. Modern, well-located industrial buildings in the city with I-95 access enjoy rents comparable to those in the suburbs.

Baltimore's supply of industrial and flex space has remained constant over the past 3 1/2 years with CoStar reporting no new additions to supply from 1999 through June 2002. Shown in Table 6, the city's base of 36.3 million square feet of industrial space includes 5.8 million square feet of vacant space for an overall vacancy rate of 15.9 percent. Since 1999, industrial space occupancy has shifted geographically in the city. Overall, the city absorbed a net of only 27,000 square feet of industrial space during the 3½ years.

Of the five city submarkets defined by CoStar and shown on the following map, Southwest Baltimore experienced the strongest absorption with occupied space increasing by 487,000 square feet as the vacancy rate fell from 20.2 to 16.0 percent.

Occupancies in Northeast and Northwest Baltimore fell significantly during the same period. In Northeast Baltimore, 355,000 square feet of industrial space was vacated, increasing the vacancy rate from 16.4 percent to 26.3 percent. Northwest Baltimore lost 304,000 square feet of industrial tenants, boosting vacancy rates from 7.3 percent to 14.4 percent.

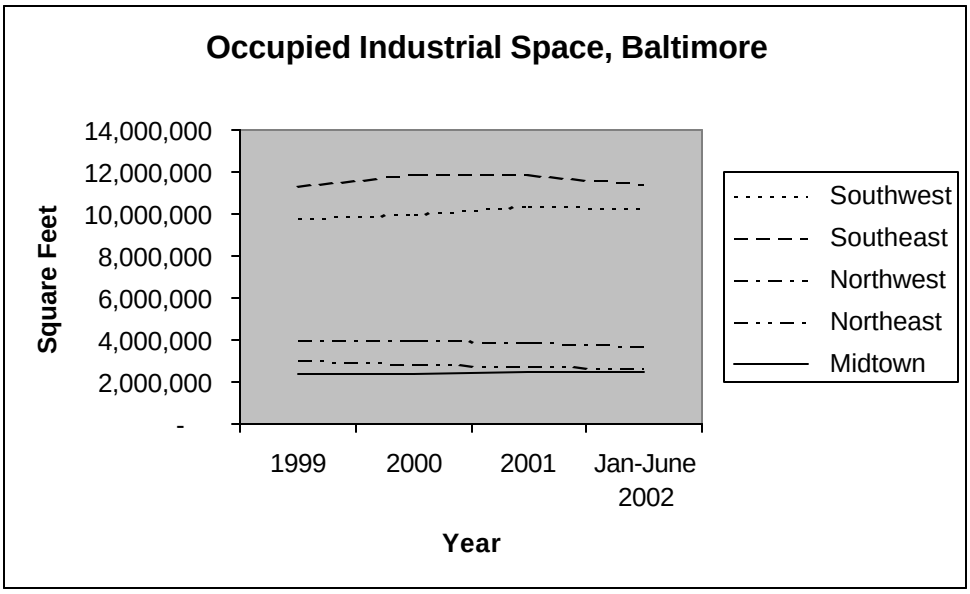
Following a large increase in occupied space in 2000, Southeast Baltimore lost some ground in 2001 and the first half of 2002. Overall, the quadrant attracted a net increase of 105,000 square feet, reducing vacancies from 14.9 percent to 14.1 percent in June 2002.

Midtown, the city's smallest industrial market, achieved modest increases in occupancy with absorption of 39,000 square feet of vacant space. That performance dropped its vacancy rate from 13.8 percent in 1999 to 12.4 percent in June 2002.

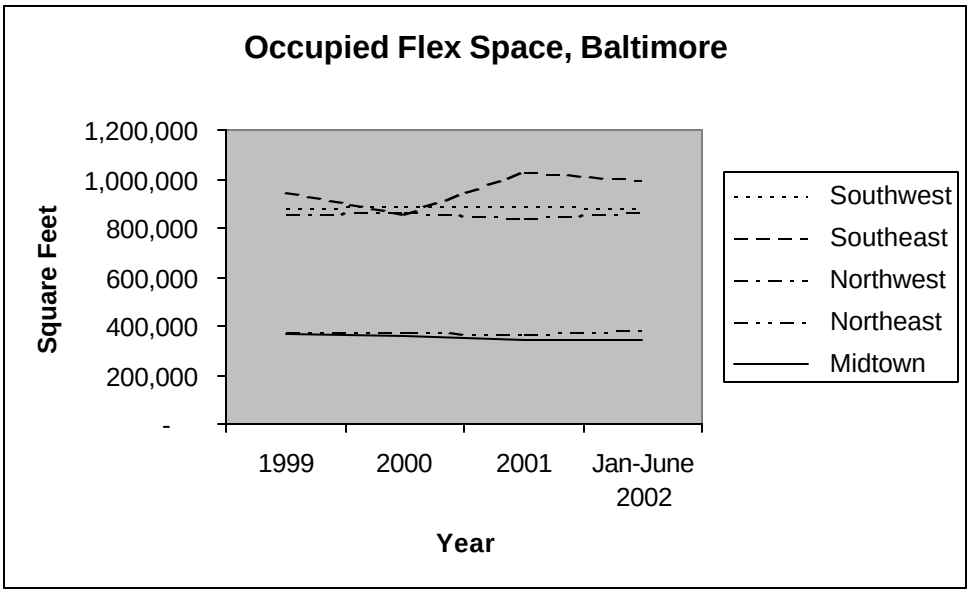
Table 6: Baltimore City Industrial Space Occupancy and Rental Rates, 1999-June, 2002

	1999	2000	2001	Jan-June 2002
Industrial Space				
Total Inventory				
Southwest	12,286,828	12,286,828	12,286,828	12,286,828
Southeast	13,345,651	13,345,651	13,345,651	13,345,651
Northwest	4,316,998	4,316,998	4,316,998	4,316,998
Northeast	3,591,991	3,591,991	3,591,991	3,591,991
Midtown	2,804,684	2,804,684	2,804,684	2,804,684
Total Citywide	36,346,152	36,346,152	36,346,152	36,346,152
Vacant Space				
Southwest	2,453,284	2,250,070	1,897,985	1,965,347
Southeast	1,988,268	1,429,034	1,471,368	1,883,513
Northwest	317,000	270,200	427,285	620,872
Northeast	588,895	709,954	868,022	944,335
Midtown	388,006	387,053	364,160	348,538
Total Citywide	5,735,452	5,046,312	5,028,820	5,762,605
Absorption				
Southwest	NA	203,213	352,085	(67,362)
Southeast	NA	559,234	(42,334)	(412,145)
Northwest	NA	46,800	(157,085)	(193,587)
Northeast	NA	(121,060)	(158,068)	(76,313)
Midtown	NA	952	22,893	15,623
Total Citywide	NA	689,140	17,492	(733,785)
Percent Vacant				
Southwest	20.0%	18.3%	15.4%	16.0%
Southeast	14.9%	10.7%	11.0%	14.1%
Northwest	7.3%	6.3%	9.9%	14.4%
Northeast	16.4%	19.8%	24.2%	26.3%
Midtown	13.8%	13.8%	13.0%	12.4%
Total Citywide	15.8%	13.9%	13.8%	15.9%
Average Rental Rate				
Southwest	$3.72	$3.70	$4.33	$4.15
Southeast	$3.66	$3.88	$4.50	$4.55
Northwest	$4.50	$5.04	$5.31	$4.41
Northeast	$2.37	$4.17	$4.56	$3.61
Midtown	$2.89	$4.01	$3.98	$4.08

Source: CoStar Realty Information, Inc.; BAE, 2002.



Though Baltimore has only 3,851,000 square feet of flex space, the flex space market performed better than the city's much larger industrial space market, with a net absorption of 38,000 square feet from 1999 through June 2002. (See Table 7.) Accommodating a mix of smaller tenants, flex space in Southeast Baltimore achieved a 43,000 square-foot net increase in flex space occupancy. That reduced its vacancy rate from 15.0 percent in 1999 to 23.7 percent in 2000 to 11.1 percent in June 2002. Northwest and Northeast Baltimore experienced modest increases in occupied space of 7,000 and 10,000 square feet, respectively.



Midtown experienced continual declines in occupied space with loss of 22,000 square feet during the 3 ½ years. Despite these losses, the Midtown flex space vacancy rate of 9.9 percent equals the citywide vacancy rate.

Table 7: Baltimore City Flex Space Occupancy and Rental Rates, 1999-June, 2002

	1999	2000	2001	Jan-June 2002
Flex Space				
Total Inventory				
Southwest	965,241	965,241	965,241	965,241
Southeast	1,118,380	1,118,380	1,118,380	1,118,380
Northwest	989,256	989,256	989,256	989,256
Northeast	394,869	394,869	394,869	394,869
Midtown	382,883	382,883	382,883	382,883
Total Citywide	3,850,629	3,850,629	3,850,629	3,850,629
Vacant				
Southwest	84,346	73,427	76,288	85,680
Southeast	167,368	264,953	92,161	123,632
Northwest	132,530	122,551	150,628	124,712
Northeast	18,681	15,563	23,913	8,200
Midtown	15,021	26,878	37,175	37,800
Total Citywide	417,946	503,371	380,165	380,024
Absorption				
Southwest	NA	10,919	(2,862)	(9,392)
Southeast	NA	(97,584)	172,792	(31,472)
Northwest	NA	9,978	(28,077)	25,916
Northeast	NA	3,119	(8,351)	15,713
Midtown	NA	(11,857)	(10,297)	(625)
Total Citywide	NA	(85,426)	123,207	141
Percent Vacant				
Southwest	8.7%	7.6%	7.9%	8.9%
Southeast	15.0%	23.7%	8.2%	11.1%
Northwest	13.4%	12.4%	15.2%	12.6%
Northeast	4.7%	3.9%	6.1%	2.1%
Midtown	3.9%	7.0%	9.7%	9.9%
Total Citywide	10.9%	13.1%	9.9%	9.9%
Average Rental Rate				
Southwest	$7.23	$9.41	$10.05	$9.03
Southeast	$14.55	$14.86	$12.90	$13.04
Northwest	$9.13	$8.08	$10.09	$8.11
Northeast	$4.50	$4.71	$9.82	$8.23
Midtown	$5.50	$6.63	$8.56	$9.19

Source: CoStar Realty Information, Inc.; BAE, 2002.

The Northwest quadrant had the highest level of vacant space at 12.6 percent in June 2002, while the Northeast sector achieved the lowest vacancies at only 2.1 percent.

Average rental rates have varied significantly each year, reflecting a changing mix of occupied space. Rates are highest in the southeast, averaging $13.04 per square foot and lowest in the Northwest at $8.11 per square foot.

Land Sales Activity. Baltimore captured only 7.0 percent of the region's total 149 industrial land sales during the three-year period from 1999 through 2001. Table 8 shows that industrial land sales in Baltimore totaled 114 acres, 5.2 percent of the total acres sold in the region.

Table 8: Industrial Land Sales in the Baltimore Metropolitan Area, 1999-2001

	City of Baltimore	Howard County	Harford County	Anne Arundel County	Baltimore County
Number of Sales					
1999	1	10	5	7	11
2000	4	19	8	11	15
2001	6	15	6	15	16
Acres Sold					
1999	8	128	55	65	314
2000	20	207	222	332	115
2001	86	68	183	205	199
Total	114	403	461	602	628
Average Size					
1999	8.00	12.81	11.04	9.22	28.53
2000	5.20	10.90	27.76	30.22	7.67
2001	14.38	4.55	30.54	13.69	12.44
Average Price per Square Foot					
1999	$1.49	$2.85	$1.55	$2.50	$1.28
2000	$6.51	$4.12	$0.74	$0.91	$2.77
2001	$13.61	$4.06	$0.98	$1.48	$1.88

Sources: CoStar Realty Information, Inc.; Woodley Appraisal Group, 2002.

Only 8 acres of the city's industrial land were sold in 1999, 20 acres in 2000, and 86 acres in 2001, for a total of 114 acres or about 38 acres per year. Not surprisingly, the size of the average industrial land sale in the city (9.19 acres) was much smaller than in the suburban areas (16.61 acres), where larger parcels are more readily available. Pricing for city land ($4.00 per square foot) was higher than in suburban areas ($2.00 per square foot), in part, due to the high price for very small sales, sale of industrial parcels in Fells Point, S. Central Avenue and Port Covington purchased for non-industrial uses, and the presence of existing buildings on one or more sites. There were few moderately-priced, mid-sized sales in the city during the three-year period.

Industrial land sales for the following uses were recorded for the target areas in the city, during the three-year period:

Canton (3)	Pier and two warehouses.
Carroll Camden (3)	Telecom site, self-storage, and one unknown.
Locust Point (3)	Two retail power centers and continued heavy marine use.
Central Avenue (1)	Parking garage.
Pulaski-Erdman (1)	Contractor headquarters facility.
Fells Point (1)	Mixed-use project.
Cherry Hill (1)	Post office.
Hawkins Point (1)	Auto salvage yard.

Based on the acreage in this limited sales inventory, the intended mix of uses for industrial land sold in the city was 34-percent retail, 18-percent marine, 12-percent office/warehouse, 31-percent salvage, 3-percent mixed use, and 2-percent storage.

Table 9: Industrial Land Sales in the City of Baltimore, 1999-2002

Address	Date Sold	Price per Square Foot	Acres	Intended Use/Zoning	Subarea
6201 Seaforth Ave.	Dec-98	$1.00	8.43	Warehouse-M-3	Canton
3500 Biddle St.	May-99	$1.49	8.00	Contractor-M-3	Pulaski-Erdman
2110 Haines St.	Jan-00	$5.57	3.08	Telecom office-M-3	Carroll Camden
1500 Cherry Hill Rd.	Feb-00	$2.35	2.87	Post Office-M-2,1	Cherry Hill
901-05 S. Wolfe St.	May-00	$16.17	4.40	Mixed Use-Marine- M-3	Fells Point
3000 Childs St.	Nov-00	$1.95	10.44	Marine Terminal-M-3	Curtis Bay
101-501 McComas St	Apr-01	$4.03	14.92	Power Center-M-3	Locust Point
2901 Light St.	Apr-01	$4.03	56.84	Power Center-M-3	Locust Point
6100 Seaforth Ave.	Apr-01	$1.61	4.61	Warehouse-M-3	Canton
1415 Russell St.	May-01	$23.00	1.67	Self Storage-M-3	Carroll Camden
1110 E. Baltimore St.	Jun-01	$37.96	0.59	Parking Garage-M-1,3	Central Ave.
1820 S. Clinton St.	Nov-01	$11.02	0.75	Pier-M-3	Canton
2313 Wilkins Ave.	Jan-02	$2.67	6.07	Unknown-M-2,1	Carroll Camden
2801 Hawkins Pt. Rd.	Feb-02	$0.70	52.37	Auto Salvage-M-3	Hawkins Point

Sources: CoStar Realty Information, Inc.; Woodley Appraisal Group, 2002.

Key Demand Drivers

Baltimore's relative strengths are its central east-coast location and transportation network, especially as a distribution hub for the Baltimore-Washington and Northeast corridors. Proximity to Interstates 95/695 is a crucial location factor for the regional industrial market, providing access to major markets north and south along the east coast. Baltimore is well-located to serve as a major north-south distribution and transfer hub for these markets. However, the lack of available land and competitive buildings has helped drive potential warehouse and distribution users to suburban locations. Only those businesses that supply goods and services to the local Baltimore market continue to *require* a central location within the city.

Interstate 95 also provides visibility for companies that might incorporate showroom and outlet space that attracts consumers to their wholesale or distribution operations. Again, Baltimore lacks available sites and buildings for such uses.

State economic development officials and area realtors and developers report demand from companies that would have considered Baltimore if modern facilities and sites were available. Some regional prospects don't ever see Baltimore sites because the city has nothing that meets their space needs.

Baltimore does have a relative advantage over its neighbors in terms of availability of labor. Baltimore has higher unemployment and lower wages than its neighbors. Suburban areas like Baltimore County and Howard County experienced tight labor markets during the 1990's, although there is some slight easing now due to the recent recession. Baltimore also has excellent public transportation systems to carry workers to industrial areas. Finally, the city's Empowerment and Enterprise Zones provide powerful incentives for labor-dependent companies looking at the city. As a result, the city has an advantage for attracting companies that depend on a lower-cost, available labor supply.

While labor costs are generally lower in Baltimore, real estate transfer costs are perceived to be higher. Similarly, there is a perception that maximum pricing has impacted on the marketability of the several of the few competitive buildings and sites in the city that are owned by BDC. These competitive disadvantages may be impacting on demand, according to area brokers.

The potential demand for industrial and flex space in the city is not well reflected in the absorption and employment trends due to the lack of competitive product to offer to prospective tenants. Modern facilities in quality business environments, such as Holabird Industrial Park, meet with good market response. But much of the city's stock is in small buildings on cramped lots with inadequate access or in large multi-story warehouses no longer appropriate to modern warehouse technologies that require high ceilings and clear-span space. Prospective tenants value the certainty of organized industrial parks where use and design controls ensure that future development will be compatible and meet a minimum quality level. Portions of the city could offer very competitive sites with clearance of blighted structures, upgraded infrastructure and development controls.

Discussions with private port operators and users also indicate steady demand for deepwater sites for expansion of their own operations, for tenants being priced out of the Port of New York and New Jersey, which is very short of deepwater sites and for other international companies seeking to expand their U.S. operations. The Port Land Use Development Zone Master Plan (PLUDAC) background analysis identified potential need for 412 acres of public and private port-related demand by 2011 in Baltimore. This demand includes 285 acres required for 11 private port terminals and 127 acres needed to complete the Maryland Port Administration's Marine Terminal Development Plan, 2000-2010[1]. One constraint on demand for deepwater sites in Baltimore is the perception by those considering port expansion that commercial and residential uses may be crowding out traditional port-related users. When making a 20-year commitment to a major capital facility, it is only prudent to want evidence that the facility will be allowed to operate without undue restrictions into the future. International companies watch encroachment and land conversion trends very closely in evaluating potential locations.

[1] Basile Baumann Prost & Associates, Inc., "Technical Documentation of Market Feasibility and Impact Analysis, Port Land Use Master Plan Task 4., Revised March 5, 2002.

Demand Analysis

Market wide, the data from both space absorption and new construction suggest average annual demand for about 190-200 acres of industrial land. Within Baltimore, recent space absorption data for bulk and office/warehouse space suggest a trend in demand for about 144,000 square feet or 10 acres per year for both of these product types. This represents about 7.0 percent of the region's bulk and office/warehouse absorption. However, the city's share of total existing bulk and office/warehouse space is 28 percent. The city had negative net absorption of 99,000 square feet of flex space over the past 3½ years.

While the city is unlikely to capture as high a share of the region's industrial absorption as it did in earlier decades, the city has certain competitive advantages and disadvantages for particular industrial uses. Recent employment data suggest that the city retains its competitiveness for printing, paper, and textile production, as well as for certain other industrial niches, including labor-intensive and regional-market-serving companies.

More importantly, the lack of competitive sites and buildings has precluded the city from capturing a larger share of the region's distribution and wholesale/showroom facilities. There is clearly regional demand for flex space (18-foot clear) and medium-height (18- to 30-foot) warehouse space that cannot be filled by the city's existing industrial inventory. The city's competitive locations, especially along I-95, have opportunities to capture more of the region's distribution and, especially, wholesale and showroom/outlet tenants that benefit from exposure along the I-95 Corridor. But, the land and competitive facilities are not available. To a large extent, supply issues are artificially driving down the city's absorption pace and will continue to do so until there is competitive industrial space on the market.

With modern buildings developed on competitive sites in the I-95 corridor, Baltimore could expect to attract up to 15 to 20 percent of the region's industrial activity or 30 to 40 acres per year. Achieving the city's potential will require aggressive public/private partnerships to clean up brownfield sites, assemble properties and create modern industrial parks. Without upgrading and redevelopment of key industrial properties, Baltimore's industrial demand will continue to lag behind other jurisdictions in the region with only 10 to 15 acres of annual demand.

The City's current strategy includes appropriate measures to increase the supply of marketable industrial sites. Land development initiatives include:

- **Carroll-Camden**: a strategy that combines revised urban renewal plan controls, selected acquisition/site assembly, and infrastructure/access improvements will upgrade an economically important and very marketable industrial area;

- **West Baltimore Industrial Tax Increment Financing (TIF) District:** use of a TIF to finance the acquisition/redevelopment of two strategic sections of West Baltimore: Rosemont and Warner Street;

- **Fairfield:** an urban renewal plan that seeks to upgrade the public thoroughfares, assemble small parcels, and generally improve the appearance, hence the marketability, of the area; and

- **Hollander Ridge**: a good example of change-of-use appropriately going the other direction, i.e., that the City realized that the former public housing site was best used for job-producing industrial-commercial development.

Policy initiatives that are also geared to improving the City's capacity to redevelop industrial land include:

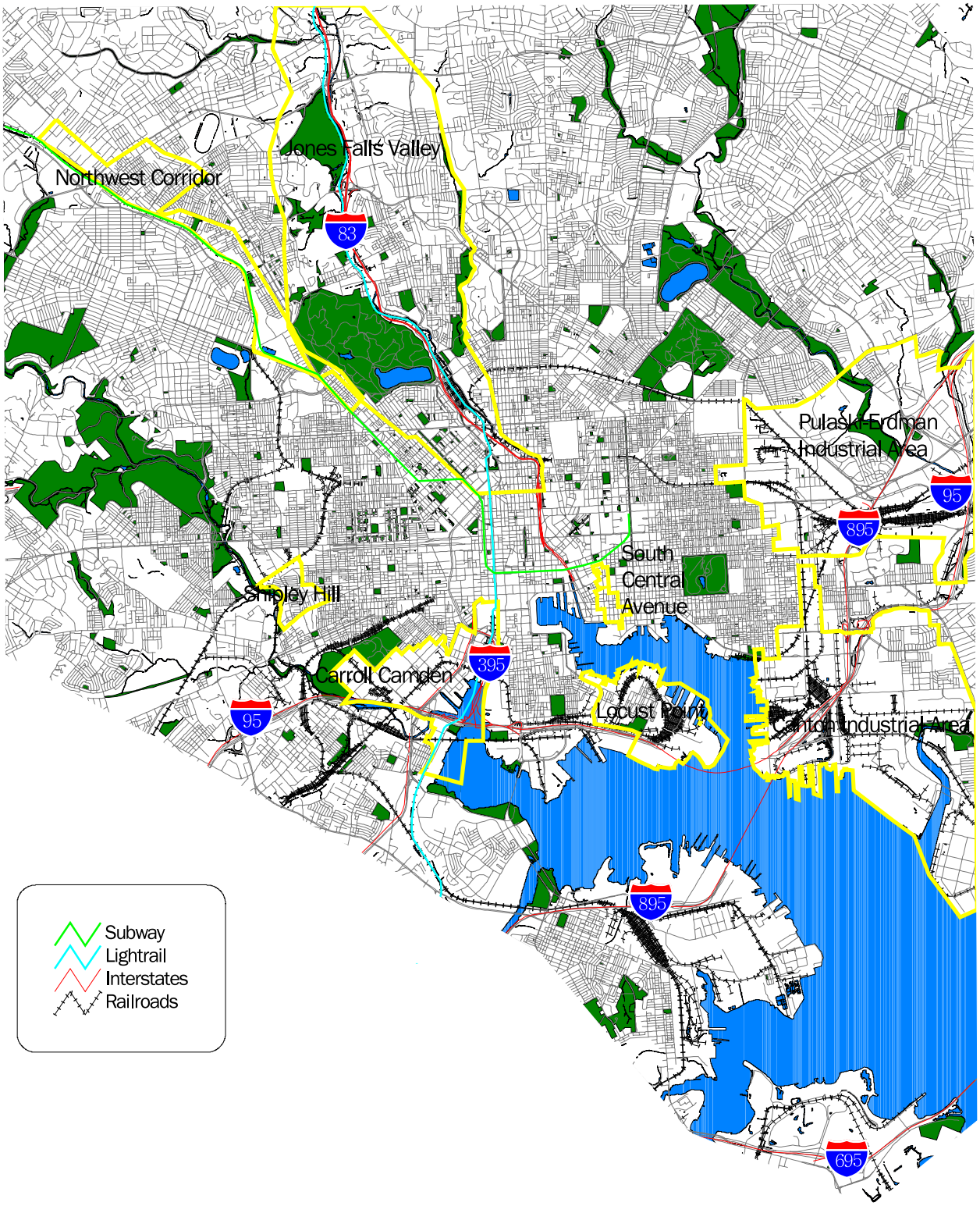
- **Brownfields**: The recently announced $1.2 million EPA grant will allow the City to expand brownfields incentives. A General Assembly-authorized Task Force is looking at ways to improve Maryland's Brownfields Voluntary Cleanup Program.

- **TIF Financing**: BDC is looking at ways to improve the authorizing legislation for TIFs, as well as other ways to creatively use TIFs to accelerate the City's efforts to upgrade and create marketable industrial land. (See W. Baltimore TIF, above.)

- **Eminent Domain Powers**: Through General Assembly action in 2002 and proposed City Council action (CCB 701), the City is attempting to broaden the circumstances under which eminent domain can be used for economic development.

As these projects move toward implementation, some of the regional demand will shift from suburban locations to locations in the city.

Industrial Land Use Study of Baltimore
Major Geographic Sub-areas of Study



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BALTIMORE DEVELOPMENT CORPORATION

III. Potential Zoning Tools and Policies

To inform this study's recommendations on how to approach changes from industrial uses, case studies have been prepared profiling industrial zoning policies in other parts of the U.S. and Canada. These case studies emphasize protection of industrial land uses, particularly waterfront uses, and techniques for dealing with unsightly and noxious industrial uses.

Case Studies of Zoning and Land Use Regulatory Practices to Protect Industrial Areas from Encroachment and to Encourage Technology-Related Businesses

The following are examples from other U.S. cities of zoning or land use controls to protect industrial areas and to encourage technology-related businesses:

Portland, Oregon. [2] The City of Portland has historically supported limitations on retail and office uses in its industrial and employment zones. In industrial areas, these limitations are set because existing and new industrial businesses are highly dependent on their location for proximity to major transportation facilities, i.e., marine terminals, rail terminals, and freeways. In industrial and employment areas, non-industrial uses, such as retail and traditional office uses, have been documented to bring impacts such as decreased supply of industrial land, an increase in people that may result in less tolerance toward industrial business, increased auto traffic, and higher land cost.

Portland has three zoning districts characterized at Industrial Sanctuary. The zones provide areas where most industrial uses may locate, while other uses are restricted to prevent potential conflicts and to preserve land for industry. These are:

- **General Industrial 1 (IG1)** – These areas generally have smaller lots and a grid block pattern. Sites have high building coverages and buildings which are usually close to the street. IG1 areas tend to be the City's older industrial areas.
- **General Industrial 2 (IG2)** – These areas generally have larger lots and irregular or large block pattern. The areas is less developed with sites having medium and low building coverages and buildings set back from the street.
- **Heavy Industrial (IH)** – This zone provides areas where all kinds of industries may locate, including those not desirable in other zones due to their objectionable impacts or appearance. Development standards are the minimum necessary to assure safe, functional, efficient, and environmentally sound development.

Until 1999, IG1 allowed only one retail or office use of 3,000 square feet or less per site. Larger or more than one such use per site may be approved by a conditional use process. IG2 and IH allowed up to four retail or office uses, each 3,000 square feet or less, per site. More and larger such uses could be approved by a conditional use process.

Portland also has three additional zoning districts designed for a wide range of employment activities without potential conflicts from interspersed residential uses. The emphasis of the

[2] Source: Commercial Restrictions in Industrial and Employment Areas, City of Portland Bureau of Planning, April 1999.

zones is on industrial and industrially-related uses. Other business and commercial uses are also allowed to support a wide range of services and employment opportunities. These are:

- **General Employment 1 (EG1)** - These areas generally have smaller lots and a grid block pattern.
- **General Employment 2 (EG2)** - These areas have larger lots and an irregular or large block pattern.
- **Central Employment (EX)** – This is a mixed-use zone for center-city areas that have predominantly industrial type development. The intent of the zone is to allow industrial, business, and service uses that need a central location. Residential uses are allowed, but are not intended to predominate or set development standards.

In 1998, Portland's Planning Commission began a process assessing the need to strengthen limitations on retail and office uses in industrial and employment areas. This process led to the adoption of zoning code changes in April 1999. The changes set maximum sizes for which retail and office uses could be approved as conditional uses in the sanctuary zones and, in the IG1 district near the downtown core, set criteria to promote conditional use approval of offices for businesses that mix office and industrial components.

This latter change arose from findings that some types of businesses with both industrial and office characteristics may be more compatible with industrial uses than traditional office uses. Offices with manufacturing or production components have different spatial and economic needs than traditional office uses. Examples of these types of industries include "creative service" businesses such as Internet sales, software design/production, web page design and production, advertising, and video production. Portland chose to encourage such offices in near-downtown industrial zones because these areas contain many older manufacturing structures no longer appropriate for new industrial uses. The City hopes to promote creative reuse of these buildings.

Chicago, Illinois.[3] Chicago has adopted a comprehensive industrial land-use policy to focus and coordinate the City's economic development efforts in its industrial employment centers. In November 1993, the Chicago Plan Commission adopted both an overall industrial land use policy and a corridor strategy for the industrial components of Chicago's North Side. Two other industrial area plans have also been prepared.

The policy is to create accessible and attractive environments for the City's industrial corridors through public improvements and development of underutilized properties, and to assure stable land use within corridors through improved zoning and land use regulations. For the latter policy, three actions were proposed:

- Require that proposals for change from industrial to non-industrial zoning in industrial corridors determine that (1) the physical characteristics of the site make it intrinsically unsuitable for industrial development, (2) substantial change in the character of the immediately surrounding area make industrial redevelopment of the site impractical, (3) the proposed non-industrial development fills an unmet need for a neighborhood service or

[3] Sources: Corridors of Industrial Opportunity, A Plan for Industry in Chicago's North Side, City of Chicago, Department of Planning and Development, Adopted November 10, 1993; and Eileen Figel, Deputy Commissioner, City of Chicago, Department of Planning and Development, Industrial Division.

public facility, (4) the proposed non-industrial development will not result in burdensome zoning or other regulatory restrictions on neighboring industries, and (5) traffic to be generated by the development will not exceed existing street capacity.

- Give full consideration to the operational needs of existing industries when reviewing proposals to rezone property near industrial corridors.
- Update existing zoning standards for manufacturing districts to bring them in line with the needs of modern industrial development. The revised classifications should allow non-industrial uses only to the extent that they provide services in support of industrial businesses or otherwise promote the integrity and viability of industrial corridors. Planned Manufacturing Districts are a mechanism for achieving this goal.

Three Planned Manufacturing Districts (PMDs) had been enacted at that time. A total of five are now in place. These districts limit permitted land uses to industrial and non-industrial activities that are compatible with an industrial environment, and establish more stringent requirements for zoning changes. Goose Island is one example of a PMD. The District generally allows heavy industrial and manufacturing uses. It permits business and professional offices on upper floors and limited retail sales of products processed on the site. It controls storage in areas located within 300 feet of Residential Districts. A description of the Goose Island Planned Manufacturing District No. 3 is included in Appendix B.

Eileen Figel, Deputy Commissioner of the Chicago Department of Planning and Development, reports that the Planned Manufacturing Districts have successfully sent the message that the City will not entertain changes of use in the areas. The problem with PMD's is that they are each individual plans, which makes their regulations difficult to enforce. For the future, Chicago is considering using an overlay "Designated Industrial Corridor" as a protection mechanism. In such a designated area, the City would set a high standard for making a zoning code change. Possible criteria for change might include:

- No negative impact on adjacent industrial activities;
- Absence of a critical mass of nearby industrial activities;
- Absence of industrial infrastructure such as rail, highway, or port facilities;
- No targeted infrastructure investment planned; and
- Notification of all surrounding property owners of consideration of the change by the City Planning Commission.

Detroit, Michigan.[4] Detroit's industrial zoning districts do not allow residences except for loft uses. Loft uses can be approved through a special permit hearing process conducted by the City's Building Safety Inspections Department. This is an administrative action rather than a Zoning Board decision.

Detroit's strategy for promoting industry is to assemble land and act as developer for the land's redevelopment. A variety of financing tools facilitate the development including foreign trade zones, the Michigan Obsolete Buildings Authority (tax abatement for industrial or commercial renovation), Renaissance Zones (tax credits for industrial redevelopment), Michigan Tax Increment Financing, and the Detroit Empowerment Zone resources.

[4] Sources: Rory Bolgar, Detroit Planning Commission; John Paul Hrang, Detroit Department of Planning and Development, Zoning Division

The City's Zoning Code Text is being updated now. One new category, encouraged by the City's Master Plan, is a light industrial buffer zone defined for areas of conflict between residential and industrial uses. Another new category under consideration is a Special Development District for Technology and Research. Such a category would define a campus-like setting for industry- and office-related uses that are likely to be negatively impacted by a traditional industrial environment. Uses might include such "high technology" uses as engineering, design, research and development, photonics/optics and prototype development. A draft description of such a district is included in Appendix B.

The Zoning Code revision is also considering adding some industrial protection for heavy industrial areas. The proposed M-5 (heaviest industrial zoning category) would prohibit office and retail uses. These are now allowed in that district. Automobile repair would still be permitted in the zone.

Cleveland, Ohio.[5] Cleveland has not made zoning changes for industrial protection or to attract technology. The City has not felt that industrial uses are inappropriately threatened or that there is a constituency supporting such changes. Non-industrial redevelopment along the waterfront has been viewed positively and judged to represent favorable current economic trends. Industrial property owners appear to want to keep their options open.

Industrial zoning at most levels already allows commercial and office uses.

Cleveland has recently adopted a Live/Work Overlay Zone for some heavier industrial districts. City Council must first approve the location of the Overlay District. Then live/work developments will be approved on a case-by-case basis by the City Planning Commission.

Boston, Massachusetts. Boston has instituted a "Back Street" Program aimed at preserving industrial space and the businesses and jobs occupying it. The initiative has a policy goal of no net loss of industrial space, and offers financial assistance, technical resources, and job training to industrial area businesses. Targeted industries are printing and publishing, manufacturing, distribution and warehousing, business services, construction contracting, and food processing. (Source: www.bostonbackstreets.com)

Vancouver, British Columbia. In 1995, the City of Vancouver adopted Industrial Lands Policies. The action came after redevelopment of a number of industrial areas and a detailed review of existing areas that confirmed the importance of retaining much of the City's remaining industrial land. The Policies "ensure that the city retain industrial land to provide for industries and service businesses, to meet the needs of port and river related businesses, and city-serving and city oriented industries." The Policies provide a framework to guide future decisions on the use of industrial land. They include three sections: overall objectives; area-specific policies; and policies to guide future re-zoning of industrial land. A copy of the Policies is included in Appendix B.

Seattle, Washington.[6] The City of Seattle's Industrial zones define the industrial districts based on the City's Comprehensive Plan of 1994. There are three basic types of mapped industrial zones: General Industrial Zones (IG1 and IG2), Industrial Buffer zones IB, and

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[5] Source: Bob Brown, Cleveland Department of City Planning, Economic Development Division

[6] *Web:* http://www.ci.seattle.wa.us/dclu/Planning/comprehensive/

Industrial Commercial zones (IC); they vary according to uses allowed, density, height, screenings or performance standards requirements. Other policies include Manufacturing Center Overlay (MCO) zones that are special districts established by rezoning applications on existing industrial areas to encourage industrial development, especially advanced technology-manufacturing research. These zones only permit light manufacturing industries and some residential use with conditions.

The zones incorporate Industrial Buffer zones with mandated separation of uses based on the nature of the industrial use and the neighboring properties. Appendix B describes these zones.

Port-Related Zoning Districts. HNTB recently produced a technical memorandum summarizing its research on port-related zoning districts that have been enacted in U.S. jurisdictions. The research sources include a report by Charles Reed on Waterfront and Port Industrial Zones published in The Zoning Report for Planning and Zoning Professionals, February 1999. The following Port-ship zones are identified:

Jacksonville, Florida – Jacksonville has an Industrial Water Zoning District encompassing the city's port areas. The district is intended primarily for land uses that require deep-water access. Permitted uses include water dependent and water related activities. Some water-related uses require Planning Commission approval through an exception process. Permitted uses include passenger terminals. Conditional uses include restaurants directly related to port activities, water-related recreation facilities, and marinas.

Miami, Florida – Miami's Waterfront Industrial District (SD-4 Overlay) is intended for marine activities including industrial operations and major movements of passengers and commodities. Because these uses are critical to the local economy and suitable locations for them are limited, the district does not permit residential, general commercial, service, office or manufacturing uses not primarily related to waterfront activities.

Detroit, Michigan – Detroit's Waterfront Industrial District (W1) allows water-dependent uses, plus facilities that directly support water-dependent uses, as well as other heavy industrial uses that require large quantities of water. Only one area in Detroit is zoned W1: Waterworks Park, which contains the city's water purification plant. Other waterfront areas are zoned M-4 and M-5, including the centers of Great Lakes shipping and the chemical industry in the Downriver area.

Long Beach, California – Long Beach's Port-Related Industrial (IP) district contains maritime industry and marine resources. Uses are primarily port-related or water-dependent, but may include water-oriented commercial and recreation facilities serving the general public. The Port Authority controls most of the land within the district.

Philadelphia, Pennsylvania – Philadelphia's Port Industrial District (PI) is intended for water-dependent uses only. This district is located in several areas of South Philadelphia. The district is intended for water-dependent uses only. Water-related uses are located in adjacent heavy industrial and "least restricted" industrial districts adjacent to the PI zone. The PI zone covers land between 350 and 400 feet from the water's edge. This is the distance from the waterfront to the first major road that parallels it.

Tacoma, Washington - Tacoma's Port Industrial District (S-10) applies to land within 200 feet from the shoreline of city waterways in accordance with Washington State shoreline laws. The district permits both water-related and water-dependent uses.

Norfolk, Virginia - Norfolk's Waterfront Industrial District (I-4) is geared toward water-dependent uses, but also permits (as of right) eating establishments and liquor stores.

New York City.[7] New York's three manufacturing districts (M-1, M-2, and M-3) do not allow residential uses. With some exceptions, retail and commercial uses are permitted.

New York also has five Special Purpose Districts that designate residential/industrial mixed-use. Each district is individually designed. The underlying principle of each is to regulate growth of residential and manufacturing development, to promote proximity between residence and work, and to retain job-intensive industries. These districts allow a more restrictive list of manufacturing uses (generally light manufacturing uses) and restrict residential development to certain areas. Manufacturing and residential development may be side by side, but not in mixed-use buildings. In these districts, changes in use and conditional uses require rigorous discretionary reviews by the Board of Standards and Appeals or the City Planning Commission.

New York also has regulations allowing conversion of older non-residential buildings to residential (Loft Zoning). Loft Zoning was instituted to allow owners to increase return on their investment by authorizing less restrictive residential regulations as well as to protect job-providing industries by requiring the preservation of manufacturing uses within the building.

Case Studies of Strategies for High-Visibility Sites

This section looks at industrial zoning and other land use controls from the point of view of their ability to limit noxious and unsightly activities in high-visibility locations and near residences. The City of Baltimore's ability to upgrade the image of individual neighborhoods and the city as a whole has been constrained by unsightly uses on high visibility sites, especially heavy industry parcels. Noxious uses near residential areas are a threat to public health and quality of life. The purpose of this section is to recommend strategies for the City of Baltimore to address the question of unsightly industrial uses and their effect on high-visibility sites and residential neighborhoods.

This section first identifies a range of potential strategies including zoning and landscaping regulations, overlay districts, design guidelines and incentives for site improvements. Then it provides a brief overview of these potential strategies based on a literature review of practices from across the country and a few from Canada.

Controlling the potential nuisances and noxious side effects of industrial use has been one of the primary rationales for land use planning and controls. Apart from a plethora of federal and environmental legislation, there is a range of potential strategies that address the question of unsightly industrial uses through use segregation, siting regulations and landscaping/screening standards. For the purpose of discussion, these strategies have been divided into the following three categories:

[7] Source: Pratt Institute for Community and Environmental Design document

- **Zoning and Regulations.** Segregation of industrial and residential land uses has been one of the historical imperatives for zoning. The 1926 U.S Supreme Court case, *Euclid v. Ambler Realty*, involved a dispute over a city's right to segregate industry from residential areas. After the court found the Village of Euclid's zoning to be legal under the city's police powers, many zoning ordinances have segregated industrial and residential uses. Today, zoning regulations are often complemented by mandatory landscaping and screening prescriptions. Other zoning ordinances employ performance standards and overlay zoning.
- **Design Guidelines.** These are advisory policy directives that support land use planning and zoning regulations. They comprise various site planning principles, landscaping and screening recommendations, signage and lighting instructions.
- **Incentives for Site Improvements.** These incentives can be in the form of tax relief and subsidies to improve the physical environment of existing industrial areas.

1. Zoning and Regulations

City of Seattle Industrial Buffer Zone.[8] As described earlier, the City of Seattle's industrial zoning includes an Industrial Buffer Zone. The designation of a separate Industrial Buffer zone (IB) is unique. Normally, buffering requirements are spelled out in the general industrial zones. The intent of the Industrial Buffer is to provide an appropriate transition between industrial areas and adjacent residential zones or commercial zones with a residential orientation. The zone permits light and general manufacturing commercial use; however, high impact industrial use[9] is strictly prohibited. The IB zone requires mandatory setbacks, screening and landscaping for parking, loading, outdoor sales and storage. (Refer to Appendix B for details.)

Ontario, Canada Land Use Compatibility Guidelines.[10] The land use compatibility guidelines for Ontario, Canada take a different approach. They are derived from the state environment legislation. These guidelines recommend mandatory, minimum separation distances and other control measures for land use planning proposals to prevent or minimize adverse effects from the encroachment of incompatible land uses where an industrial facility[11] either exists or is proposed.

The objective of these guidelines is to minimize or prevent, through the use of buffers, the exposure of any person, property, plant or animal life to adverse effects associated with the operation of specified facilities. Adequate buffering of incompatible land uses is intended to supplement, not replace, controls which are required by legislation for both point source and non-point emissions at the facility source.

The guidelines use an influence area concept for industrial land uses (an overall range within which an adverse effect would be or is experienced) to recommend minimum separation distances and buffers. When there are existing and committed industrial uses, plan approval agencies are encouraged to delineate all potential influence areas (in the land use plan) or, where known, the actual influence areas, around existing and committed industrial land uses within their

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[8] Web: http://www.ci.seattle.wa.us/dclu/Planning/comprehensive/

[9] The State Environment Policy Act (SEPA) defines high impact uses as the uses that are considered to have the potential to cause major community or health impacts, including chemical intensive activities, odor, vibration etc.

[10] Web: http://www.ene.gov.on.ca/envision/gp/

[11] *Industrial facility* is defined as a facility or activity relating to: the assemblage and/or storage of substances/goods/raw materials; their processing and/or manufacturing; and/or the packaging and shipping of finished products.

jurisdiction. The recommended minimum separation distances range from 20 meters for Class I Industrial to 300 meters for Class III Industrial. (Refer to Appendix B for the definition of industrial classes and illustrations of separation distances.)

Chicago Planned Manufacturing District Ordinance.[12] The City of Chicago's Planned Manufacturing Districts (PMDs) are described earlier in this chapter. Noxious industrial uses such as incinerators, liquid waste handling facilities, sanitary landfills and transfer stations are considered conditional uses that, when permitted by the PMD, undergo a special permit review. Other than use restrictions, the PMD Ordinance includes regulations to protect adjacent non-industrial areas by establishing strict enclosure restrictions and front or side yard requirements to industrial establishments near residential district boundaries. (Refer to Appendix B for details.)

Anne Arundel and Prince George's Counties' Buffering and Landscape Standards. Both of these counties have prepared landscape manuals that complement the zoning districts designated by the comprehensive plans. These Landscape Manuals spell out mandatory screening and buffering standards for all designated zoning districts. These include buffer distances for parking areas, landscaping and fencing requirements for outdoor storage, buffer areas for industrial parks (50 to 100 feet in Anne Arundel County). (Refer to Appendix B for details.)

2. Design Guidelines (Siting Restrictions, Landscaping)

Louisville, Colorado, Industrial Development Design Standards and Guidelines.[13] The Industrial Development Design Standards and Guidelines (IDDSG) establish general advisory design criteria and mandatory minimum standards for industrial developments within the City of Louisville. The IDDSG is a supplement to the City of Louisville's Zoning and Subdivision Regulations and PUD Ordinance. Where a mandatory standard in the design guidelines is in conflict with any provision of the City of Louisville municipal code, the most restrictive requirement takes precedence.

The IDDSG is generally organized in a descending order of scale, from overall site planning concerns, to circulation issues, to buildings, site details, and then to signs and exterior lighting. The statements of **standards,** indicated with an **(S**), establish the specific design standards with which compliance is mandatory. **Guidelines,** indicated with a **(G**), are the design guidelines with which compliance is strongly encouraged. These standards and guidelines include siting and screening of utilities, mechanical equipment, service, delivery and storage areas. Some of the standards are:

- *Outside storage areas shall be fully screened by screen wall enclosures. Screen walls shall have a minimum height of 6-feet, and a maximum height of 10-feet. Stored materials may not be stacked or be visible above the enclosure height.*

- *Provide a minimum 25-foot wide buffer-planting strip (for residential uses) incorporating an average 3-foot high berm containing a minimum of 1 tree for every 20 linear feet of property line and a screen hedge incorporating both deciduous and evergreen shrubs a minimum of 3-feet in height (at maturity) along a minimum of 75% of the perimeter area.*

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[12] *Web:* http://www.ci.chi.il.us/Zoning/ordinance/default.html
[13] *Web:* http://www.ci.louisville.co.us/Planning&Zoning/designguidelines.htm

- *Where located within a side yard, or visible from street view, screen loading docks and service areas with a minimum of 6-feet high screen wall constructed of the same materials and finishes as the main building.*

(Refer to Appendix B for details and illustrations.)

Tucson, Arizona Design Guidelines Manual.[14] The City of Tucson's *Design Guidelines Manual* expands on the overall policy direction provided in the Land Use Element and the Community Character and Design Element of the *General Plan* by illustrating ways to meet policy objectives for design quality. Each guideline contains an **Intent** statement, which describes a desired outcome. **Related Policy Links** are provided to allow the user to refer to the General Plan policy for each guideline. The goal of these guidelines is to suggest a range of solutions to satisfy a policy objective rather than to prescribe design solutions. For example, to screen less visually attractive uses like dumpsters, outdoor storage, utility and other freestanding equipment the guidelines recommend a minimum six-foot high masonry wall and two or more of the following:

- sound absorbent/sound scattering wall facing material such as tile, stone, or brick
- earth berms
- dense planting up to six-feet high

Guidelines are intended to help protect the integrity of existing neighborhoods, complement adjacent land uses, and enhance the overall function and visual quality of the street and adjacent properties. Guidelines are primarily organized into sections by 'Type of Development' and include buffering and screening design, signage and lighting standards and site planning principles. (Refer to Appendix B for general screening guidelines and specific guidelines for industrial/commercial development.)

District of North Cowichan Design Guidelines, Canada.[15] The guidelines provide general siting, landscaping and signage principles for a specially designated industrial use district. The guidelines format is concise and user friendly with illustrative pictures and graphics. (Refer to Appendix B for details.)

3. Site Improvement Incentives

City of Chicago Incentives Programs.[16] The City of Chicago offers a variety of industrial development and infrastructure improvement incentives programs to complement its Planned Manufacturing District Ordinance. These include:

Façade Rebate Program. The objective of this program is to increase the physical attractiveness and marketability of industrial and commercial areas through financial and technical assistance for businesses' property renovation. The program provides rebates for various facade rehabilitation activities, including:

- complete facade renovation;

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[14] Web: http://www.ci.tucson.az.us/planning/desguide/desguide.htm
[15] Web: http://www.northcowichan.bc.ca
[16] Web: http://www.ci.chi.il.us/PlanAndDevelop/

- exterior lighting;
- new signs;
- graphics;
- windows;
- doors;
- window displays and awnings;
- passive security and energy conservation systems; and
- truck docks.

Industrial buildings are eligible for a rebate of 30 percent of approved cost up to $10,000 per facade unit. Commercial retail buildings are eligible for a rebate of 50 percent of approved cost up to $5,000 per leasable business space. The maximum rebate per application is $40,000.

Industrial Area Improvement Program (IAI). The objective is to revitalize basic industrial infrastructure. Businesses, typically in cooperation with local industrial councils, use the IAI program to improve industrial streets and related transportation-oriented infrastructure. Eligible projects include:

- streets and alleys;
- viaduct clearance;
- railroad crossings;
- intersection design;
- water and sewer lines; and
- complementary landscaping.

Industrial Corridors Program. The program's objective is to develop business environments in industrial corridors that continue to meet the needs of existing companies, while anticipating and encouraging future development opportunities. The program is designed to make Chicago's industrial environment competitive by bringing company and community interests together to plan and implement improvements in the 22 industrial corridors.

Industrial Corridors are employment centers with defined geographic boundaries and unique identities. Building on these characteristics, IC plans, developed by community and business leaders, are intended to ensure their Industrial Corridors are:

- safe (in reality and perception);
- accessible and functional;
- competitive and marketable,
- manageable; and
- attractive.

Recommended Zoning Strategies for Baltimore

The City's current M-1, M-2 and M-3 zoning categories do not accommodate the full range of development alternatives desired by users. The current code does not encourage the mixed-use development that is so attractive to office and technology users and appropriate for the reuse of historic structures. Protections for adjoining districts are often minimal, so many adjoining residential neighborhoods have little buffering from industrial uses. Although some individual Urban Renewal Plans set screening and landscape standards, and the M-1 Zoning District establishes performance standards controlling the environment, the basic Zoning Code for

Industrial Districts does not incorporate the modern development standards and guidelines that industrial and business park developers use to ensure quality development and long-term compatibility among uses.

New Zoning Categories. We recommend adding four new zones to the City's zoning code to remedy weaknesses in the existing industrial zoning categories and to offer districts that better meet current development needs:

- **Industrial Park** – On properties of 20 acres or more, the industrial park zone would impose setbacks and design guidelines to ensure quality development. Retail uses should be excluded, except for specific types of support retail services. Gas stations should be excluded as well. Technology and office uses should be allowed as conditional uses with limited FARs. Office use incidental to a manufacturing operation should be allowed as a matter of right. Site layouts should require room for on-site parking and truck maneuvers. The Holabird Business Park guidelines could serve as a model. The code should include performance standards regarding emissions, noise, vibration, odors and glare.

- **Urban Business** – To accommodate office and technology uses, an urban business zone should be developed, possibly using the Seton Business Park as a model. Design guidelines should ensure a level of quality. Office and technology uses should be allowed as a matter of right. Light manufacturing that can meet strict performance standards, particularly prototype manufacturing, also should be allowed. Retail uses should be excluded, except for specific types of support retail services (e.g., non-fast food restaurants). The code should include performance standards regarding emissions, noise, vibration, odors and glare. Such a category could more appropriately meet the needs of the proposed University of Maryland Baltimore Research Park and the East Baltimore Biotechnology Park than do current zoning categories.

- **Mixed Use** – For the Jones Falls Valley and reuse of other historic industrial properties, we recommend developing a new mixed-use zone that would allow a mix of office, light industrial and residential uses in the same building and/or property. Performance standards should be established for noise, vibrations, truck traffic, odors, emissions and glare. Retail uses should be excluded except for the sale of products manufactured on site.

- **Port-Compatible Development** – Large sites with deepwater access and key clusters of port-related businesses should be designated and protected for industrial and port-related activity. However, the City must also nurture Digital Harbor/technology/job-intensive uses of the waterfront. Policies should be geared to protecting the larger clusters of port-related users, and allowing some flexibility for case-by-case decision-making relative to smaller sites and sites that are not part of key clusters of port businesses.

Approaches for High-Visibility Sites and Noxious Uses. Currently, unsightly heavy industrial uses are regulated by the Baltimore City Zoning Code of 1974 or by some individual Urban Renewal Plans. The Code contains mandatory industrial performance standards (noise, vibration, smoke, toxic matter, odor, and glare) for M-1 zoning districts. It provides use and bulk restrictions and yard setbacks for all industrial zoning districts. However, the Code lacks standards for buffering, landscaping and siting of uses. There are no clear siting guidelines for scrap yards and rock crushing operations. Only a few Urban Renewal Plans set such standards. Based on our review of other jurisdictions' approaches, we outline a set of proposed buffering and landscaping standards for uses associated with heavy industry on high-visibility sites or near residences (See Table 10).

There are two possible strategies for the implementation of these standards:

- Add the standards through an amendment to the existing Zoning Code for the City of Baltimore. The standards could be added as part of the requirements for industrial districts or a new overlay industrial zone.

- The standards could become part of a complementary landscaping ordinance that spells out mandatory design and siting guidelines for all land uses in the city.

Table 10: Proposed Buffering and Screening Standards for Heavy Industries

	Element	**Buffering/Screening Standard**
1	Industrial Building	A minimum of 35-foot buffer yard adjacent to residential use. Buffer yard shall contain an average of 1 shade tree per 30 linear feet of the buffer with understory shrub planting and/or 1 evergreen/ornamental tree per 10 linear feet, located in clusters to provide diversity.
2	Parking (adjacent to residential use)	A 25-foot minimum buffer yard (undisturbed where possible) from the adjacent residential property line to the edge of curb or pavement. The buffer may be reduced if a masonry wall, berm (3-foot high hedge) or other design solution is proposed. Buffer yard shall contain an average of 1 shade tree per 30 linear feet of the buffer with understory shrub planting and/or 1 evergreen/ornamental tree per 10 linear feet, located in clusters to provide diversity.
3	Storage areas	A 25-foot wide buffer yard with opaque treatments at all property lines, allowing only for access. Outdoor storage areas to be screened with a minimum height of 6 feet and a maximum height of 10 feet. Stored material may not be stacked or be visible above the enclosure height. Storage should be relegated to the rear yards, side yards as only a second option. It should not be allowed in the front yards.

4	Loading areas	All loading areas consisting of two or more loading spaces, loading docks, vehicular lanes providing access to the above, and service or maintenance areas shall be screened from view in a residential zone. Screen walls shall have a minimum height of 6 feet. Loading areas should be located behind buildings if all possible. The second choice would be along the sides of buildings.
5	Fencing (General)	Fence or wall runs greater than 30 linear feet shall be articulated with architectural offsets and incorporate landscape pockets Wood and chain link fencing should be avoided. Metal, aluminum, iron, steel, or masonry should be the recommended materials. When solid walls are used as fencing, plant materials could be used to soften their hard edges.
6	Service and Refuse areas	Service and refuse areas shall not encroach into the parking setback. Such areas shall be screened with a minimum 6-foot wall height enclosure (as measured from finished grade) These areas should be located in the rear of buildings, especially the refuse.
7	Salvage and Scrap yards	Salvage and scrap yards shall be screened using such that at least 90 percent of the surface area of a vertical plane from the ground elevation to a height of 6 feet is covered.
8	Rock Crushing and Concrete Recycling activities	A minimum distance of 1000 feet shall be maintained from an adjacent residentially zoned property. If a sound barrier is constructed that is capable of reducing sound levels at the nearest residential lot line to a level meeting the performance standards given in the Baltimore Zoning Code, the required distance from residential zones for crushing, processing, and blasting may be reduced to 500 feet.

Rezoning. The proliferation of M-3 zoning along rail lines throughout the city has resulted in an overabundance of heavy industrial land without the performance standards and use restrictions associated with M-1 zoning. This limits the options available to light-industrial businesses that want an attractive setting for their business and compatible neighbors. M-3 zoning does not protect those businesses from incompatible development next door, including scrap yards, rock crushing operations, recycling and other noxious uses. The City should consider a comprehensive rezoning of the city's industrial lands that would concentrate M-3 zoning in

protected clusters of heavy industry in Canton, Fairfield, Hawkins Point, Curtis Bay, Carroll Camden, parts of the Locust Point shoreline and parts of Pulaski-Erdman.

Remaining industrial properties should be re-zoned to M-1 or one of the new industrial zoning categories as appropriate to the existing users and neighboring uses. If option produces too many non-conforming uses, alternative means should be sought to lessen the impact of heavy industrial uses on nearby residential property. For example, controls can be added through the urban renewal plan process.

Additionally, the City should consider revising or adding more specific definitions in the City-wide code to assure that noxious and unsightly uses are reviewed as Conditional (not permitted) Uses in M-2 and M-3. For example, rock crushing and concrete recycling are not specifically defined in the current code, so it is a matter of interpretation as to whether a Conditional Use is required in M-2/3.

The following section evaluates individual industrial areas and recommends future zoning.

IV. Individual Industrial Areas

This analysis focuses on eight specific industrial areas in different parts of the city, shown on Table 11 and Map 2. The selection of these areas for analysis was based on the pressures for changes in zoning to non-industrial uses. Other more stable industrial areas, such as Fairfield and Hawkins Point, were not singled out for focused analysis. Following is a summary of the zoning recommendations, which are discussed in more detail in this section. It should be noted that intense community planning efforts are underway or planned for at least two of the areas below: Locust Point and the Westport section of Carroll-Camden. The recommendations in this study should be viewed as advisory to more intense community planning activities. Also note that areas denoted with an "*" are also addressed in the Unstable Areas analysis, Chapter VII, in that certain subareas of the larger area are analyzed in more detail in relation to change-of-use issues.

Table 11: Industrial Area Zoning Recommendations

Area	Recommended Zoning
Canton*	M-3 except for Mixed-Use for Brewer's Hill and Canton Crossing
Pulaski/Erdman*	M-3 with M-1 near residences
Central Avenue	Commercial and residential
Locust Point*	Port-compatible uses along the water, generally retain M-1 and M-3. Exceptions should be made through the application of the city-wide criteria for change-of-use outlined in Chapter VI.
Carroll Camden*	Industrial or business park west of MD 295, office/residential mixed-use along Middle Branch waterfront
Shipley Hill*	Residential or commercial except for M-3 at south end along rail and M-1 on U.S. 40
Northwest Corridor	Residential or commercial except for M-1 west of Reisterstown Road in Menlo Industrial Park between Northern Parkway and Patterson Avenue
Jones Falls Valley*	Mixed-use for historic building reuse, M-1 east of the Expressway unless economics support mixed uses

Source: BAE Consultant Team, 2002.

Canton Industrial Area

Shown on Map 3, the Canton industrial area is in southeast Baltimore, bounded by the harbor to the south and west, by Boston, Conkling, Dillon Court, Haven, Pratt and O'Donnell streets, the railroad and I-95 to the north, and by Dundalk Avenue and the City line to the east. To the west is a rapidly gentrifying residential district developed to take advantage of several historic warehouse buildings converted to residential and office uses.

Canton is one of the city's premiere industrial districts with an outstanding network of infrastructure support. The Maryland Port Administration operates the Seagirt and Dundalk Marine Terminals, providing deepwater port access for containerized cargo and other cargo. Other privately operated piers are used for coal, break bulk and petroleum. I-95 and I-895, the Harbor Tunnel Thruway, bisect the area with exits at Holabird Avenue, Boston Street, O'Donnell Street and Dundalk Avenue. Multiple railroads serve the area, providing competitive shipping rates.

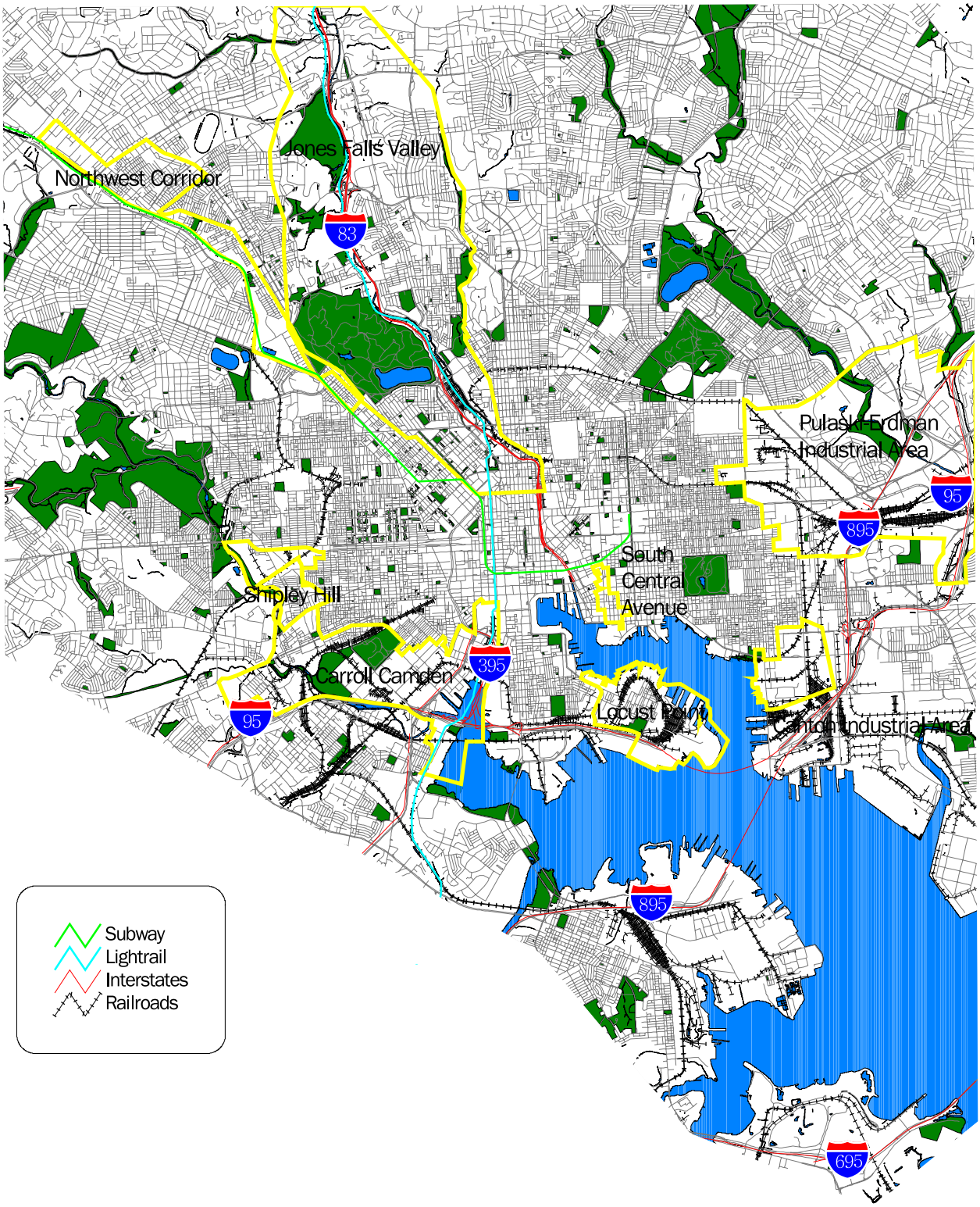
Holabird Business Park offers modern industrial park sites on the former Fort Holabird property with such companies as Guilford Pharmaceuticals, Schmidt Bakery and Phoenix Metals. General Motors assembly plant is located on Broening Highway. Other major businesses include Apex Petroleum, Tulkoff's Horseradish, Consolidation Coal and Rukert Terminal.

The area is almost exclusively industrial with the exceptions of the O'Donnell Heights community east of Broening Highway between Holabird Avenue and O'Donnell Street and the Saint Helena neighborhood south of Holabird Industrial Park at the city/county line. On the northern edge, the district adjoins other residential neighborhoods. The Brewer's Hill complex between Boston and O'Donnell streets at Haven includes 300,000 square feet of multi-story historic industrial buildings on 27 acres.

The recent offering of the 78-acre Exxon property on Boston Street generated proposals for conversion of a former oil tank farm to commercial development, jumping the boundary for non-industrial uses previously established by the Canton Industrial Area Urban Renewal Plan at the Canton Waterfront Park west of Clinton Street. The high demand for Canton housing has sharply increased pressures for changes of use at Boston and Clinton streets and in the Brewer's Hill complex.

Enterprise Zone incentives are available to area businesses. This area is very competitive for industrial use with the main constraint on demand being the very limited availability of property. Other than the Exxon and Brewer's Hill properties, the only other major property is a partially-leased 12-acre site at 2200-2216 Edgewater Avenue.

Industrial Land Use Study of Baltimore
Major Geographic Sub-areas of Study



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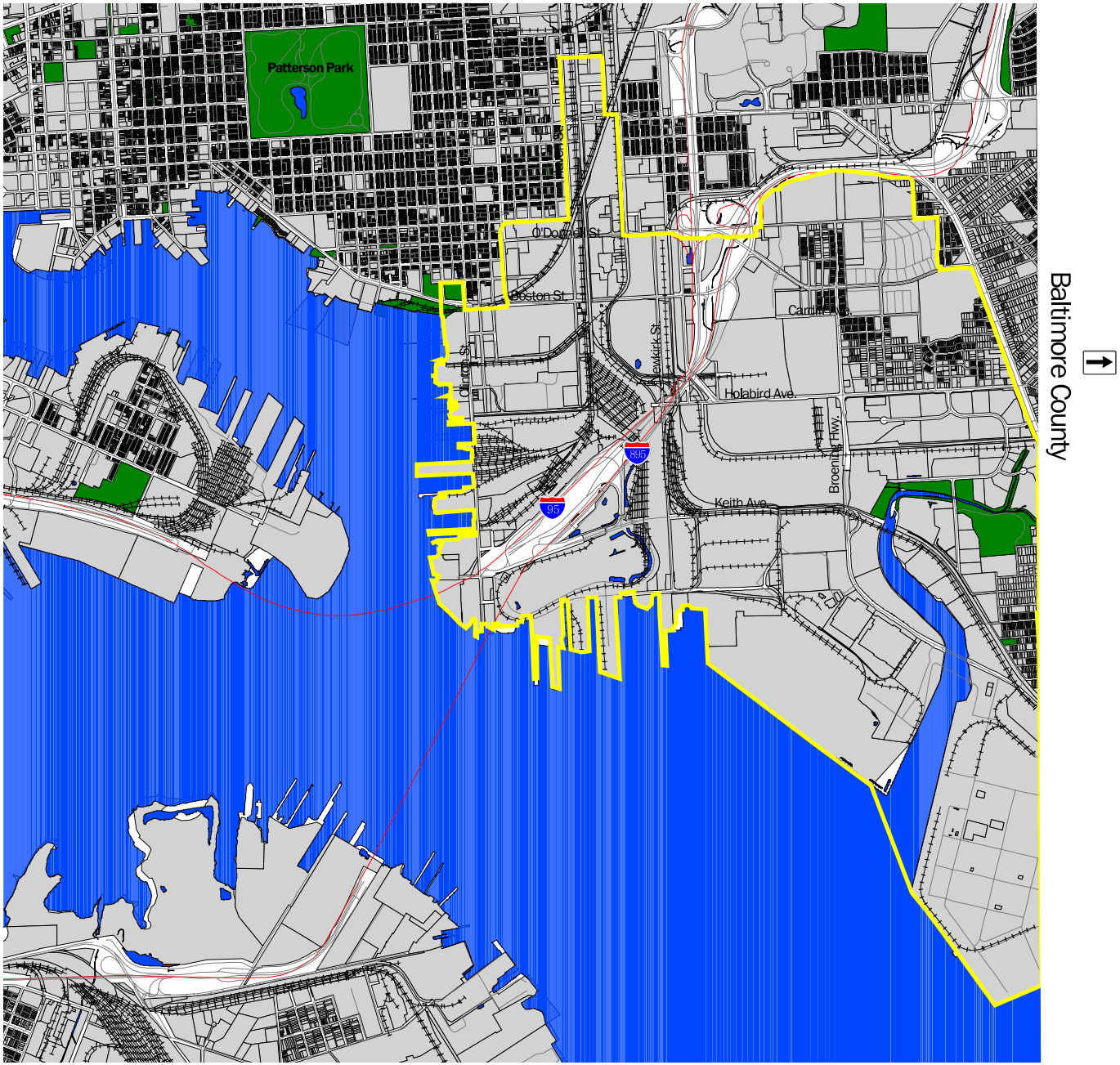
Canton Industrial Area



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Zoning Recommendation. Given the confluence of deepwater, rail and highway and the concentration of industrial uses, the Canton industrial area should retain its M-3 zoning south of the Canton Crossing development (south of Danville Avenue). Reuse of the Brewer's Hill historic buildings will require a change of use because those structures are no longer competitive for industrial use. Urban business or mixed-use zoning would be appropriate. Unsightly and noxious uses along Boston Street should be restricted, perhaps using M-2 zoning with new use restrictions. Note that significant subarea(s) are addressed in more detail in Chapter VII, "Unstable Areas."

Pulaski/Erdman Industrial Area

The Pulaski/Erdman Industrial Area encompasses development along major East Baltimore arterials – Pulaski Highway, Erdman Avenue and East Monument Street. The area is roughly bounded by the city/county line on the east; Eastern Avenue, Kane Street and Lombard Street on the south, Edison Highway on the west and Sinclair Lane on the north. I-95 and I-895 and a myriad of rail lines provide outstanding accessibility. (See Map 4.)

The area's development is characterized by a variety of small businesses, predominantly service-related businesses, including auto repair, construction contractors and industrial suppliers. The area's largest heavy industrial employer is now gone – ARMCO/Republic Steel. The area's long-time industrial history has left many brownfield sites, constrained by environmental contamination, including major portions of the ARMCO Steel site. Most of the area's industrial facilities are dated with limited new construction. Johns Hopkins' Bayview Campus directly south of the area is creating a base of medical and biotechnology-related activity.

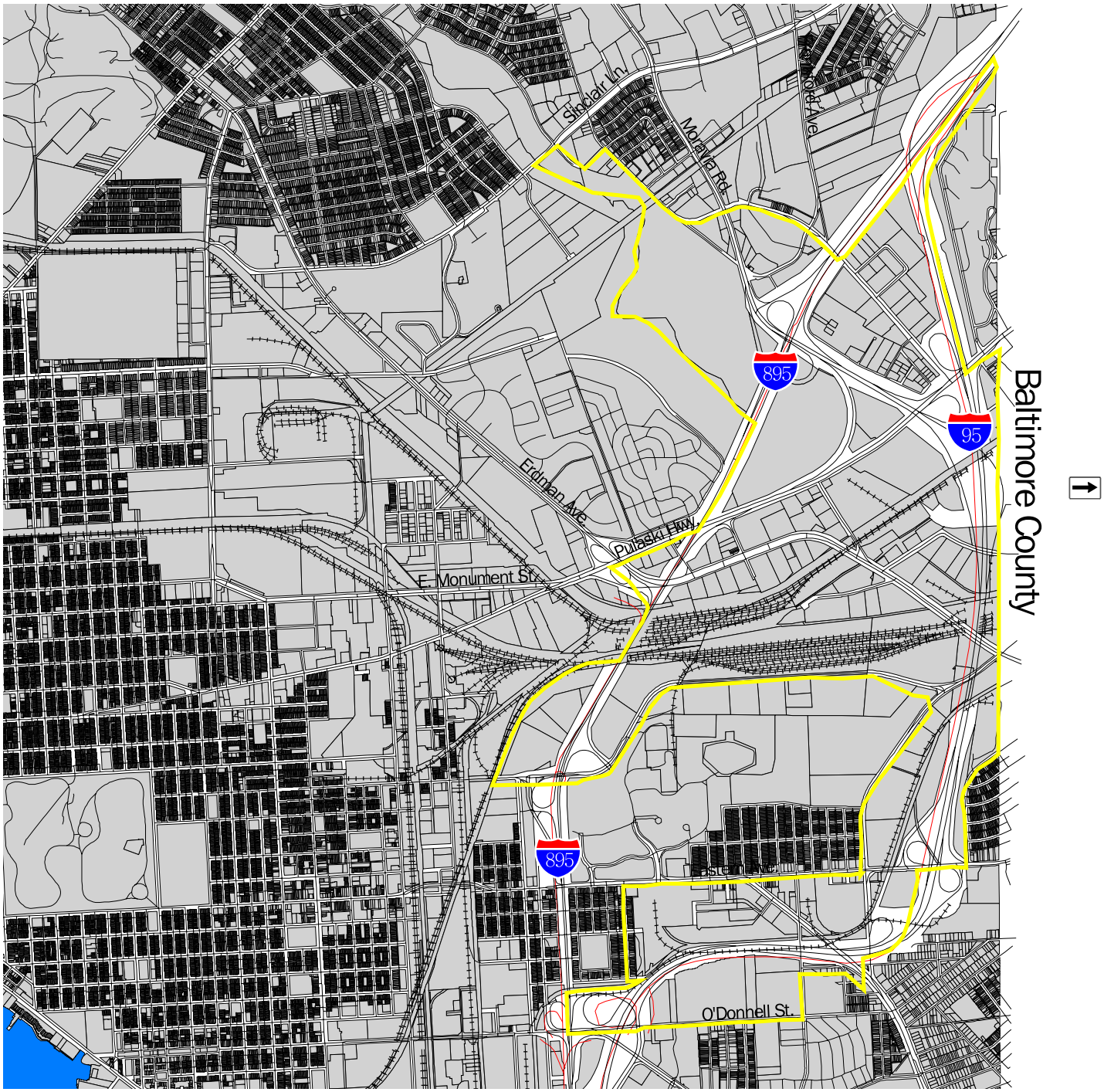
A few residential neighborhoods are mixed in, including Armistead Gardens and Claremont east of Erdman Avenue from Pulaski Highway to Sinclair Lane, an enclave between Herring Run Park and Moravia Road, and Orangeville, a neighborhood between Monument Street and Erdman Avenue east of the Armco Steel site. More extensive residential neighborhoods line the area boundaries to the west and north. Use conflicts have developed at some of those boundaries, including a rock-crushing operation on the western edge of the Armco Steel property in close proximity to a residential neighborhood.

Much of the area is part of the State Enterprise Zone. Brokers and developers report steady demand for sites and facilities in the area, though the demand could be increased by provision of modern sites and buildings. Upgrading of the area's appearance would help to improve its marketability.

Major parcels currently available for development include:

- Former ARMCO Steel site with 70 acres with several manufacturing buildings totaling roughly 500,000 square feet of space, some of which are listed on the Maryland Hazardous Waste List;
- 4201 East Monument Street, a 5.5-acre former scrap yard;
- 4225 Shannon Drive, a 10-acre site owned by the Maryland Mass Transit Administration (MTA) that is impacted by wetlands;
- 3625 East Monument Street, a 9-acre parcel with an 85,000 square-foot building also owned by MTA;
- 4420 East Fayette Street, a 7-acre Norfolk Southern Rail property available for lease;
- 6310 Quad Avenue with a 100,000 square-foot dilapidated building;

Pulaski-Erdman Industrial Area



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- the former Pulaski Incinerator, a 19-acre City-owned property on the Maryland Hazardous Waste list;
- Crown Industrial Center, a 14-acre property with a 150,000 square-foot multi-story loft building on Eastern Avenue; and
- 310 East Biddle Street, a two-acre property with an 80,000 square-foot loft building.

Zoning Recommendation. The Pulaski/Erdman Industrial Area should be retained as industrial land. It has superior accessibility, larger lots, an established industrial base and limited residential encroachment. Rezoning of some M-3 land near residential areas to M-2 or another zone with performance standards, use restrictions and protections for nearby residential properties would be appropriate. Pulaski and Monument Street are high-visibility corridors and the measures discussed in the "Approaches for High-Visibility Sites and Noxious Uses" section should be applied. Note that significant subarea(s) are addressed in more detail in Chapter VII, "Unstable Areas."

Central Avenue South Industrial Area

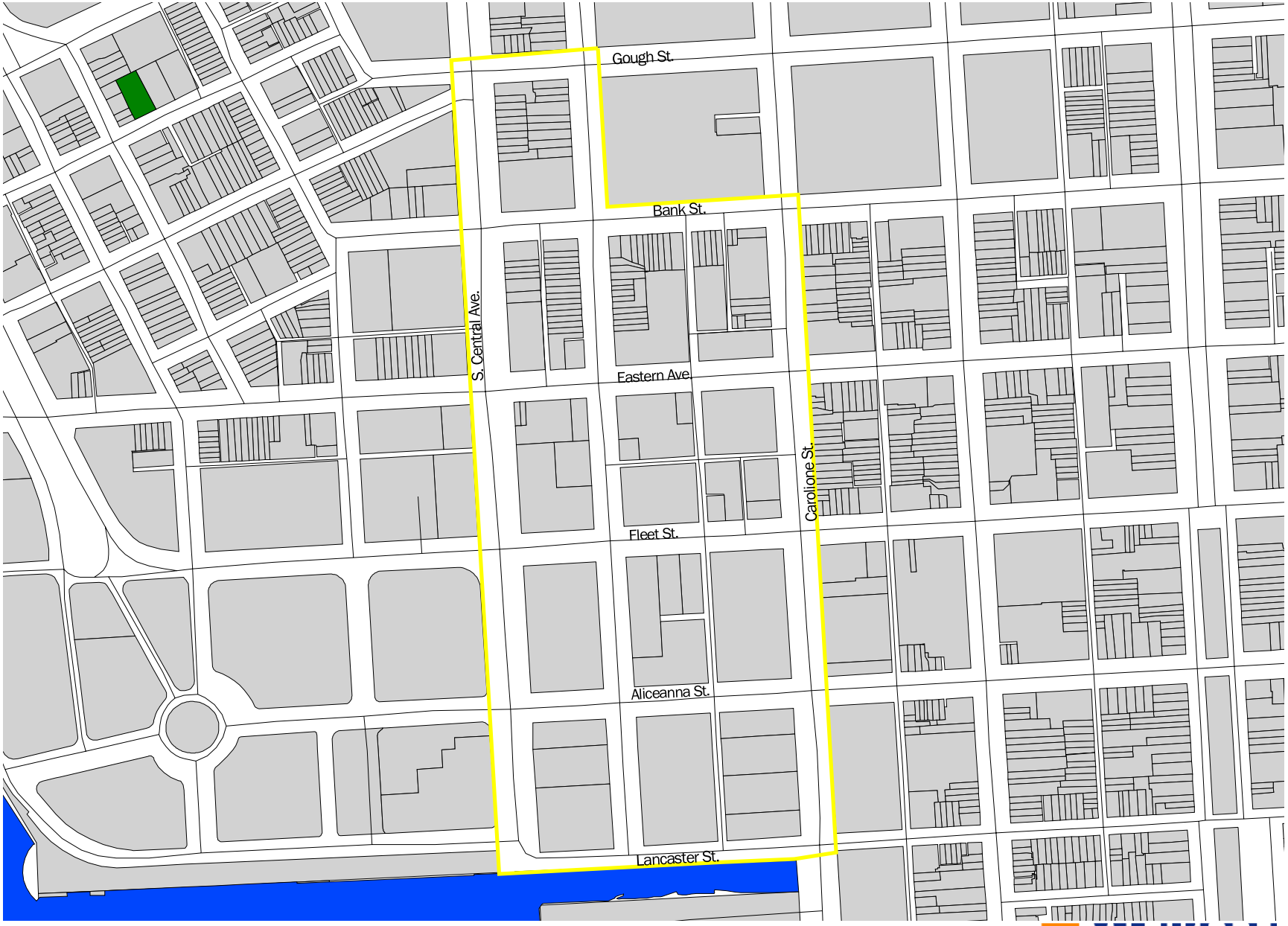
The Central Avenue South Industrial Area is a small cluster of industrially-zoned sites along Central Avenue in East Baltimore between Inner Harbor East and Little Italy on the west and Fells Point on the east. The area is bounded by S. Central Avenue on the west, Lancaster Street on the south, Caroline Street on the east and Bank and Gough streets on the north. (See Map 5.) The area is subject to enormous pressures for conversion from industrial use to commercial and residential uses. Commercial redevelopment is proceeding on the southern end south of Eastern Avenue with conversion of historic warehouses. Immediately west across S. Central Avenue in Inner Harbor East, Sylvan Learning Systems occupies three office buildings, including one with a Whole Foods Market. Inner Harbor East also includes a new apartment building and a second proposed residential building.

At the north end, the area abuts Clarence Perkins Home, a low-income housing development.

Much of the existing industrial use north of Eastern Avenue is small businesses, particularly auto repair uses. They are typically on small lots with no provision for off-street parking or access by modern trucks. Trucks often block the street while making deliveries or pick-ups from businesses in the area. Many of the buildings are deteriorated.

Zoning Recommendation. The Central Avenue South Industrial Area is no longer a viable industrial area. Its key advantages are easy access to service customers in Downtown, Inner Harbor East and Fells Point and low-cost building space. Other areas can serve those same customers without impacting viable commercial districts. Properties in the area should be rezoned to B-3-2 to allow non-industrial business and residential uses to redevelop the area.

Central Avenue South



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Locust Point Industrial Area

The Locust Point Industrial Area encompasses the Locust Point peninsula from the Harborview residential complex and Key Highway on the west to the railroad/I-95 on the south excluding the Port Covington development and then extending down to the water to pick up the South Locust Point Terminal. (See Map 6.) The area is served by I-95 and several railroads. Key Highway provides a direct link to the Inner Harbor and Downtown Baltimore.

The Maryland Port Administration (MPA) owns property on both the north and south side of Locust Point and operates the South Locust Point Terminal. The Archer Daniels Midland (ADM) grain elevator on the north side of Fort Avenue is shut down and available for redevelopment.

Though demand from port-dependent industry is sporadic for sites with direct access to deepwater for ocean-going vessels, demand still exists. C. Steinweg & Co. operates a private terminal for transportation, distribution and storage of metal products on the north shore between MPA's property and Fort McHenry. Located there since 1989, the company has invested $10 million in its facilities, which provide 60 full-time jobs.

Amstar (Domino Sugar) has a major facility on the water just east of Key Highway. To ensure the long-term viability of that operation, the City's 1986 Urban Renewal Plan for Key Highway was restricted to an area west of Webster Street and the 1987 Key Highway East Urban Renewal Plan established protections to retain the shoreline's industrial uses. Three marine businesses are located between the Harborview residential tower and Amstar on Key Highway – General Ship Repair, Tidewater Yacht Service and a retail outlet for marine supplies. Such industrial and port-compatible uses are a good buffer for the Amstar operation.

The former Procter & Gamble site on the harbor between Amstar and Westway Terminal Company, Inc., west of the North Locust Point Marine Terminal was converted to office use by Struever Bros., Eccles & Rouse with an investment of $67 million. The Tide Point historic industrial buildings on a 20-acre site have become a new hub for technology-based companies with tenants such as E.magination Network, LLC, Advertising.com, Inc., and Raven Technologies, Inc.

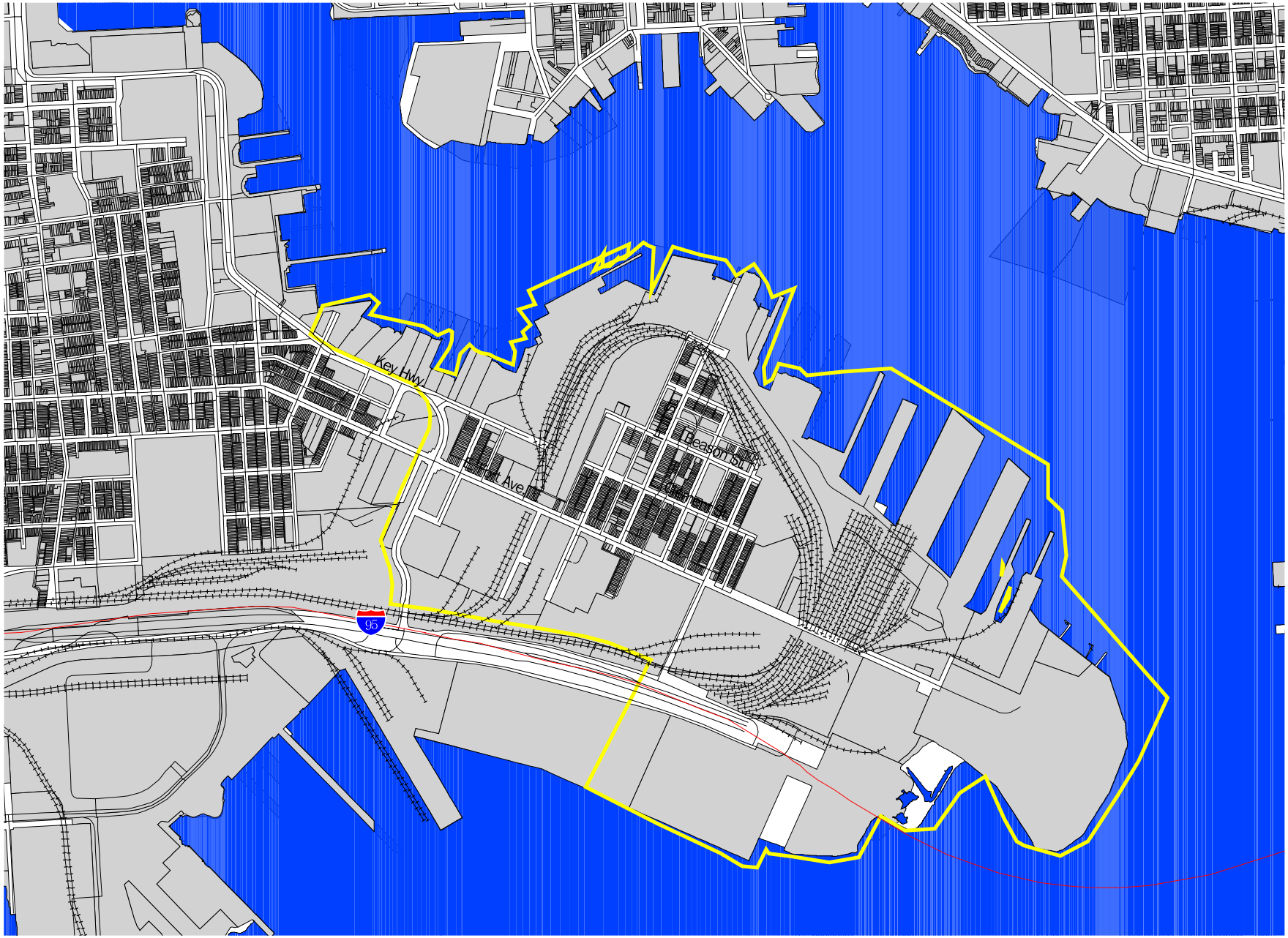
The former White Paint/Supreme Aluminum facility at 921 East Fort Avenue is being redeveloped as an industrial PUD which allows office and limited commercial activity.

Currently available industrial sites include:

- a former General Electric plant at 920 East Fort Avenue, a cleared 1.8-acre site that has been held off the market due to PCB contamination; and
- a 3.6-acre parcel on McComas Street next to the North Locust Point Marine Terminal.

Additional industrial properties proposed for change of use to residential include the former Procter and Gamble warehouse, the Chesapeake Paperboard plant on East Fort Avenue, and the former ADM site. The ADM and Procter and Gamble conversions can be justified because: there is significant adjacent residential property; the sites are not waterfront/maritime properties; the change does not appear to jeopardize adjacent viable industries; and, in the case of ADM, the extraordinary cost of resurrecting out-moded industrial space dictates higher value reuse. However, Chesapeake Paperboard is not recommended for residential reuse. (See Chapter VII, "Unstable Areas".)

Locust Point



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To the southeast outside the study area is the Port Covington site, a 62-acre former brownfield with deepwater, rail and highway access. Following an expensive remediation by the City of Baltimore and CSX Railroad, the Baltimore Sun built its printing plant on the site. Originally planned for an office park, the property sat fallow for many years, constrained by a high asking price and use restrictions. Much of the site has now been redeveloped for a big-box retail center anchored by Wal-Mart and Sam's Club. Roughly 14 acres remain undeveloped, including waterfront property with piers.

Zoning Recommendation. Key Highway and Locust Point waterfront are among some of the city's most competitive locations for new office and residential development due to the stunning water views across to the Inner Harbor and Fells Point. Without a clear indication of the City's commitment to protecting waterfront sites for industrial use, these properties would quickly be priced well above the price that industry could afford to pay. Continued residential encroachment could constrain the efficient operation of Amstar and other existing deepwater port users. The greatly diminished supply of deepwater industrial sites argues against release of any additional waterfront sites to non-industrial use.

Generally, other industrial sites along East Fort Avenue and elsewhere in the Locust Point Industrial Area should retain their industrial zoning with rezoning to M-1 on sites near residential areas. The combination of highway and rail access with the established concentration of industrial uses is an important economic asset. Exceptions should be made through the application of the city-wide criteria for change-of-use outlined in Chapter VI.

It should be noted that intense community planning efforts are underway for Locust Point. The recommendations in this study should be viewed as advisory to more intense community planning activities. Note that significant subarea(s) are addressed in more detail in Chapter VII, "Unstable Areas."

Carroll Camden Industrial Area

An established concentration of industry, the Carroll Camden Industrial Area is defined for this study to include over 12,000 acres of land roughly bounded on the east by the Middle Branch waterfront; on the south by the western pierhead line north of Waterview Avenue, the B&O Railroad Right-of-Way and I-95; on the west by the B&O Railroad Right-of-Way, Monroe Street and Washington Boulevard; and on the north by West Ostend Street, Russell Street and Oriole Park at Camden Yards, as shown on Map 7. Extensively served by CSX Railroad, the area has highway access from I-95 at Caton Avenue, Washington Boulevard and Russell Street. MD 295 has an interchange at Russell Street (Westport), and I-395 serves Oriole Park and Martin Luther King, Jr. Boulevard. The Carroll Camden Master Plan calls for upgrading of the Washington Boulevard interchange to provide access from I-95 south. The plan also recommends constructing I-95 access ramps at Russell Street/MD 295 and access improvements from MD 295 to Westport. Carroll Camden has direct highway access to Baltimore-Washington International Airport, just 10 miles away. The area's excellent highway visibility also gives it a competitive advantage.

Directly north of Oriole Park is the University Center with the University of Maryland's professional schools and the University of Maryland Medical Center. The new Gwynns Falls Trail will provide bicycle and pedestrian access through the area to the Middle Branch.

The area southeast of the CSX rail lines and Carroll Park to the waterfront is well-insulated from residential encroachment. The northern portion of the area north of Wilkens Avenue, extending

into Shipley Hill, is heavily impacted by residential uses. Historically, industrial development along the rail lines was surrounded by residential uses. The remaining industrial sites are typically undersized with difficult access not suitable for modern trucks. Westport and the waterfront along the Middle Branch, the southeastern portion of the area, includes the now-closed Carr-Lowrey Glass Company manufacturing operation and a former Baltimore Gas & Electric generation plant and substation.

Available industrial properties include:

- the Durrett-Sheppard Building at 1201 Wicomico Street, a 396,000 square-foot building on 16 acres affected by a former coal gasification plant listed on the Maryland Hazardous Waste List;
- Southgate Industrial Park at 2121 Wicomico Street with 17.3 acres and a 150,000 square-foot building that has completed environmental remediation;
- 2100 Haines Street, a 3.1-acre site;
- the Warner Street corridor, 15 acres being acquired by Baltimore Development Corporation in the 1400, 1500 and 1600 blocks of Warner Street and the 1500 block of Russell Street;
- the Valspar Corporation property at 1401 Severn Street, a 160,000 square-foot building on 2.3 acres for which a remediation plan has been submitted;
- the 6.3-acre former United Iron & Metal site at 2365 Wilkens Avenue and 611-630 S. Catherine Street, which is impacted by large piles of metal scrap material; and
- the former Continental Foods property at 2730 Wilmarco at the Crossroads Business Park, including a 170,000 square-foot building on 9.7 acres.

Near the I-95 Caton Avenue interchange, Baltimore Development Corporation has created the Crossroads Business Park with modern structures and infrastructure. The nearby DeSoto Business Park offers modern showroom/warehouse space for multiple tenants.

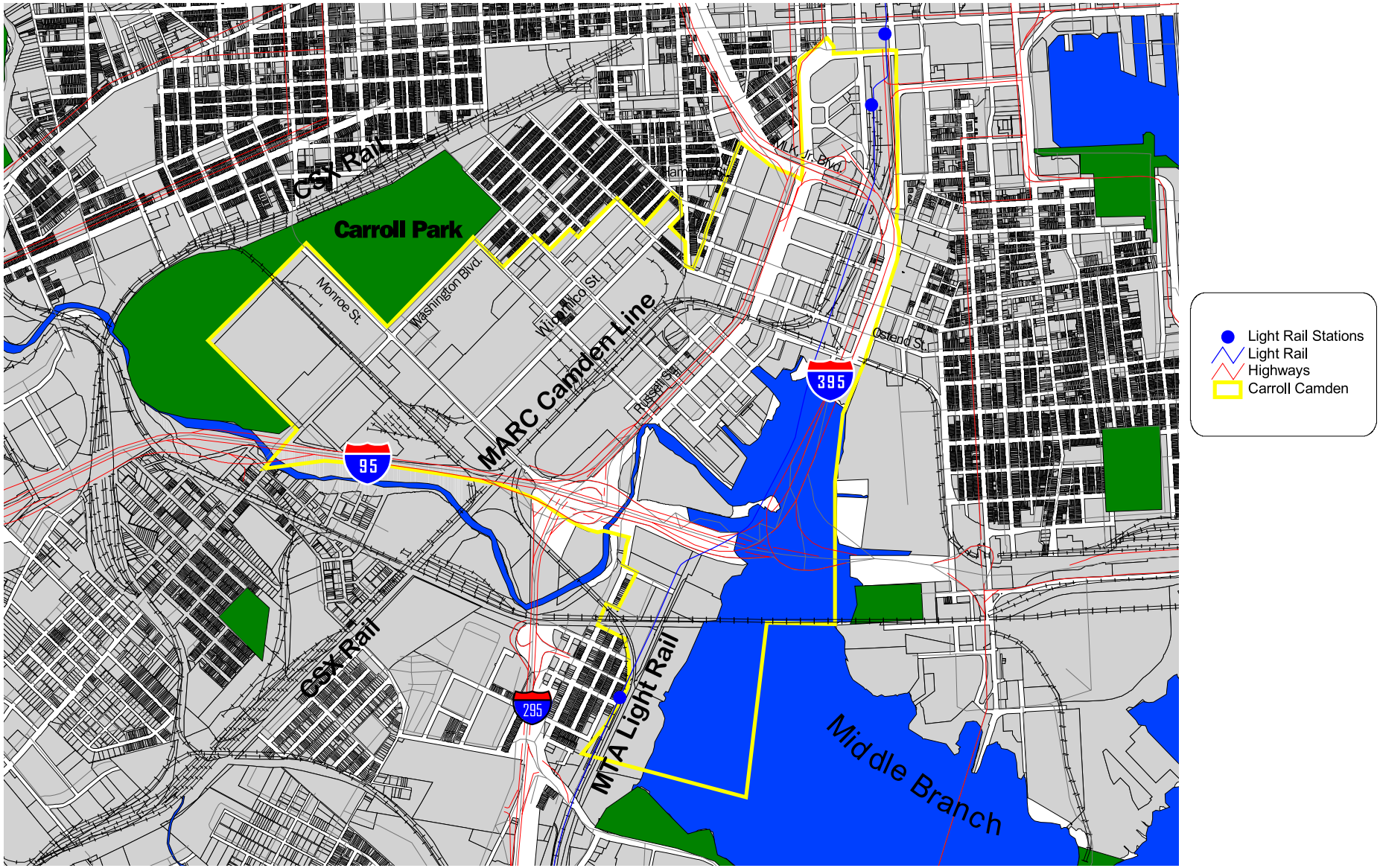
The historic multi-story 1.3 million square-foot warehouse vacated by Montgomery Ward in 1985 is being renovated for office use with the Maryland Department of Environment as its anchor tenant. The four-acre Parker Metals site at 1301 S. Howard Street near Ravens Stadium is proposed for conversion to office use. The Warner Street corridor is being considered for office/technology and nightclub use.

Major businesses in the area include W. Burnett & Company polyurethane foam manufacturers, Bindagraphics, Inc., B. Greene & Company food wholesalers, Kaydon Ring & Seal, Victor Graphics and Teco Industries, Inc.

Carroll Camden is potentially one of the city's most competitive industrial areas, given its highway and rail access and highway visibility. However, obsolescent buildings, inadequate infrastructure, scrap yards and crime are constraining current demand. Modern facilities supported by good roads and infrastructure could compete very well in the portion of the area south of Wilkens Avenue.

Zoning Recommendation. The Carroll Camden industrial area from Russell Street to Carroll Park should be zoned for modern industrial park and/or business park redevelopment. The area north of I-95 from Russell Street east to the Middle Branch waterfront is being assembled for redevelopment and should be rezoned for commercial, residential and/or urban business uses that can take better advantage of the proximity to downtown and the waterfront. Further south, the Westport waterfront is more suitable for residential or office uses and should be rezoned.

Carroll Camden Focus Area



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It should be noted that intense community planning efforts are underway or planned for the Westport section of Carroll Camden. The recommendations in this study should be viewed as advisory to those community planning activities. Also note that significant subarea(s) are addressed in more detail in Chapter VII, "Unstable Areas."

Shipley Hill Industrial Area

Bounded by Gwynns Falls on the west, Frederick Avenue on the south, S. Calverton Road and N. Warwick Avenue on the east and the railroad south of U.S. 40 on the north (Map 8), the Shipley Hill Industrial Area is an industrial location past its time. Developed along rail lines and U.S. 40, the area includes a jumble of industrial, residential and commercial uses that constrain efficient industrial operations. The sites are small with inadequate facilities for on-site parking and loading and served by narrow residential streets unsuited to modern trucks. Blighted and deteriorated conditions in the surrounding neighborhoods and the associated crime make it very difficult to attract new investment to the area.

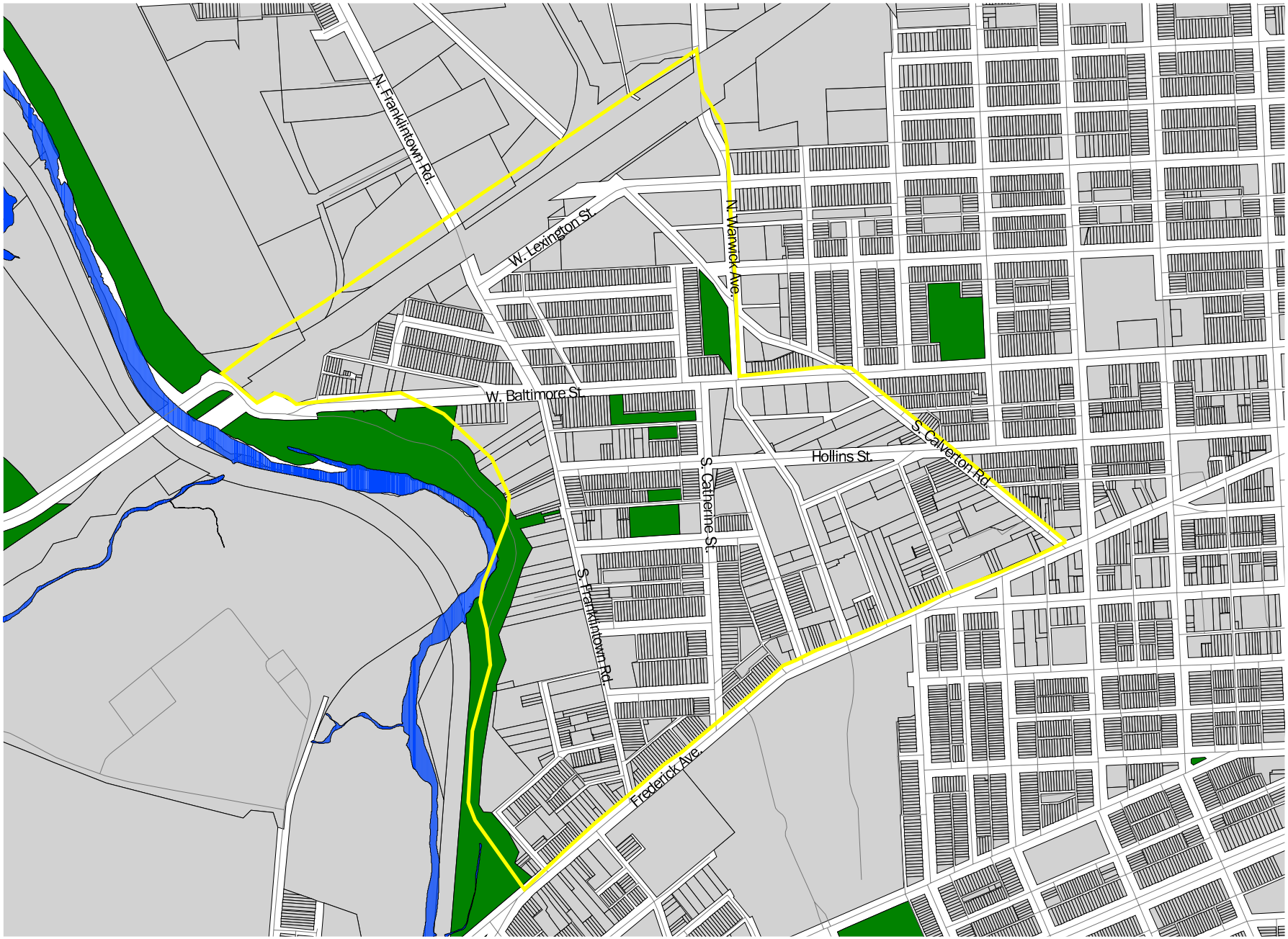
Available industrial properties include:

- the former Lenmar site at 150 S. Calverton, a 4.0-acre site listed on the Maryland Hazardous Waste List;
- the former Maryland Lumber Company facility at 2601 Franklin Street, a 3.0-acre site that is currently owned by a church; and
- the former Eigenbrott Brewery Complex, a historic multi-story brick structure at Hollins Street and Warwick Street, which is proposed for conversion to senior housing.

The only Shipley Hill properties that can compete for industrial tenancy are the industrial cluster on U.S. 40 and one on the southern edge of the district at the B&O rail line adjacent to Carroll Camden.

Zoning Recommendation. The Shipley Hill industrial properties are no longer competitive for industrial use. They should be rezoned for residential or commercial use. Properties adjacent to Gwynns Falls should be acquired for park land or residential use. Industrial properties along the B&O rail line should be integrated into the Carroll Camden industrial district. The industrial cluster on U.S. 40 should remain light industrial. Note that significant subarea(s) are addressed in more detail in Chapter VII, "Unstable Areas."

Shipley Hill



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Northwest Corridor Industrial Area

The Northwest Corridor Industrial Area extends to the northeast along Liberty Heights Avenue and Reisterstown Road, bounded on the south by the railroad north of Wabash Avenue, on the west by Fords Lane, on the north by Reisterstown Road, Northern Parkway, Park Heights Avenue, Garrison Avenue and Auchentoroly Terrace, and on the south by Fulton Avenue. (See Map 9.) The area is primarily residential with commercial and service operations on Reisterstown Road and small industrial businesses along the rail line.

The area's industrial parcels are small with obsolescent buildings occupied primarily by auto repair shops. They lack visibility from major thoroughfares and rely on the street for employee parking and staging. The roads typically are not designed for modern trucks.

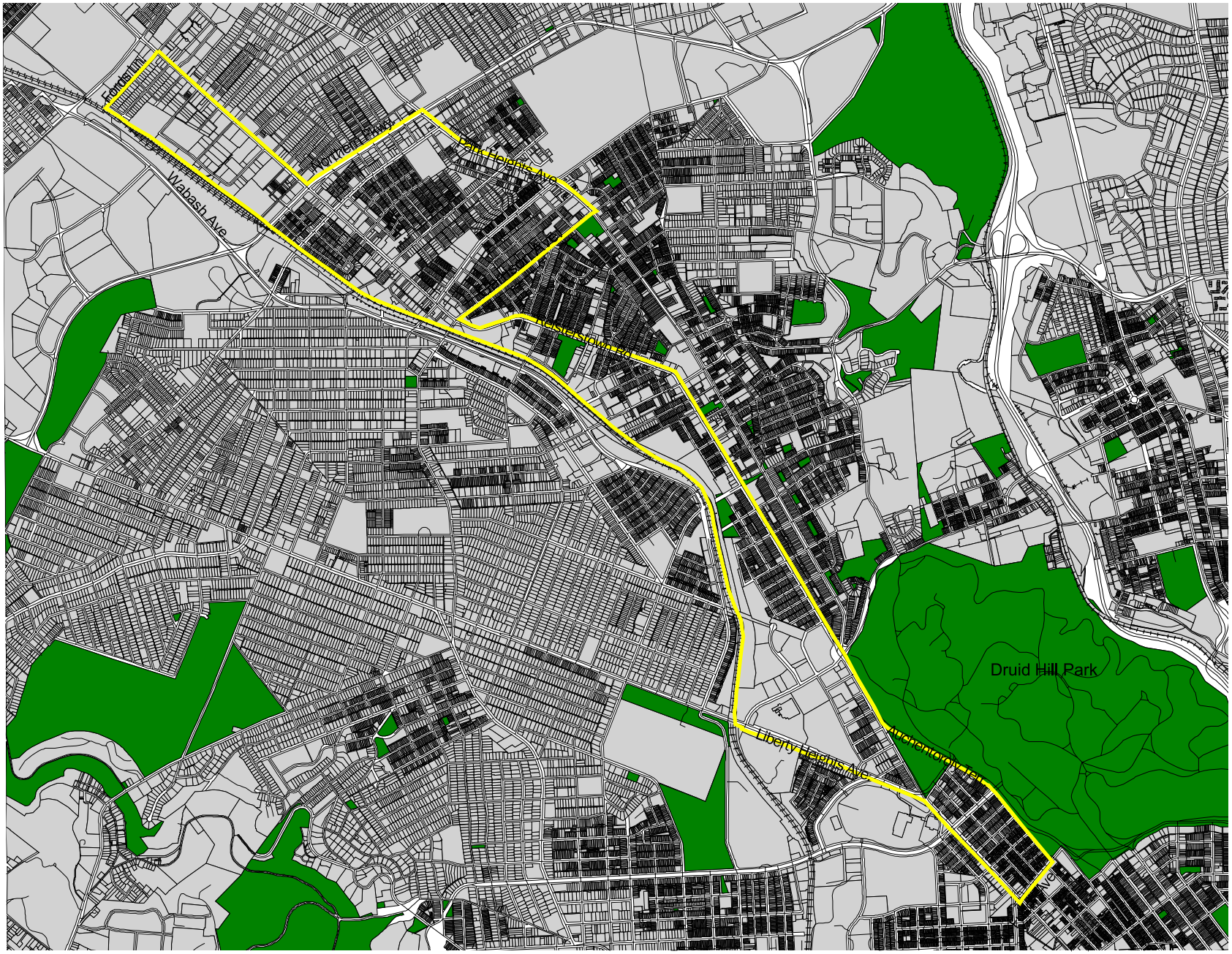
The Menlo Industrial Park is a small M-1 area west of Reisterstown Road between Northern Parkway and Patterson Avenue along Primrose Avenue, Oakleaf Avenue, Amos Avenue, Menlo Drive and Pinkney Avenue with modern facilities and viable businesses. The area is occupied by a number of light industrial businesses in modern one-story buildings with loading docks and parking. Businesses include Schleiders Caterers, Martin Bamberger Food Equipment, Dreamwoods Custom Cabinetry, Gourmet Bakery Specialties, National Instrument Company, and Huber & Sons Landscaping.

At the area's northern end is the Seton Business Park developed by the Baltimore Development Corporation to provide modern business park sites to office and service operations. Four parcels with a total of 42 acres are available for sale in Seton.

The Northwest Corridor Industrial Area has no major industrial properties currently available.

Zoning Recommendation. Other than the Menlo Industrial Park, the industrial properties in this corridor lack the access, size and infrastructure required to be competitive for industrial use. Surrounded by residential uses, many of the businesses are blighting the residential neighborhoods. These industrial lands should be rezoned to residential or other uses more compatible with the surrounding neighborhoods.

Northwest Corridor Enterprise Zone



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Jones Falls Valley Industrial Area

The Jones Falls Valley area is defined for this analysis as the area bounded by Madison Street on the south, Holiday Street, Maryland Avenue, Wyman Park Drive, San Martin Drive and Stony Run on the east, the City/County line on the north, and Greenspring Avenue, Reisterstown Road and Druid Hill Avenue on the west. (See Map 10.) The industrial portion of that area, however, is much smaller. Historically developed along the Jones Falls and the railroads, the area's industrial facilities are most concentrated near and under the Jones Falls Expressway (I-83) south of Cold Spring Lane and north of North Avenue. The historic mill buildings constructed to take advantage of power and water from Jones Falls are now being used by a variety of small businesses, though some stand vacant, needing major reinvestment before they can be reused.

The area benefits from access to relatively affluent residential neighborhoods. Several carpenters, artisans and other craftspeople have located in the area, taking advantage of low-cost existing space in old mill buildings and other industrial facilities.

Highway access is limited to I-83 with interchanges at North Avenue, 28th/29th Street, Falls Road/Druid Hill Park, Cold Spring Lane and Northern Parkway. However, sites some distance from those interchanges still benefit from highway visibility. Access to industrial clusters at 41st Street requires traveling through commercial traffic and a residential neighborhood. The flood plain associated with the Jones Falls impacts several of the area's industrial properties.

Access to the industrial properties along Clipper Mill, the railroad and Jones Falls is very constrained by narrow roads not designed for modern trucks.

Meadow Mill, the former Londontown coat manufacturing facility, has been converted to office space, taking advantage of the adjacent Woodbury light rail station. The conversion of the Steiff Silver manufacturing plant to office and industrial uses accommodates 330 jobs.

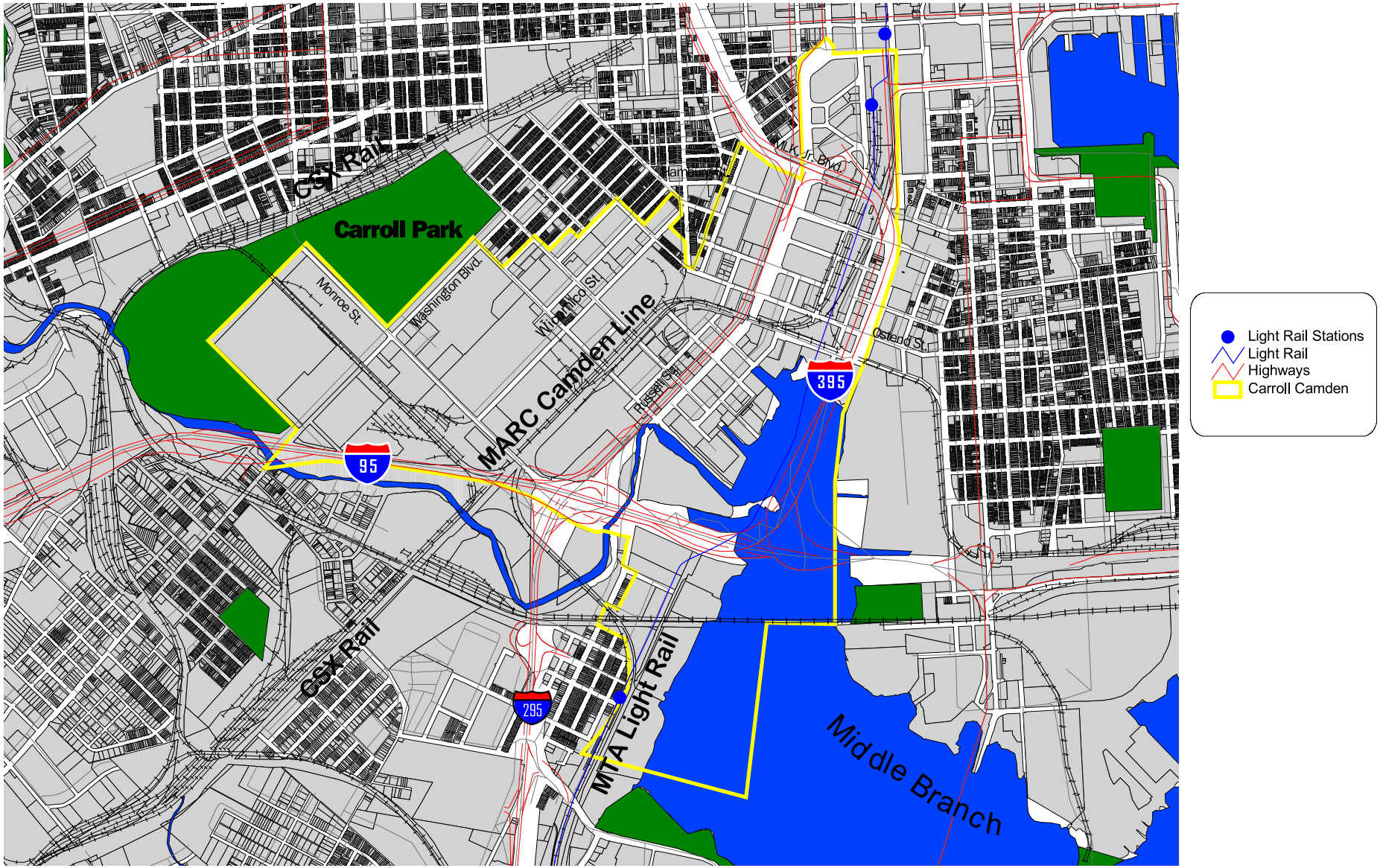
Major businesses include Pepsi-Cola Bottling, Lifelike Products, Sears Appliance Repair, Hedwin and WBAL/WJZ TV.

The Jones Falls Valley Plan contemplates conversion of several industrial properties to commercial and/or residential use, including:

- the Clipper Mill property, a 17-acre site at 3500 Clipper Road;
- the Hooper property, a 10-acre site on Druid Park Drive directly north of the Clipper Mill;
- Mumaw Plumbing, a 2.2-acre parcel adjacent to the Hooper property on Druid Park Drive;
- the Sears and Hedwin sites on 41st Street at I-83;
- Ilex Construction, a 1.7-acre property at 1700 Union Avenue;
- the Lifelike Products facility on Union Avenue;
- the 5.2-acre Komar properties at 3300 Clipper Road;
- the Loan Brothers facility at 1625 Union Avenue; and
- the Sisson Street station at Howard, Sisson and 26th Street.

The Plan also proposes that the Potts & Callahan construction equipment storage yard on Falls Road beneath the 28th Street ramp be converted to park space.

Carroll Camden Focus Area



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BALTIMORE DEVELOPMENT CORPORATION

Zoning Recommendation. Most of the area's industrial sites are marginally competitive for industrial use, particularly heavy industry. The associated truck traffic conflicts with commercial and residential traffic and impacts residential neighborhoods. The historic mill buildings in the area should be rezoned for mixed-use development, offering the opportunity to blend artist live/work space with residential units, offices and light industrial/technology uses that can meet stringent performance standards. Most of those structures can no longer attract industrial users except at rents that do not support renovation and preservation.

Where non-historic industrial properties are conflicting with adjacent residential uses, they should be rezoned M-1 for light-industrial use or M-2 with additional performance standards. The concentration of light industrial uses at the 28th and 29th Street ramps from I-83 should be given M-1 or urban business zoning. Note that significant subarea(s) are addressed in more detail in Chapter VII, "Unstable Areas."

V. Economic and Fiscal Benefits of Development

The following analysis portrays the fiscal impact of varying development scenarios on an actual site within the Carroll-Camden submarket. The economic and fiscal impact analysis was performed in adherence to realistic development scenarios for specified use types. Milestone Associates projected the fiscal and economic impacts to Baltimore City of developing the site for the following alternative uses:

- General Office
- Flex/Office/R&D
- Manufacturing/Heavy Industrial
- Warehouse Distribution
- Big Box Retail

Each specific use type analysis provides a summary of anticipated recurring annual taxes to be derived from the operation of the project. These taxes include real property taxes, employees' City personal income taxes and business personal property taxes. Other impacts detailed in each analysis include the number of jobs that could be accommodated on the subject site and the estimated salaries associated with those jobs. Employee density assumptions were derived from Urban Land Institute's *Business and Industrial Park Development Handbook*. Salary estimates were obtained from the Maryland Department of Labor and Licensing, Baltimore City Industry Series, 2000 and interviews with local employers.

The economic impact analysis estimates the fiscal impact to the City of Baltimore from the various development scenarios. The prototypical parcel used for this analysis is located in the Carroll-Camden sub-market of southwest Baltimore. The parcel has 1.5 acres and the physical characteristics to accommodate all of the outlined uses except big box retail due to lot size limitations. To provide a meaningful comparative overview, the fiscal impact factors associated with big box retail reflect fiscal impact per 1.5 acres of development.

Fiscal Analysis

The detailed calculation of the fiscal impacts of different land uses is shown in Appendix Tables A-3 through A-7.

Income Assumptions. This analysis utilized published 2001 average wage data by industry derived from the Baltimore City Maryland Department of Labor and Licensing in addition to the Bureau of Economic Analysis Regional Income Data. When deemed appropriate, these published salary data were adjusted to more accurately reflect actual salary information provided by brokers and employers.

Land Use	Average Annual Salary
General Office	$42,500
Flex/Office/R&D	$42,263
Manufacturing/Heavy Industry	$41,750
Warehouse Distribution	$45,600
Big Box Retail	$18,101*

*Average of full-time, part-time, and salaried employees.

Tax Rate Assumptions. 2002 tax rates were obtained from data from the Comptroller of Maryland.

Personal Income Tax (Baltimore City)	3.10%
Real Property Tax (Baltimore City)	$2.328 per $100 Market Value
Business Personal Property Tax Rate	$5.82/$100 assessment

Density Assumptions. Density assumptions were derived from the Urban Land Institute and Milestone Associates Inc.

Land Use	Employees per 1,000 Square Feet
General Office	4.0
Flex/Office/R&D	2.4
Manufacturing/Heavy Industry	1.67
Warehouse Distribution	0.40
Big Box Retail	2.0

Summary Findings

Based upon the methodology outlined above, the analysis shows that general office and big box retail are fiscally superior uses of the subject site in terms of direct tax benefits generated by the project. (See Table 13.) Flex/R&D follows as a close third and provides almost the same amount of annual tax revenues as big box retail. As a result of high employee density ratios and relatively high average employee wage earnings, general office significantly exceeds the other land-use alternatives in terms of tax dollars generated. Low employee density ratios and relatively low assessed property values result in warehouse distribution yielding the least amount of direct tax benefits for the City among the alternatives considered. The details of the analysis are shown in Appendix Tables A-3 through A-7.

It should be noted that even though big box retail ranked second among the five uses explored in terms of total annual tax dollars generated on the subject site (per 1.5 acre), its economic benefits are relatively limited. While retail uses will typically hire a larger percentage of their workers from within the city, average wages are generally low. More importantly, the success of big box retail stores is typically at the expense of existing local merchants. As neighborhood retail declines due to big box retail competition, neighboring residential and commercial property values are oftentimes negatively impacted as well. Big box retail may displace and destabilize historically stable retail and commercial districts. Unless the big box retail prevents residents from shopping outside of the city, its retail sales gains are largely at the expense of existing merchants.

In evaluating the long-term returns to the City from a particular parcel of land, the cost of required infrastructure must be taken into consideration. Big box retail and office space typically necessitate higher investments in public infrastructure improvements to address the impact of significantly increased traffic.

Also to be considered are the spin-off/multiplier effects associated with uses that bring new dollars to the city economy. Retail and service uses that primarily recycle money already in the economy have minimal spin-off benefits to other businesses. Manufacturing, office tenants with

clients outside the city and technology companies typically bring in new dollars and support for jobs in other city and regional businesses.

Table 12: Employment and City Tax Revenues by Land Use, Fiscal Year 2002

Use Type	Number of Employees Total	Number of Employees City Residents	Income Taxes Balt. City*	Real Property Taxes	Personal Property Tax	Total Tax Revenue
General Office	102	25.5	$33,596	$41,299	$10,325	$85,220
Manufacturing/Heavy Industrial	21	8.4	$10,872	$11,966	$2,991	$25,829
Flex/Office/R&D	31	15.4	$16,261	$18,773	$4,693	$39,727
Distribution Warehouse	5	4.5	$3,906	$11,966	$2,991	$18,863
Big Box Retail	275	24.7 **	$13,860	$34,920	$8,730	$57,510

*Taxes based upon a 1.5-acre developable site.
**The total number of workers is 247 or 24.7 per 1.5 acre.

Source: Milestone Associates

VI. Change-of-Use Decisions

History of Change-of-Use Projects

Over the last two decades, Baltimore has seen significant shifts from industrial use to other land uses. Appendix Table A-8 lists major conversions over the past 10 to 15 years.

Considerations in Change-of-Use Decisions

Developing a comprehensive approach to change-of-use decisions is quite complex because of the multitude of goals and issues to be considered. Finding the appropriate balance among those goals will depend on the circumstances surrounding each decision, because no two projects are alike.

The City/BDC key goals to be achieved in setting policies for industrial land use include:

- Provide well-paying jobs for city residents by maintaining an adequate supply of industrial land and encouraging full utilization of land and buildings for economic uses.
- Protect the long-term viability of industrial uses by protecting them from encroachment by incompatible uses.
- Encourage industrial investment and reinvestment by providing greater certainty as to the long-term protection of their right to operate.
- Provide for the growth of "Digital Harbor" technology-oriented businesses that may be attracted to waterfront or historic industrial buildings and sites.
- Maintain flexibility so that the City's land use patterns can shift with changes in its economic structure.
- Generate additional tax revenues for the City.
- Reinforce viable residential and commercial districts by reducing land use conflicts.
- Avoid speculative land price increases that drive industry out of the city.
- Avoid diversion of office tenants from the Central Business District.
- Avoid undue competition with existing retail districts.
- Encourage clean up and reuse of environmentally contaminated properties.
- Streamline the process so that the approval and permitting process does not impede desirable development.

Evaluation Process and Guidelines

In reviewing a request for change of use, the Department of Planning should first evaluate the site's suitability and competitiveness as an industrial site. We recommend developing a checklist of key evaluation factors to ensure consideration of relevant factors as follows:

Checklist for Industrial Properties Proposed for Change of Use

Deepwater
Immediate waterfront with deepwater access
Within 500 feet of waterfront
Highway
<1 mile of major arterials
<1 mile through at least one
block of residential
1-2 miles
2+ miles
Rail
Served
Unserved
Transit
Proximate to light rail
Available bus service
Proximity to Residential (at least 10 occupied units)
Adjoining
Less than 300 feet
300-500 feet
500-1,000 feet
> 1,000 feet
Site Size
<1 acre
1-2 acres
2-5 acres
5-10 acres
>10 acres
Lot Coverage
< 30 percent
> 30 percent
Existing Buildings
1 story
1-2 stories
> 2 stories
Historic (eligible for tax credits)
Competitive for industry (truck docks, etc.)
Existing Concentration of Viable Industry
Brownfield
Listed
Suspect because of age, prior use
Floodplain
Gateway
Visible from major thoroughfare

As a general frame of reference, change-of-use proposals for office and technology uses, which are currently conditional in all M-zoned districts, should be regarded as relatively easier to justify, and proposals to change the use to residential or retail should be regarded as requiring more rigorous and conservative application of the criteria. The change-of-use decisions should comply with the following guidelines:

1. Retain as industrial sites those sites that can meet the needs of industry and can compete for users/tenants.

2. Reserve sites with deepwater access or close proximity to these sites for port and port-related businesses that require access or close proximity to piers serving ocean-going vessels.

3. Protect established concentrations of industrial space in areas with adequate infrastructure.

4. Allow conversion of marginal industrial land (e.g., small sites without good access, sites with adjacent or nearby residential uses, older multi-story buildings) unless nearby viable industries would be damaged by encroachment.

5. Allow conversion of multi-story, historic buildings without industrial reuse opportunities that are near residential and commercial areas. The new uses should exclude retail space except limited support retail serving primarily the on-site businesses or population. The new use should not result in burdensome zoning or regulatory restrictions on nearby viable industries, such as restricted operating hours or delivery times.

6. Allow conversion if a higher-intensity use is required to finance needed environmental remediation or other extraordinary expenses associated with out-moded industrial properties and buildings, but only if the new use would not result in burdensome zoning or regulatory restrictions on neighboring industries.

7. Allow conversion to mixed use if the intensity, investment levels and economic benefits of the new use far outweigh the alternative industrial use and if there is not a nearby concentration of viable industry that would be negatively affected by the new uses. The mixed use must include office and/or technology uses that will bring new higher paying jobs and income to the city, rather than retail uses. The new use should produce more jobs than the alternative industrial use.

These guidelines have been used in the next section to assess individual areas.

VII. "Unstable" Areas and Significant Sites

To test and illustrate how these recommended policies would be applied and implemented, the BAE Consultant Team reviewed conditions and recommended zoning strategies for eight "unstable" industrial areas marked by pressures for changes of use. These areas include:

- the portion of Canton near the intersection of Boston and Clinton Streets;
- Fort Avenue near Lawrence Street;
- Key Highway between Harborview and the Amstar (Domino) plant;
- the Middle Branch waterfront at Westport;
- Clipper Mill Industrial Park, Hooper Property and the Sears/Hedwin Properties along the Jones Falls Expressway;
- Falls Road north of the Baltimore Streetcar Museum;
- Kane and Eastern Avenue at Lombard Street; and
- Shipley Hill at Franklin Street.

Table 13 on the two following pages summarizes the areas' characteristics that formed the basis for our zoning recommendations.

To further test the change-of-use approach recommended in Section VII, the criteria were applied to four specific sites:

- the former Chesapeake Paperboard Company site on Fort Avenue
- the Hooper property on Druid Park Drive; and
- the former Anchor-Hocking site at Kane and Eastern Street; and
- the former United Iron & Metal, 4201 E. Monument Street.

Canton

The Canton waterfront (shown on Map 11) as it turns south from Canton Waterfront Park along Clinton Street is part of one of the city's premier industrial districts because of the following characteristics:

- deepwater access,
- a nearby highway interchange,
- two railroads, and
- an existing industrial concentration with
- minimal residential development in close proximity,

As such, the area is an important industrial asset that should be protected. The existing industries in the Canton industrial area need assurances that they will be able to continue operating into the future without residential encroachment placing limits on their operations.

The following zoning recommendations draw on Guidelines # 1 and 3 from Section VI.

Guideline #1: Retain industrial sites that can meet the needs of industry and compete for users. Guideline #3: Protect established concentrations of industrial space in areas with adequate infrastructure.

Table 13: Matrix Evaluation of Zoning in Selected "Unstable Areas"

Criterion/Unstable Area	Canton Clinton at Boston	Fort Avenue Near Lawrence	Key Highway Between Harborview and Amstar	Westport Waterfront
Deepwater	Deepwater waterfront	1,000 - 2,000 feet to waterfront	Deepwater waterfront	Non-deepwater waterfront
Highway	<1 mile on major arterial	<1 mile on major arterial	<1 mile on major arterial	<1 mile through at least one block of residential
Rail	Served	Served	Served	Served
Transit	Available bus service	Available bus service	Available bus service	Proximate to light rail
Proximity to Residential	500 - 1,000 feet for most of area	Adjacent	500 - 1,000 feet	Adjoining
Potential Site Size	>50 acres	>10 acres	3 - 5 acres	>50 acres
Lot Coverage	< 30%	< 30%	< 30%	> 30%
Existing Buildings	North of Boston Street - Historic, >2 stories	1 story, competitive for industry	Historic, 1 story and >2 stories	Historic, 1 story and >2 stories
Brownfield	Suspect because of age, prior use	Suspect because of age, prior use	Suspect because of age, prior use	Listed
Floodplain	Not in floodplain	Not in floodplain	Not in floodplain	Not in floodplain
Gateway	Visible from major thoroughfare	Visible from major thoroughfare	Visible from major thoroughfare	Not visible from major thoroughfare
Existing Industry	Tulkoff's Horseradish	Phillips	Amstar/Domino	Carr-Lowrey

Table 13: Matrix Evaluation of Zoning in Selected "Unstable Areas"

Criterion/Unstable Area	Clipper Mill/Hooper and Sears/Hedwin Property	Falls Road Above the Streetcar Museum	Kane and Eastern Ave. at Lombard	Shipley Hill at Frederick Avenue
Deepwater	No waterfront	No waterfront	No waterfront	No waterfront
Highway	>1 mile through at least one block of residential	>1 mile through at least one block of residential (Falls Road); <1 mile (Sisson Street)	<1 mile on major arterial	2 miles
Rail	Served	Unserved	Served	Unserved
Transit	Proximate to light rail	Available bus service	Available bus service	Available bus service
Proximity to Residential	Adjoining	500 - 1,000 feet	500 - 1,000 feet	500 - 1,000 feet
Potential Site Size	>10 acres	<10 acres	>10 acres	<10 acres
Lot Coverage	< 30%	< 30%	< 30%	> 30%
Existing Buildings	Historic, >2 stories	1 story	1 story	>2 stories
Brownfield	Suspect because of age, prior use	Suspect because of age, prior use	Suspect because of age, prior use	Suspect because of age, prior use
Floodplain	Floodplain	Floodplain in valley	Not in floodplain	Not in floodplain
Gateway	Visible from major thoroughfare	Not visible from major thoroughfare	Visible from major thoroughfare	Visible from major thoroughfare
Existing Industry	Pepsi	None	Owens Illinois	Various

The portion of the area south of the Canton Crossing development (south of Danville Avenue) should be zoned for industrial and port-compatible uses – either businesses directly using deepwater access or companies supporting port industries. Proposals to develop office and retail space on these properties are inconsistent with the goal of protecting the city's industrial base.

Guideline #2: Reserve sites with deepwater access or close proximity to deepwater sites for port and port-related businesses.

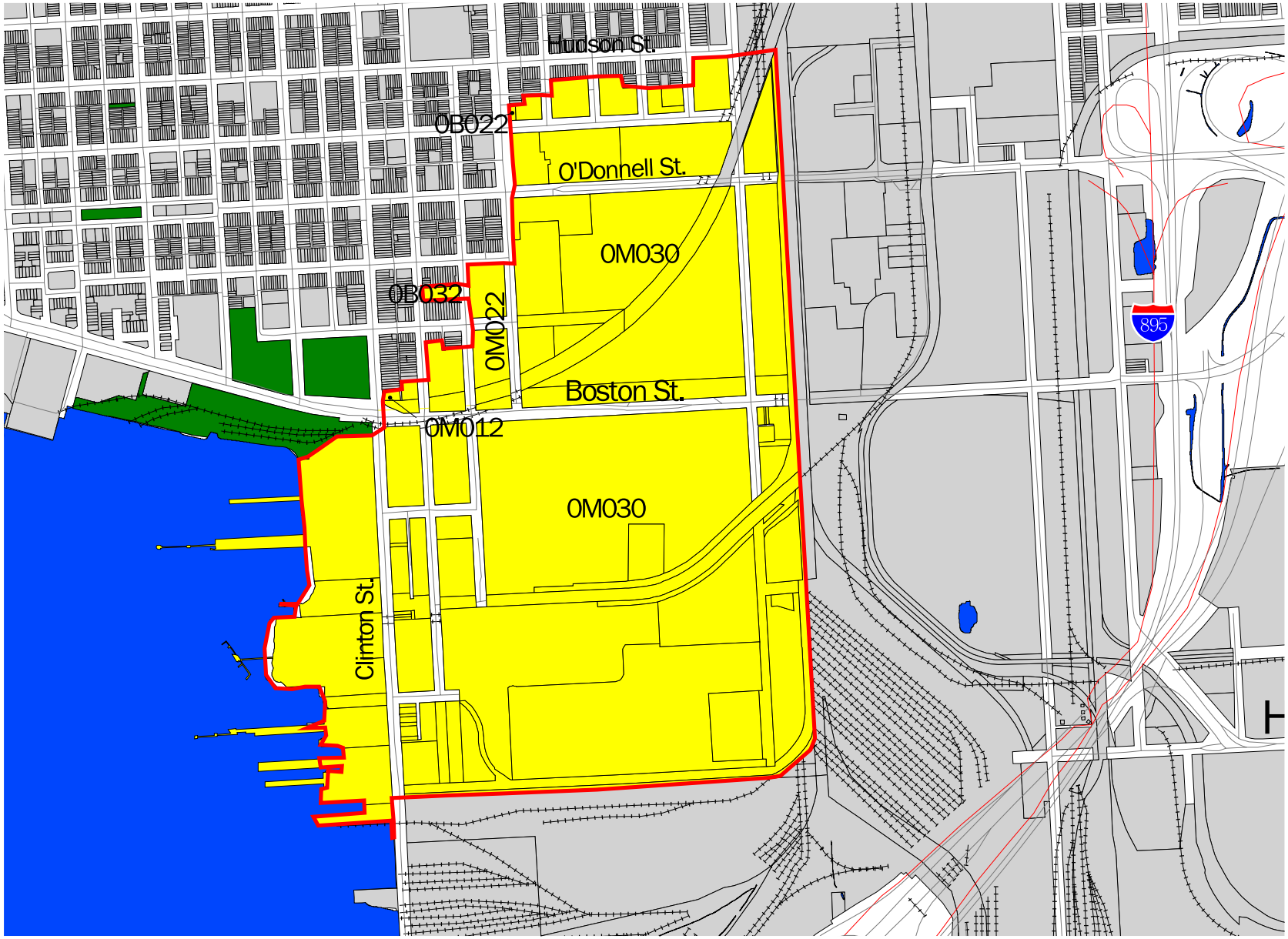
The northwest portion of the area to the north of Boston Street includes the Brewer's Hill industrial complex and Tulkoff's horseradish manufacturing plant. The Brewer's Hill historic industrial buildings are multi-storied, making them unsuitable for modern industrial use. Site coverage is quite high with constraints on maneuvering large trucks along the existing roads. Residential development exists to the west. The Harbor Enterprise Center in the former broom company building on the north side of Boston Street is being used as a business incubator facility. Due to the physical constraints on reuse of the existing historic buildings, we recommend adoption of the new mixed-use zoning for that portion of the area. This zoning would allow office, retail and/or residential uses in the existing buildings while banning freestanding retail structures. The zoning needs to avoid burdensome regulations or restrictions on Tulkoff's or other viable industrial uses in the area.

Guideline #5: Allow conversion of multi-story, historic buildings without industrial reuse opportunities that are near residential and commercial areas.

The balance of the area north of Boston Street not encumbered by historic buildings should retain M-3 zoning given its superior access, existing concentration of industrial facilities and parcel size.

Boston Street is a major access route in the city. Buffering and landscape standards which are already established in the Canton Industrial Area Ordinance should continue to apply here.

Canton Unstable Areas



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Fort Avenue Near Lawrence Street

The Fort Avenue area near Lawrence Street, shown on Map 12, extends from Decatur Street on the east past Boyle Street on the west to Key Highway on the north and I-95 on the south. It includes a modern shopping center built on a formerly industrial property and the new headquarters for Phillips Foods as well as some existing obsolescent industrial buildings and Francis Scott Key Elementary and Middle Schools. As summarized in the Table 14 matrix, these properties have outstanding access to highways and rail, significant parcel size and minimal constraints on their continued use as industrial properties.

Guideline #1: Retain industrial sites that can meet the needs of industry and compete for users.
Guideline #3: Protect established concentrations of industrial space in areas with adequate infrastructure.

Fort Avenue is a major truck access route to the Maryland Port Administration and other industrial operations in south and east Locust Point. Significant residential development could lead to pressure for restrictions on truck traffic on Fort Avenue. Other Locust Point businesses are seeking a signal from the City that they have a future in Locust Point and that they will not be squeezed out by residential encroachment. Encroachment could also prove to be a problem for Phillips and PQ Corporation, depending on the nature of their operations (e.g., truck traffic and delivery times).

Though there is residential development directly north and west, the presence of industry along Fort Avenue has not adversely impacted the neighborhood or the quality of life for area residents. The residents have been quite vocal in their support of industry in Locust Point, reflecting the importance of port-related and other industrial jobs for area residents.

The former White Paint/Supreme Aluminum facility at 921 East Fort Avenue is being redeveloped as an industrial PUD which allows office and limited commercial activity. This approach provides a reasonable compromise, allowing limited higher value uses that are not inconsistent with continuing industrial activity.

We recommend retention of the existing industrial zoning in the area with conversion of M-2 and M-3 land adjacent to residential areas to M-1 zoning so as to provide greater safeguards for adjoining uses. The one exception is residential or commercial zoning for a site surrounded by residential development. Construction of the Southside Market addressed a major lack of support retail facilities in the Key Highway/Locust Point area. Now that the gap has been filled, there is no rationale for conversion of additional industrial properties to shopping center use.

The small industrial property between Webster and Boyle Streets is used by a painting contractor. Surrounded by residential uses, it would be appropriate to consider business or residential zoning for this property if it were proposed for redevelopment. The shopping center separates this property from other industrial properties that might be constrained by adjacent residential development.

Guideline #4: Allow conversion of marginal industrial land with adjacent residential use unless nearby viable industries would be damaged by encroachment.

The change-of-use guidelines would allow conversion of properties only if environmental remediation or reuse of out-moded industrial buildings imposed extraordinary costs that could not be recovered from industrial reuse.

Guideline #6: Allow conversion if a higher-intensity use is required to finance needed environmental remediation or other extraordinary expenses associated with out-moded industrial properties and buildings.

Chesapeake Paperboard Company Property

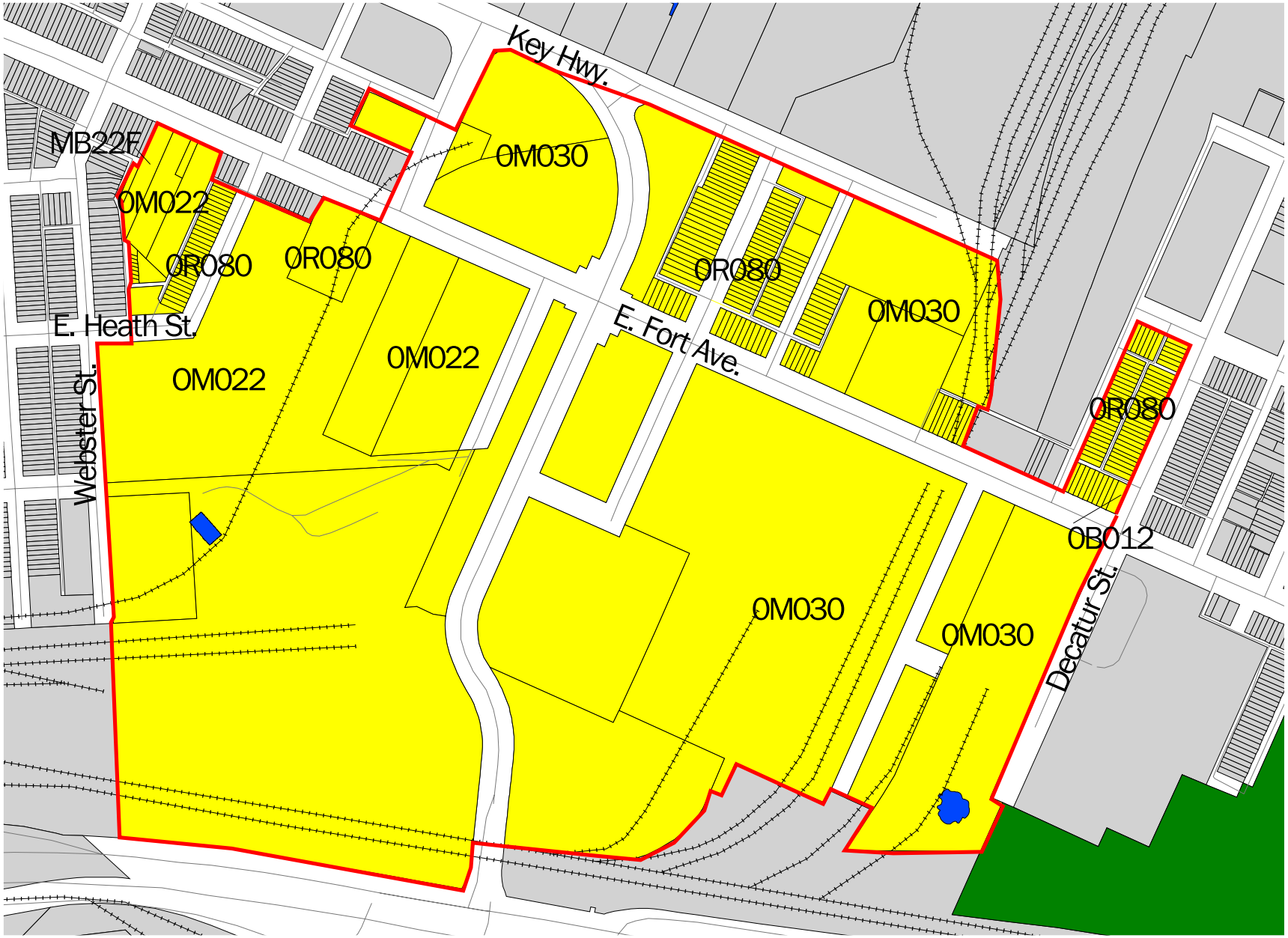
The 18-acre Chesapeake Paperboard site sits on Fort Avenue just east of Key Highway with superior highway and rail access, as shown on Map 12. Directly east of the site is the new Phillips headquarters in the renovated Coca-Cola bottling plant. Further east are PQ Corporation, a heavy industrial use, and Francis Scott Key Elementary and Middle Schools. The Baltimore Little League maintains a ballfield at the front of the site on Fort Avenue. The existing buildings are obsolescent and should be replaced or renovated.

In keeping with Guidelines #1 and #3, we recommend retention of the site in industrial use so as to protect Phillips and PQ Corporation and, as importantly, protect the long-term truck access for other Locust Point industry dependent on Fort Avenue.

Conversion to a non-industrial use would be justified only if:

- environmental cleanup costs or other costs associated with out-moded industrial buildings were excessive and required a higher land sales price to warrant new investment (Guideline #6); and/or
- a new mixed-use development would have economic benefits that far outweigh those associated with industrial use, but a solely or primarily residential or retail use is not recommended (Guideline #7).

Fort Avenue Unstable Areas



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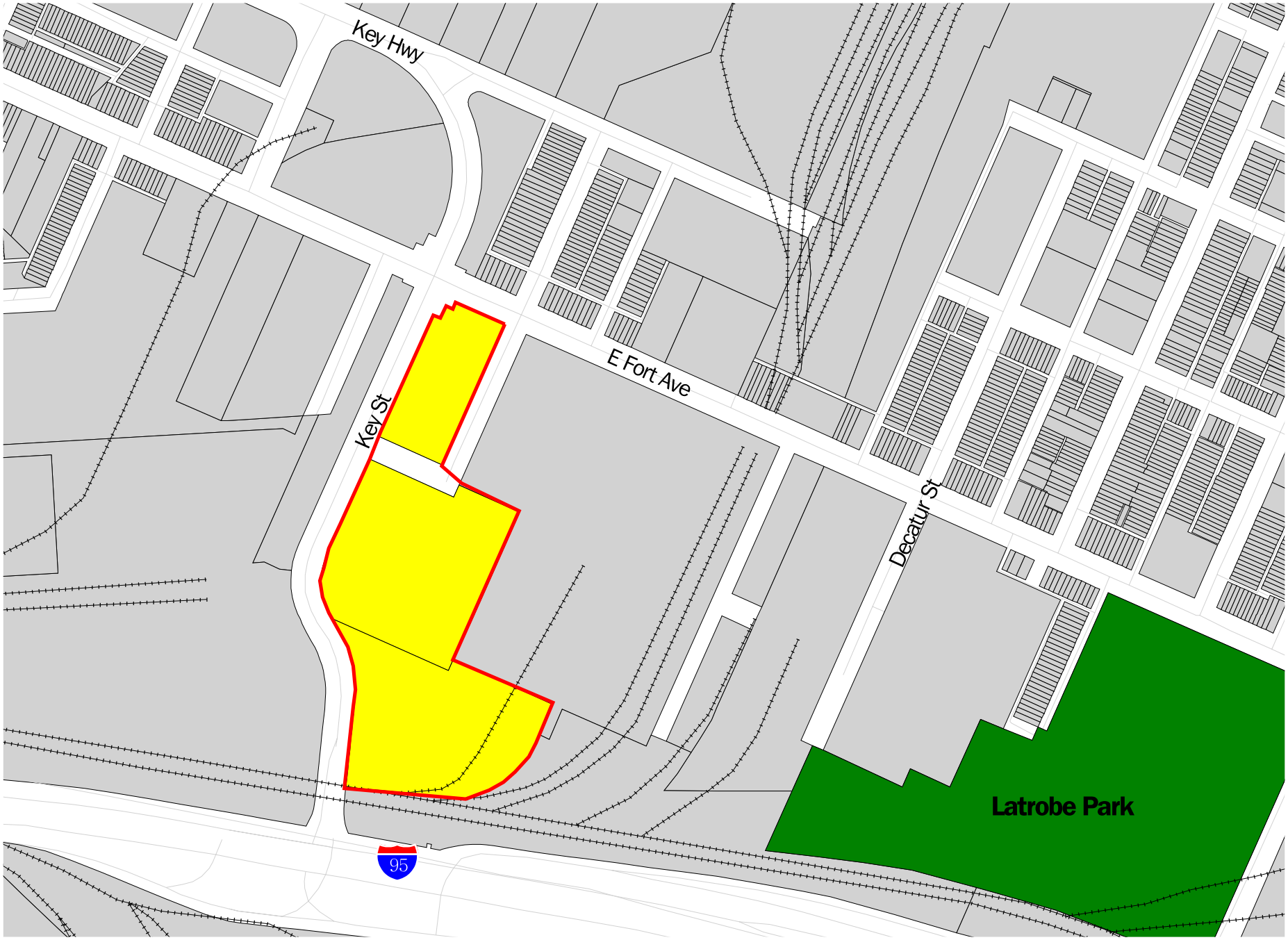
BALTIMORE DEVELOPMENT CORPORATION

Chesapeake Paperboard Company Property



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Key Highway Between Harborview and Amstar

The unstable area lies between Harborview (Webster Street) and the Amstar (Domino's) property along the harbor front generally north of Key Highway, as shown on Map 14. This cluster of properties includes the Little Havana restaurant and a Harborview pier on the western edge, a City firehouse, the Museum of Industry, General Ship Repair, the former Egan Marine site, Tidewater Yacht Service and a retail outlet for marine supplies along the water. On the south side of Key Highway at Lawrence Street is the South Harbor Business Center, a business incubator. The existing Urban Renewal Plan protects the area from Amstar through the firehouse from conversion to commercial and residential uses. Those restrictions were adopted to assure that Amstar would be able to continue operation into the future. Allowed uses include marine industrial uses.

As industrial land, the area has been compromised by the introduction of high-end residential development at Harborview. However, it still serves an invaluable role as a buffer zone protecting Amstar. As long as Amstar continues to operate, that buffer will be important to the area's stability.

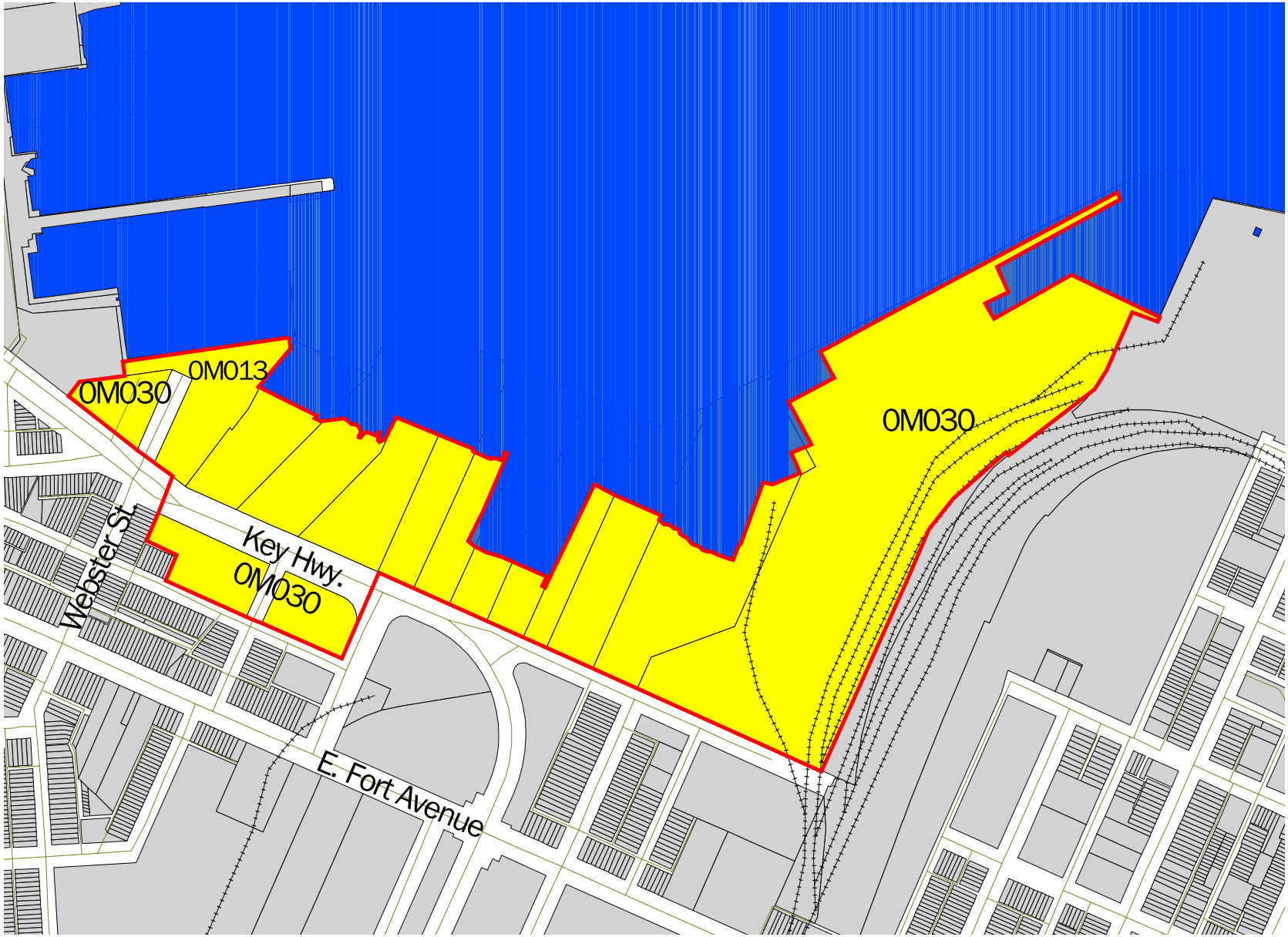
Guideline #1: Retain industrial sites that can meet the needs of industry and compete for users.
Guideline #2: Reserve sites with deepwater access for port and port-related businesses.
Guideline #3: Protect established concentrations of industrial space in areas with adequate infrastructure.

The first three criteria related to protecting good industrial sites and existing industry lead us to recommend preservation of these sites for port-compatible uses that will not impede operations at Amstar. The deepwater, rail and highway access of the Amstar property coupled with the regional shortage of deepwater sites argue for retaining that site in long-term port-related industrial use. The property on the southern side of Key Highway closest to Amstar should retain its industrial zoning so as to prevent encroachment on the Amstar operation. Properties closer to Harborview, such as the Fire Department facility, might be considered for office, institutional uses and limited commercial activity, governed through an industrial PUD, but residential use is not recommended.

If, in the long-run, the Amstar plant is closed and the buildings/site require massive investment for cleanup and reuse, Guidelines #5 and #6 would allow conversion for commercial and/or residential reuse. At that time, the remaining Key Highway sites would no longer be needed to buffer the Amstar property and could be converted to commercial uses.

Guideline #5: Allow conversion of multi-story, historic buildings without industrial reuse opportunities that are near residential and commercial areas.
Guideline #6: Allow conversion if a higher-intensity use is required to finance needed environmental remediation or other extraordinary expenses associated with out-moded industrial properties and buildings.

Key Highway Unstable Areas



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BALTIMORE DEVELOPMENT CORPORATION

Middle Branch Waterfront at Westport

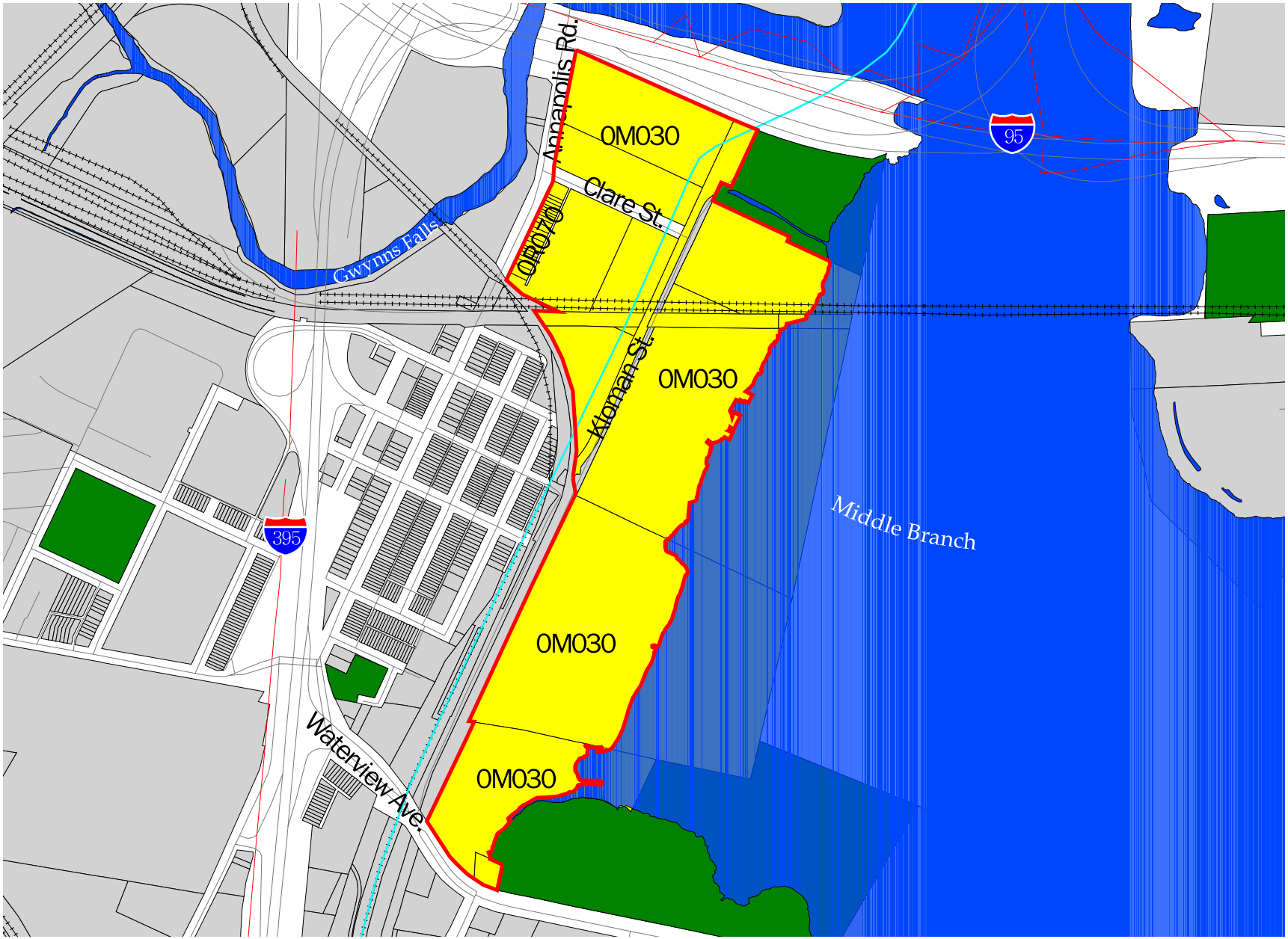
The Westport unstable area extends along the Middle Branch waterfront from I-95 to Waterview Avenue to Kloman Street and Annapolis Road on the west, as shown on Map 15.. The area benefits from a partial interchange with MD 295 to the west, but access is on narrow roads through the residential area. Access from I-95 is available at Hanover Street via Route 2 over the Vietnam Veterans Bridge and on Waterview Avenue to Annapolis Road (Route 648). The last quarter-mile of that route impacts residential areas. The CSX Railroad serves the area. The industrial properties include the now-vacant Carr-Lowrey Glass Company and the decommissioned Baltimore Gas & Electric Westport plant. The two sites together form an important waterfront redevelopment opportunity, although the BG&E site is a listed brownfield site and Carr-Lowrey also faces cleanup impediments. Immediately across the rail line is the existing Westport neighborhood, an isolated residential area in the shadow of I-295/Russell Street. High levels of crime, decay, disinvestment and poverty characterize the neighborhood. Lot coverage is quite high. Though nominally part of the Carroll Camden Industrial Area, these parcels are largely cut off from the rest of the area by Russell Street and the Westport neighborhood.

The Middle Branch is shallow at this point, reportedly contaminated, and designated as a wildlife conservation area. It does not provide deepwater access currently and dredging to create a deepwater channel is unlikely to be approved. The Westport stop on the light rail system is immediately adjacent.

This area has limited value as an industrial site. The adjacent residential area limits operations as does the inadequate road infrastructure. Given the extent of contamination, cleanup costs are likely to exceed the area's value as industrial land. Without the financial incentives provided by a profitable reuse, cleanup may not proceed in a timely manner. Business, residential or mixed-use zoning would be appropriate to take advantage of the waterfront and water views if the current industrial user ceases operation on the site.

Guideline #4: Allow conversion of marginal industrial land with adjacent residential use unless nearby viable industries would be damaged by encroachment.

Westport Unstable Areas



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Clipper Mill Industrial Park, Hooper Property and Sears/Hedwin Properties

This unstable area, shown on Map 16, lines both sides of the Jones Falls Expressway (I-83) from Wood Heights Avenue on the north to Union Avenue to the south and then extends west along Druid Park Drive and Clipper Road. The Sears and Hedwin properties are located on a 10- to 12-acre site in the Jones Falls Valley 20 to 30 feet below the Expressway and West 41st Street. Aging industrial structures from the 1950s support Sears appliance repair operations and Hedwin industrial containers operation. Other portions of the site are used for a truck terminal and construction offices with outdoor storage. Highway access from I-83 is somewhat indirect, requiring an exit at Cold Spring Lane and traveling on Falls Road to 41st Street, a two- to four-lane route through a residential area. Located in the floodplain, the site has limited alternative reuse opportunities.

West of the Expressway, access is much more difficult. The historic mills and residences that lined the Jones Falls before construction of the Expressway are typically served by narrow streets. Clipper Road north of 41st Street is a very narrow street lined by historic residences. South of 41st Street is an adequately sized two-lane road providing access to the Clipper Mill Industrial Park on the east and the Clipper Mill property on the west. The former Londontown manufacturing facilities south of Clipper Mill Industrial Park are being reused by a variety of small businesses, including artists and craftspeople.

Guideline #4: Allow conversion of marginal industrial land with adjacent residential use unless nearby viable industries would be damaged by encroachment.

Union Avenue provides access to the Clipper Mill Industrial Park properties, a varied collection of aging structures along the rail line west of the Expressway. Located in the floodplain, several of the existing structures are dated and have multiple stories, making them unsuitable for most modern industrial uses. As low-cost space they have attracted some small businesses. Further north of 41st Street are larger warehouse structures better suited for industrial use, but constrained by access along a one-lane road. East of the Expressway are the Pepsi bottling plant and Lifelike Products in a historic mill building. These properties benefit from easier access from Falls Road via Union Avenue and 41st Street, though both routes run through residential areas.

The Clipper Mill property is a 17-acre site with several historic structures. The largest structure burned, leaving only a shell of the old mill. Other structures are currently occupied by a lumber company, a construction contractor and several other small businesses. A planned unit development has been adopted allowing a mix of residential, office and retail uses. The Hooper property abuts the back of the Clipper Mill property and incorporates 10 acres along Druid Park Drive at Parkdale Avenue. The site includes several one-story aging industrial facilities. Access from I-83 is circuitous, involving an exit at Cold Spring Lane and then traveling Falls Road, 41st Street and Druid Park Drive. Druid Park Drive is lined with rowhouses on the approach and opposite the Hooper property. Rowhouses on Druid Park Drive also adjoin the Clipper Mill property. To the south of the Clipper Mill property is another cluster of homes and Druid Hill Park. The Woodbury light rail station is directly south of the Clipper Mill entrance where Clipper Road becomes Seneca Avenue.

Despite the size of these and other properties west of the Expressway, we do not recommend continued industrial use of the properties because of

- the residential nature of adjoining properties,
- difficult highway access,
- truck impacts on residential properties,
- lack of freight rail service and
- presence of historic structures.

Rather, we recommend a new mixed-use zoning for former industrial properties west of the Expressway that would allow a mix of office, light industrial and residential uses. The larger Jones Falls Valley area has already developed a base of craftspeople and small businesses that can take advantage of smaller, existing spaces in historic buildings, reusing these and other mill buildings along Jones Falls.

Guideline #5: Allow conversion of multi-story, historic buildings without industrial reuse opportunities that are near residential and commercial areas.
Guideline#6: Allow conversion if a higher-intensity use is required to finance needed environmental remediation or other extraordinary expenses associated with out-moded industrial properties and buildings.

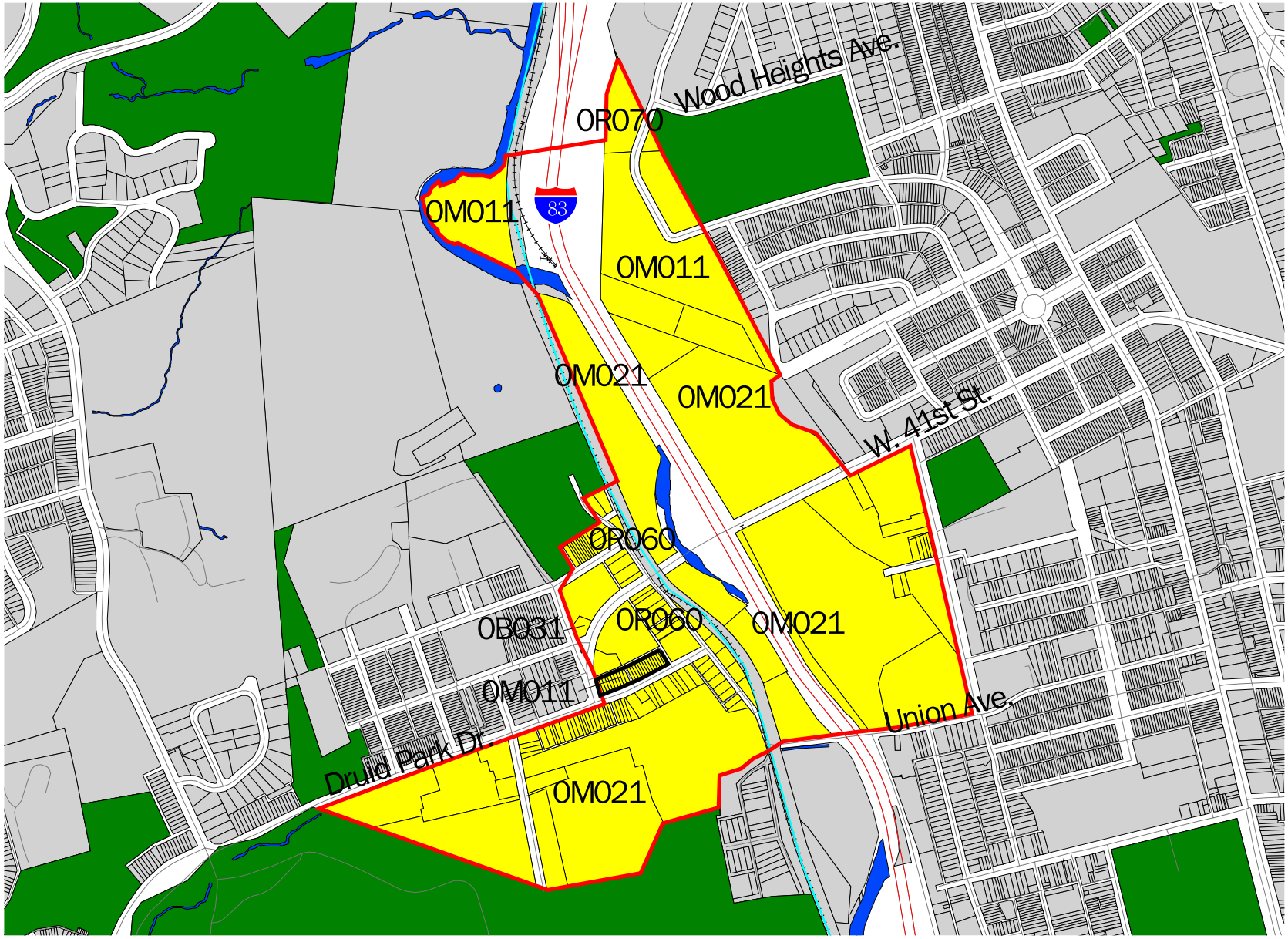
East of the Expressway, truck access is more viable via 41st Street and Buena Vista Drive, though not ideal due to the need to drive along residential neighborhoods. Conversion to higher-value mixed-use development would be appropriate to reduce the impacts of truck traffic on the adjoining neighborhoods and to improve the city's image from I-83. However, the flood plain restrictions on land development and the high cost of raising habitable development above flood levels may preclude reuse of these sites for new mixed-use development. Until those land economics better favor mixed-use redevelopment or until funding is available for conversion to park land, the industrial sites east of the Expressway should remain in industrial use.

The Hooper Property

A 10-acre parcel on Druid Park Drive, the Hooper Property includes single- and multi-story industrial buildings, as shown on Map 17. The site itself has adequate acreage for truck servicing and parking. However, the site is more than two miles from I-83 with access through residential neighborhoods. The site has no rail service, and it faces two blocks of rowhouses and a public park.

The current industrial use of the property should be allowed to continue. However, if the industrial use ceases, change to non-industrial use should be considered. The property is only marginally competitive for industrial use, and with the redevelopment of Clipper Mill, it will soon be surrounded by residential and park uses on all sides. If any of the existing structures are historic and suitable for reuse, the new zoning category for mixed-use redevelopment of historic structures would be appropriate for the site.

Clipper Mill/ Hooper and Sears Properties Unstable Areas



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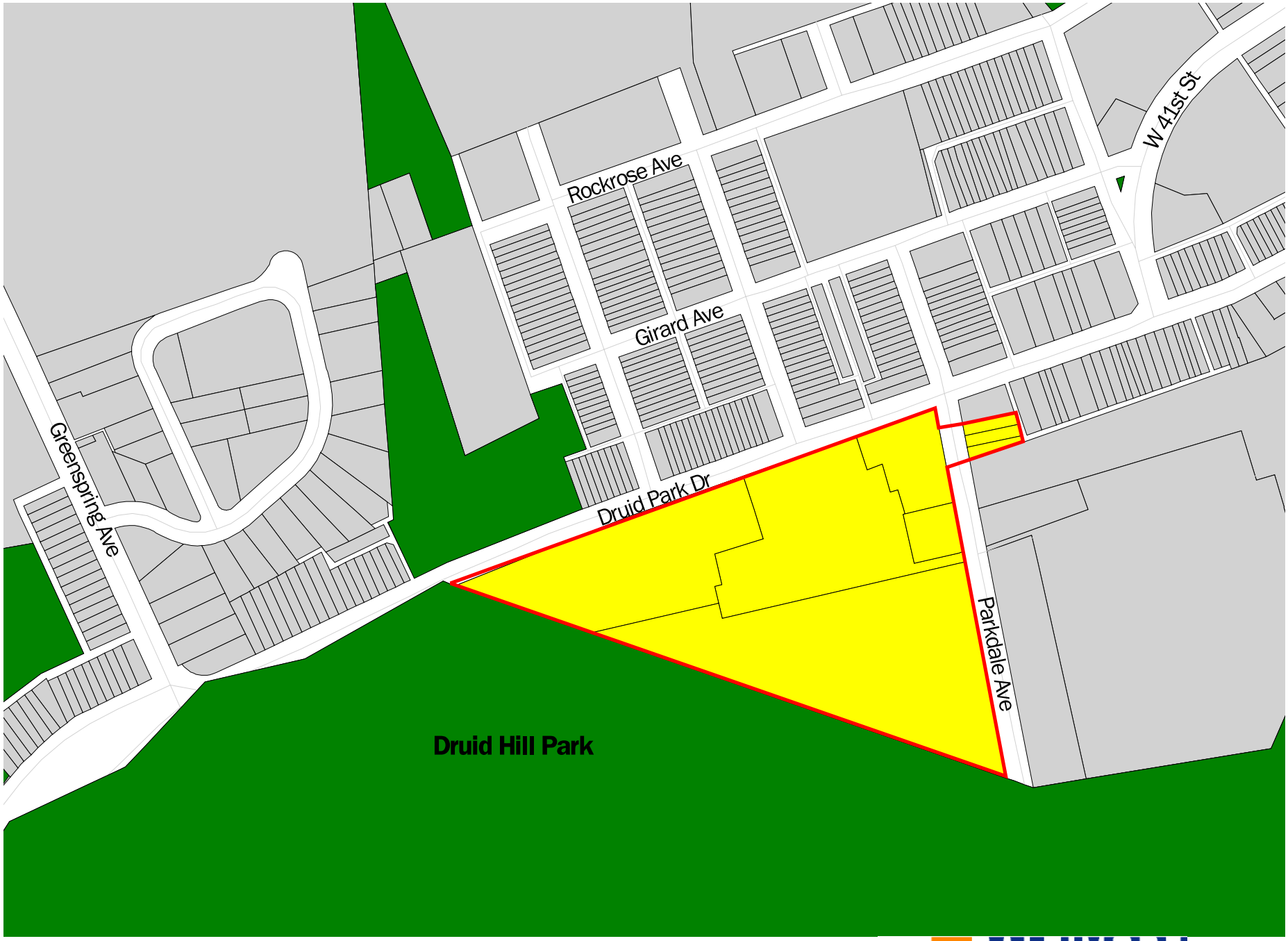
Hooper Property



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Falls Road North of the Streetcar Museum

The Falls Road unstable area follows Falls Road south from roughly 33rd Street to the Baltimore Streetcar Museum. Bordered on the west by Jones Falls, rail lines and the elevated Jones Falls Expressway, the area extends to Sisson Street and Huntingdon Avenue on the east. (See Map 18.) This area operates in fact as two areas – down in the Valley along Falls Road and up the bluff on Sisson Street.

Development in the Valley is very limited due to its floodplain status. The primary use under and near the 28th and 29th Street overpasses is storage of construction equipment and the City's highway maintenance supplies and equipment. The major grade differential between I-83 and Falls Road at 28th and 29th Streets prevents highway easy access via those ramps. Access from 28th and 29th Streets is on steep roads that run through residential areas. Though active rail lines run through the Valley along Falls Road, they are west of the road separated from developable land.

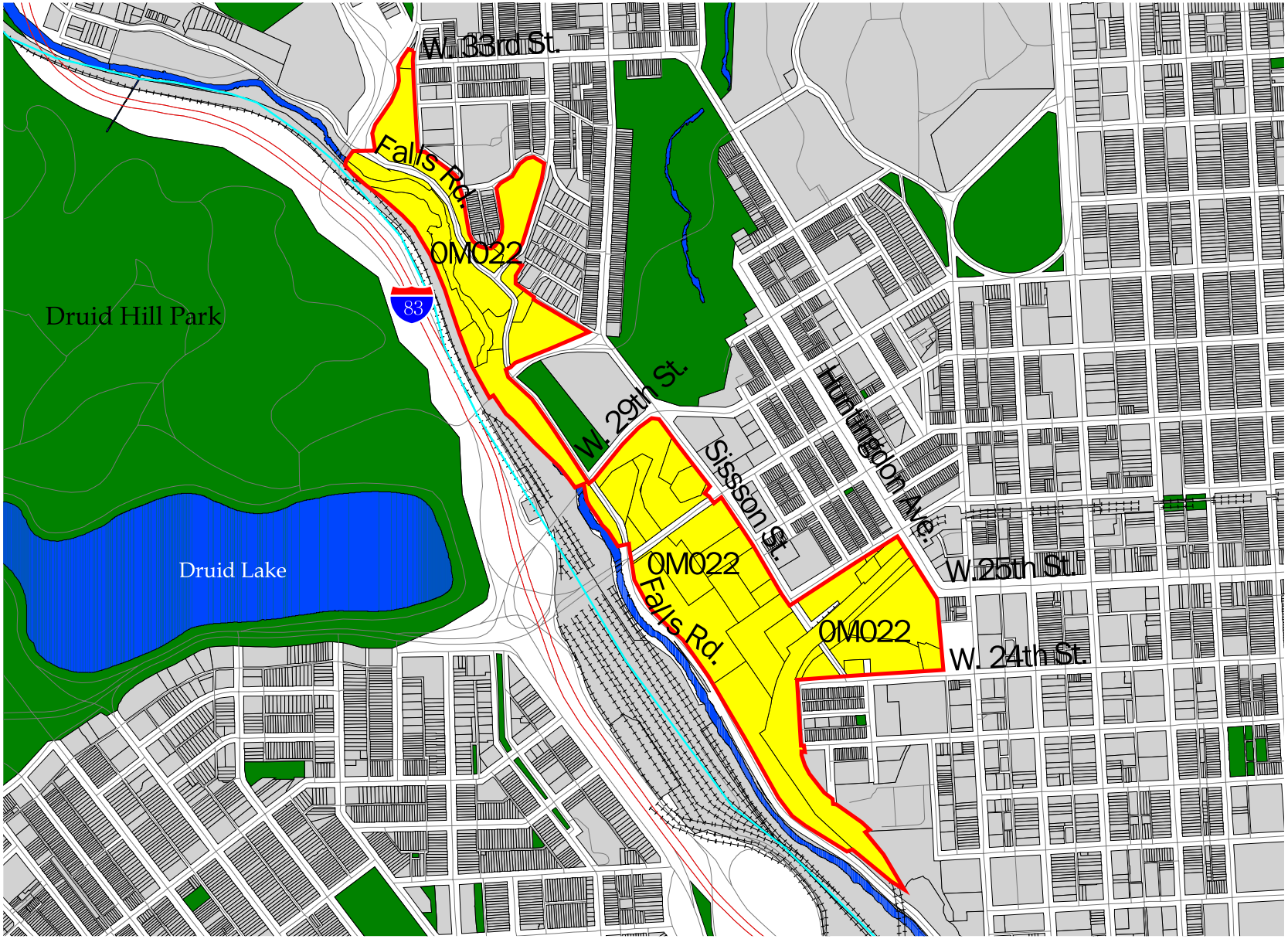
Lined with trees, Falls Road is quite scenic except for the unsightly equipment storage yards. This portion of the Falls Road area is better suited to a park than to industrial use.

Guideline #4: Allow conversion of marginal industrial land with adjacent residential use unless nearby viable industries would be damaged by encroachment.

In contrast, the area along Sisson Street has immediate access to I-83 via the 28th and 29th Street ramps. This is an established business district providing space for a variety of light industrial businesses in viable one-story buildings. The industrial use does not negatively impact nearby residential areas. We recommend M-1 zoning for this portion of the unstable area.

Guideline #1: Retain industrial sites that can meet the needs of industry and compete for users. Guideline #3: Protect established concentrations of industrial space in areas with adequate infrastructure.

Falls Road Unstable Areas



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Kane Street and Eastern Avenue at Lombard Street

This unstable area encompasses properties along I-95 at the Eastern Avenue interchange, extending north and east from Kane Street past Lombard Street to the city border with Baltimore County. (See Map 19.) To the east of the highway, the area includes industrial properties accessed from Kane Street/Rolling Mill Road that adjoin industrial properties along the railroad in Baltimore County. With on-site rail service and immediate access to I-95, this area has outstanding accessibility. It is currently developed with a series of separate buildings, some of which need to be redeveloped. Verizon uses a brownfield site in the area for parking. The Anchor-Hocking site, a corner property in the northeast portion of the Kane Street/Eastern Avenue intersection, is proposed for redevelopment as a grocery store-anchored shopping center. The neighborhood is already served by Giant Food on Sinclair at Moravia and Metro Foods on Eastern Avenue in Baltimore County. Retail development of this site is not needed to address a major void in the retail services available to area residents.

We recommend that this area be retained for industrial use. Zoning for a modern industrial park would be very appropriate as would urban business zoning. Buffering should be required for the residential areas west of Kane Street and east of Quinton Street. The industrial park or urban business zoning would have use restrictions and design guidelines to ensure that the new development is appropriate to and respectful of the gateway location.

Guideline #1: Retain industrial sites that can meet the needs of industry and compete for users.
Guideline #3: Protect established concentrations of industrial space in areas with adequate infrastructure.

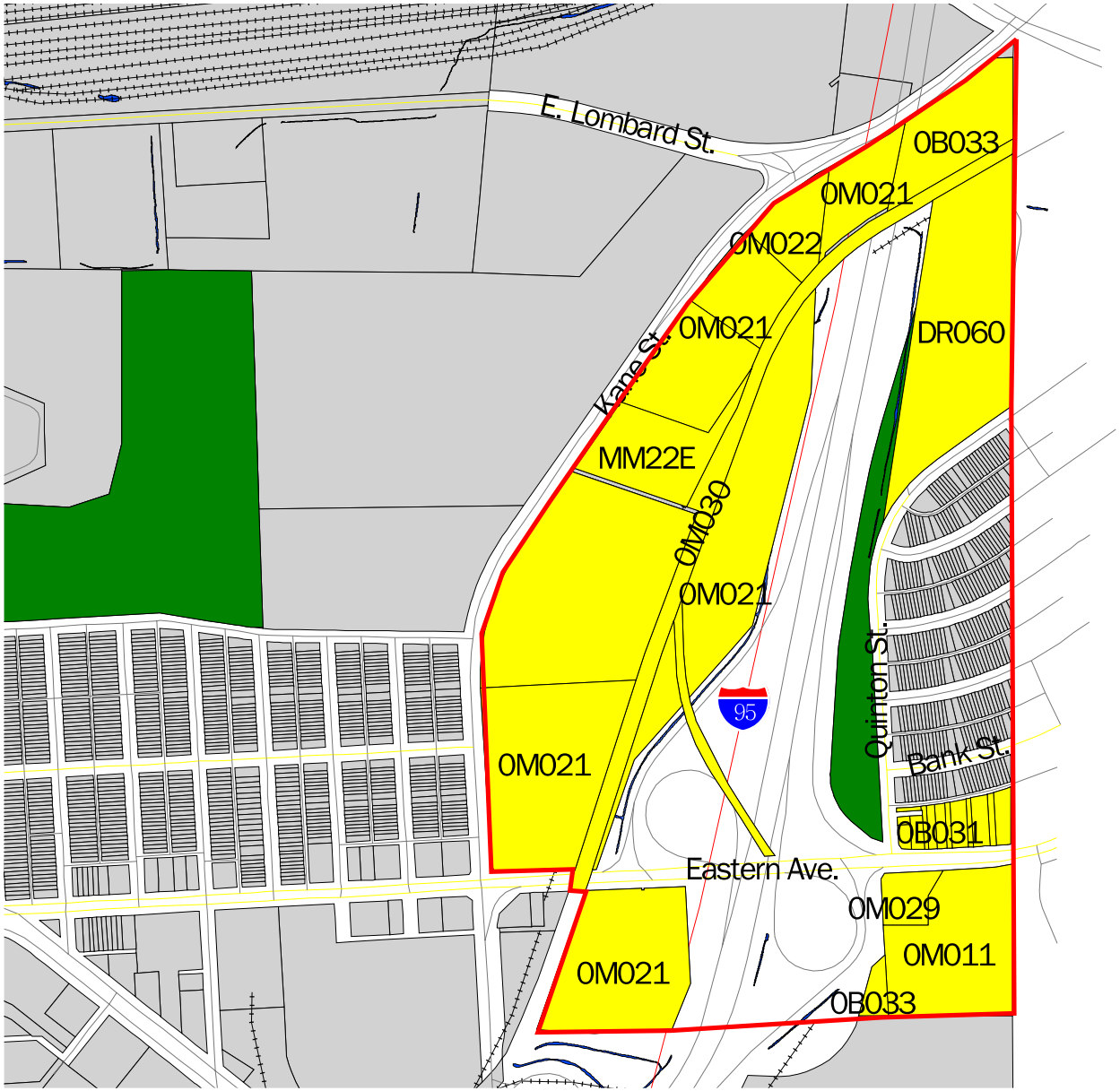
Anchor-Hocking Property

This 10 plus acre site sits at the Kane and Eastern intersection immediately west of the I-95 interchange. The site has rail service, supportive infrastructure and no residential neighbors (Map 20).

Commercial encroachment already has converted nearby industrial sites to retail use. Home Depot, Wendy's and Royal Farm were recently developed across Eastern. Because retail users typically pay more for land than do industrial users, the financial incentives favor conversion to retail use. Conversion of this site to commercial use would encourage owners of other nearby industrial properties to hold out for rezoning to commercial use rather than make their properties available for industrial reuse at an affordable price.

Given the parcel size, infrastructure and neighboring industrial properties, we recommend rezoning for a modern industrial park or urban business district.

Kane and Eastern Unstable Areas



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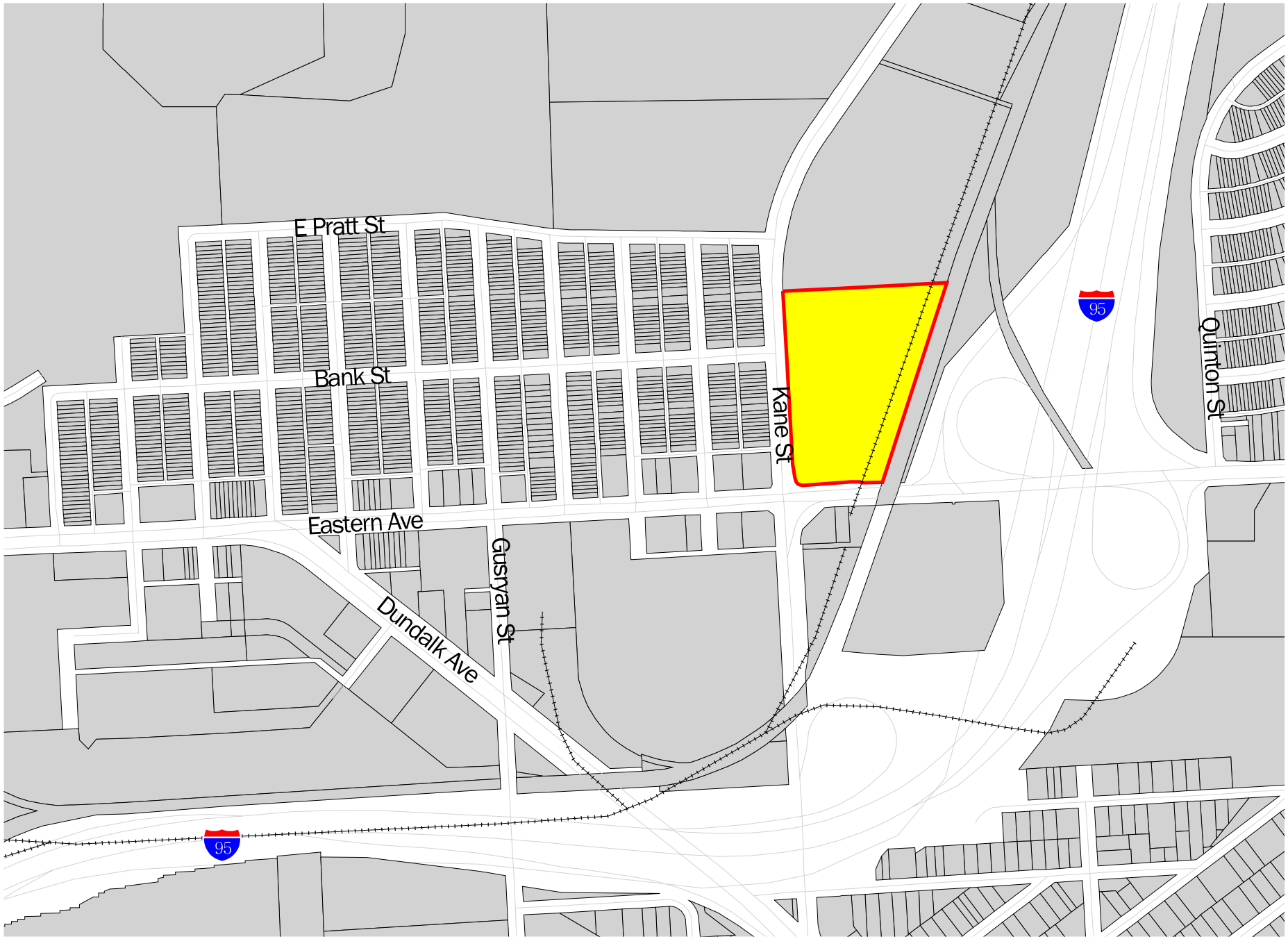
Anchor-Hocking Property



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Shipley Hill

The Shipley Hill unstable area, shown in Map 21, is bounded by Frederick Avenue on the south, Willard Street on the west, Hollins Street, Warwick Avenue and Lipps Road on the north and S. Calverton Road on the east. Directly across Frederick Avenue is the West Side Shopping Center, the primary retail district for Southwest Baltimore. Directly north on Hollins Street is the new Hollins Phoenix residential complex. An assisted living facility is proposed for development in the area.

In the northwest corner of the area is the former Eigenbrott Brewery Complex, a historic, multi-story building no longer in use. Much of the remaining property is vacant and dilapidated. The entire Shipley Hill district is characterized by small industrial sites with high lot coverage, difficult access and no room for on-site parking or truck maneuvers. The area has no rail service and non-competitive road access via U.S. 40 six blocks to the north. The nearest I-95 interchange is two miles to the southwest via Frederick and Caton avenues.

Properties to the west of the unstable area along the Gwynns Falls are being acquired for clearance of existing industrial facilities and use for park purposes to complement the Gwynns Falls Trail. These acquisitions will eliminate much of the area's remaining industry.

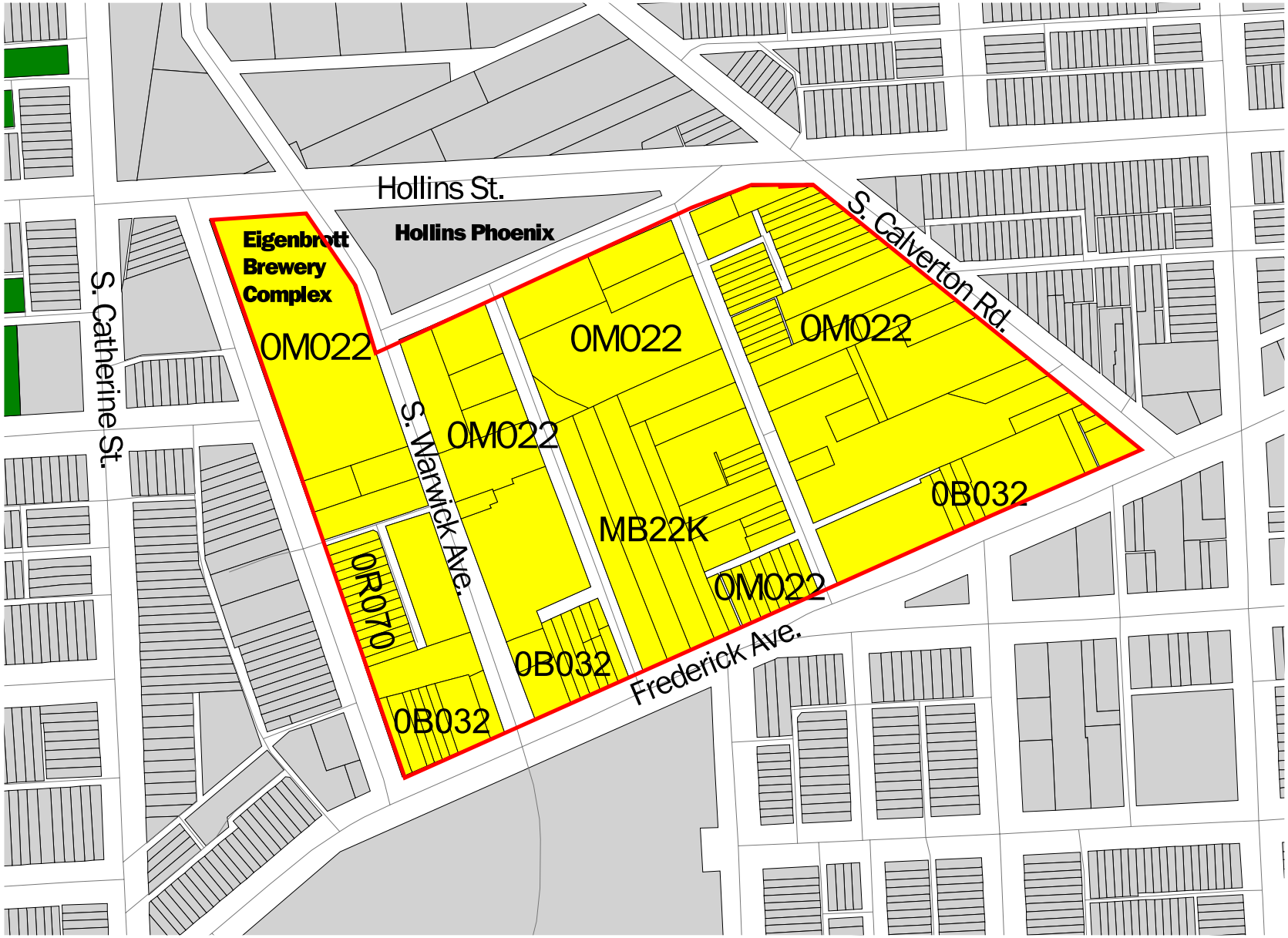
Industrial and residential development has been inter-mixed throughout the Shipley Hill area, constraining the industrial operations and blighting the residential units. Industrial brokers and developers report no user demand for facilities in this area. Future redevelopment of this unstable area should emphasize commercial, business and residential uses to replace any remaining industrial operations.

Guideline #4: Allow conversion of marginal industrial land with adjacent residential use unless nearby viable industries would be damaged by encroachment.

Conversion of the historic Eigenbrott Brewery Complex to commercial or residential use should be encouraged.

Guideline #5: Allow conversion of multi-story, historic buildings without industrial reuse opportunities that are near residential and commercial areas.
Guideline#6: Allow conversion if a higher-intensity use is required to finance needed environmental remediation or other extraordinary expenses associated with out-moded industrial properties and buildings.

Shipley Hill Unstable Areas



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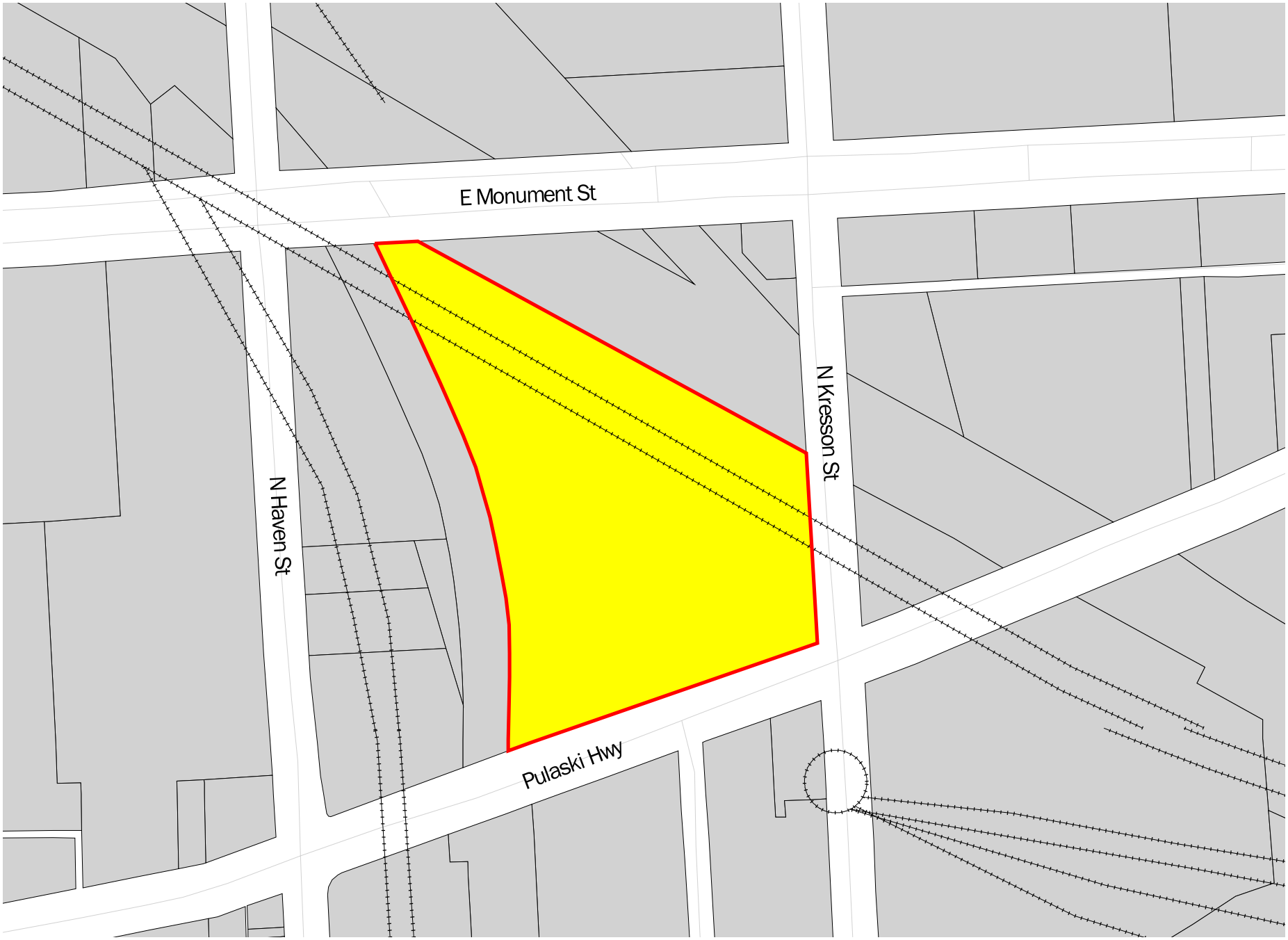
United Iron & Metal Property

This former iron and metal scrap yard is equipped with a large crane-served building on 5.5 acres. E. Monument Street is characterized by industrial and service commercial uses. (See Map 22.) The property is located between Haven and Kresson Streets. Access to I-895 is less than one mile to the east via Pulaski Highway, and the property is served by rail. Given the property's former use as a scrap yard, it is likely affected by environmental contaminants. The site is generally separated from residential neighborhoods.

Because the site is so well served with highway and rail access with minimum constraints from nearby residential development, we recommend retaining the site's industrial zoning. Buffer and screening standards should apply on this major Baltimore access route. Conversion to non-industrial uses should be allowed only if the cost of environmental remediation and clearance is so high as to preclude cleanup without the higher financial returns generated from commercial reuse.

United Iron and Metal Property



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Summary

Baltimore is faced with a number of choices regarding the conversion of industrially-zoned lands. Clear policy guidelines and systematic evaluation of the issues inherent in each change-of-use decision will form a better basis for decision-making than the more ad-hoc process. Guidelines for change-of-use decisions should be codified to create greater predictability and to reduce land speculation that keeps some key industrial properties from being reused by industry. Clear commitment to protection of industrial land will send an important message to industry considering locating or expanding in the city.

Table 14 summarizes the BAE Consultant Team's recommendations for the twelve unstable areas and focus sites.

Table 14: "Unstable" Area Zoning Recommendations

Area	Recommended Zoning
Canton	Port-compatible uses south of Danville Avenue. Mixed-use for Brewer's Hill and Canton Crossing without undue restrictions on existing industry. Landscaping standards on Boston Street.
Fort Avenue Near Lawrence Street	M-1 zoning so as to protect nearby industry and truck access routes for other businesses using Fort Avenue. Allow office and select commercial uses through an industrial PUD, but not residential. Further exceptions should be made through the application of the city-wide criteria for change-of-use outlined in Chapter VI.
Chesapeake Paperboard Company Property	M-1 or M-2 zoning unless the cost of environmental cleanup and/or the cost of re-using out-moded buildings require a higher land price. In that case, mixed-use, technology or office development but not retail or residential uses.
Key Highway Between Harborview and Amstar	Light industrial and port-compatible uses as long as Amstar operates or its site is used for industrial purposes. If Amstar ceases operations and existing buildings are suitable for mixed-use reuse and require more intensive use to cover renovation or cleanup costs, allow conversion of Amstar and adjacent properties.
Middle Branch Waterfront at Westport	Business or residential reuse of the now-vacant Carr-Lowrey Glass plant and BGE Westport plant.
Clipper Mill Industrial Park, Hooper Property and Sears/Hedwin Property	Mixed-use reuse of properties west of Jones Falls Expressway to allow office, light industrial and/or residential uses. East of the Expressway, conversion to higher-value mixed-use development if economics support the high costs of redevelopment in the flood plain. Otherwise, retain for industry or park land.
Hooper Property	If the current industrial use ceases operations, mixed-use reuse for office, light industrial and/or residential uses.
Falls Road North of the Streetcar Museum	Convert land in the Valley to park land. Retain the Sisson Street properties in industrial use with M-1 zoning.
Kane Street and Eastern Avenue at Lombard St.	Modern industrial park or urban business zoning. Retain in industrial use.
Anchor-Hocking Property	Modern industrial park or urban business zoning. Retain in industrial use.
Shipley Hill -- Frederick Ave. to Hollins St.	Rezone for residential use or park land. Encourage reuse of Eigenbrott Brewery Complex for commercial or residential use.
United Iron & Metal Property	Retain M-3 zoning with buffer and screening standards along Monument Street.

Source: BAE Consultant Team, 2002.

Appendix A. Appendix Tables

Table A-1: Employment by Industry Sector, State of Maryland, 1990-2002

Sector	1990	2000	2002	1990-2002 Change Number	1990-2002 Change Percent
Services	750,300	992,600	1,020,900	270,600	36.1%
Retail Trade	286,500	299,400	295,300	8,800	3.1%
Government	419,300	445,000	461,000	41,700	9.9%
Manufacturing	198,300	174,000	157,200	(41,100)	-20.7%
Wholesale Trade	91,800	92,900	92,800	1,000	1.1%
Construction	158,400	161,100	167,500	9,100	5.7%
TWU*	71,300	79,800	74,300	3,000	4.2%
Financial Activities	142,300	147,000	150,500	8,200	5.8%
Information, Telecommunications	53,100	58,500	53,200	100	0.2%
Total	**2,171,300**	**2,450,300**	**2,472,700**	**301,400**	13.9%

Note: *Transportation, warehousing and utilities.

Sources: Maryland Department of Labor, Licensing and Regulation; Randall Gross / Development Economics; BAE, 2003.

Table A-2: Employment by Industry Sector, Baltimore Metropolitan Area, 1990-2002

Sector	1990	2000	2002	1990-2002 Change Number	1990-2002 Change Percent
Services	404,500	515,300	529,000	124,500	30.8%
Retail Trade	140,300	147,000	141,900	1,600	1.1%
Government	215,300	216,700	221,100	5,800	2.7%
Manufacturing	127,000	96,000	85,700	(41,300)	-32.5%
Wholesale Trade	52,500	51,600	54,400	1,900	3.6%
Construction	70,700	73,600	73,400	2,700	3.8%
TWU*	40,800	44,900	41,200	400	1.0%
Financial Activities	79,800	78,600	80,000	200	0.3%
Information, Telecommunications	20,700	24,900	21,800	1,100	5.3%
Total	**1,151,600**	**1,248,600**	**1,248,500**	**96,900**	8.4%

Note: *Transportation, warehousing and utilities.

Sources: Maryland Department of Labor, Licensing and Regulation; Randall Gross / Development Economics; BAE, 2003.

Table A-3: Fiscal Impacts of Office Development

Assumptions
1.5 Acres
4 Employees/1,000 sq. ft.

Facility Size = 25,600 sq.ft.
Employees = 102
Avg. Salary/Worker = $42,500
Construction Costs = $70/sq. ft.
Total Project Hard Costs = $1,135,000
Total Project Costs (Value) = $1,774,000
Business Personal Property Assessment = 10% of Real Property Value

Recurring Annual Taxes from Operations		
Real Property Taxes	$	41,299
Baltimore City Personal Income Tax		33,596
Business Personal Property Taxes		10,325
Total Annual Taxes	**$**	**85,220**

Assumption
25% of general office workers are Baltimore City residents

Sources: Milestone Associates, Inc.

Table A-4: Fiscal Impacts of Manufacturing/Heavy Industrial Development

Assumptions
1.5 Acres
1.67 Employees/1,000 s.f.

Facility Size = 12,800 s.f.
Employees = 21
Construction Costs = $35/s.f.
Total Project Hard Costs = $395,500
Total Project Costs (Value) = $514,000
Average Salary/Worker = $41,750
Business Personal Property Assessment = 10% of Real Property Value

Recurring Annual Taxes from Operations		
Real Property Taxes	$	11,966
Baltimore City Personal Income Tax		10,872
Business Personal Property Taxes		2,991
Total Annual Taxes from Operations	**$**	**25,829**

Note:
Assumes 40% of manufacturing workers are Baltimore City residents

Source: Milestone Associates, Inc.

Table A-5: Fiscal Impacts of Flex/Office/R&D Development

Assumptions

Single-Story Structure: Distribution-Warehouse 30%, Manufacturing 20%, Flex/R&D/Office 40%, Gen. Office 10%.

1.5 Acres
2.4 Employees/1,000 s.f.

Facility Size = 12,800 s.f.
Employees = 31
Construction Costs = $63/sq. ft.
Total Project Costs (Value) = $806,400
Average Salary/Worker = $42,263
Business Personal Property Assessment = 10% of Real Property Value

Recurring Annual Taxes from Operations	
Real Property Taxes	$ 18,773
Baltimore City Personal Income Tax*	16,261
Business Personal Property Taxes	4,693
Total Annual Taxes from Operations	**$ 39,727**

*Based upon the following assumptions:

Job Type	City Employees	Weighted # of Employees	Annual Salary	Total Payroll	City Employee Payroll
Warehouse	8.37 (90%)	9.3	$24,960	$232,128	$208,915
Manufacturing	2.48 (40%)	6.2	$41,750	$258,850	$103,540
Flex/R & D	3.72 (30%)	12.4	$48,100	$596,440	$178,932
General Office	.78 (25%)	3.1	$42,500	$131,750	$33,150
Total		31		$1,219,168	$524,537

Source: Milestone Associates, Inc.

Table A-6: Fiscal Impacts of Distribution Warehouse Development

Assumptions
Single story structure (100% warehouse)
1.5 Acres
0.38 Employees/1,000 s.f.

Facility Size = 12,800 s.f.
Employees = 5
Construction Costs = $35/sq. ft.
Total Project Costs (Value) = $514,000
Average Salary/Worker = $28,000
Business Personal Property Assessment = 10% of Real Property Value

Recurring Annual Taxes from Operations		
Real Property Taxes	$	11,966
Baltimore City Personal Income Tax		3,906
Business Personal Property Taxes		2,991
Total Annual Taxes from Operations	**$**	**18,863**

Assumption:
90% of warehouse workers are Baltimore City residents

Source: Milestone Associates, Inc.

Table A-7: Fiscal Impacts of Big-Box Retail

Assumptions

Typical Store:	120,000sq.ft.	Retail
	5,000sq.ft.	Office
	10,000sq.ft.	Receiving & Storage
	135,000sq.ft.	

Typical Site Size:	15-20 acres (assume 15 acres)
Improvements:	High-bay, 35' ceilings.
Costs:	$15,000,000 per site (Value)
Workforce Requirements: (275 Total Employees)	75 Full-Time employees per shift; one-third salaried 50 Part-Time employees averaging 20 hours per week $40,000 is average salary for salaried employees $8.50 per hour is average hourly wage Job types include sales persons, stock clerks and cashiers
Gross Sales Assumption:	$400 per square foot 125,000 * $400 = $50,000,000 Annual Gross Sales

Recurring Annual Taxes

		Total	Per 1.5 Acre
Real Property Taxes		$349,200	$34,920
Estimated Payroll:			
Salaried (25 @ $40,000)	$1,000,000		
Full-Time (200 @ $8.50/hour)	3,536,000		
Part-Time (50 @ $8.50; 20 hours/week)	442,000		
Total Payroll (275 employees)	$4,978,000		
Baltimore City Personal Income Tax		138,886	13,860
Business Personal Property Tax		87,300	$8,730
Total Taxes Received		**$575,386**	**$57,510**

*Assumes 90 percent of employees are Baltimore City residents.

Source: Milestone Associates, Inc.

Table A-8: Baltimore City Industrial Sites Changed to Non-Industrial Use

Site/developer	Former Use	New Use / Intended Use	Project Size	Impact	Zoning issue	Status, 6/02
Canton – completed or under construction						
American Can/2400 Boston St Struever Bro's	Can Manufacturing closed 1983??	Mixed Use – Retail, Office, Emerging Technology Ctr incubator; DAP Hdqrtrs.	300,000 sq ft	800 jobs; DAP hdqrtrs	Industrial changed to commercial/ PUD	Completed 1996
Brewer's Hill (Gunther & National Breweries)/1300 & 1400 Blocks, S Conkling. P.F. Obrecht/SBER	Gunther and National Breweries but vacant since 1985	Mixed Use: 700,000 sf office, warehouse, retail 200 DU's	30 ac Total 700,000 sf	2,000 jobs $100 mil investment	Industrial PUD/office uses conditional, allows retail if supportive of office also large retailers not competitive with. Highlandtown	Zoning, assembly complete
Canton Crossing/Highland & Boston Ed Hale	Exxon Petroleum distribution/closed 1999	Mixed use: office, hotel, retail, 100 DU resid'l	50 acres/1 mil. sf	4,800 jobs $95 million investment	Industrial PUD allowing uses specified	Remediation underway; Under option
NOTE: **From 1980 to 1990 about 50? acres of former industrial property was converted to residential, commercial, and marina uses**						
Canton – proposed, planned, and "unstable"						
Exxon property	Tank farm	Arena	80 ac			Unlikely to proceed

Site/developer	Former Use	New Use / Intended Use	Project Size	Impact	Zoning issue	Status, 6/02
Fells Point – completed or under construction						
Constellation Properties/ 1411 Thames Struever Bro's	Maritime, but vacant sine 1980	Mixed Use RTKL lead office tenant	5.9 acres	800 jobs projected	Fells pt renewal plan changed to PUD	Under Construction
North Shores/Boston & Patterson Pk	???	Apartments???			Renewal Plan changed to R	
Belt's/Fells & Thames	???	Townhomes	___ ac; ____ DU		Renewal Plan changed to R	
Arundel Station/1820 Lancaster Larry Silverstein	Concrete plant till 1990	Mixed use	130,000 sf office, retail; 70 DU's		Renewal Plan changed to R	
NOTE: **From 1980-1990 about 50? acres of waterfront/maritime industrial land was converted to residential, commercial and marina uses. Tideco Wharf, Canton Cove, Henderson's Wharf, Thames Point and several others are in this category. These projects probably total 1,500 DU's.**						
Fells Point – proposed, planned, and "unstable:"						
Harbor Point (GE/Allied) SBER/Paterakis	Chrome manufacturing till 1983	Mixed Use	27 ac	5,000 jobs 300 DU's $150 mil investment	Renewal Plan changed to B w/ PUD	Option/ Planned

Site/developer	Former Use	New Use / Intended Use	Project Size	Impact	Zoning issue	Status, 6/02
Carroll-Camden – completed or under construction						
Camden Yards Sports Complex/ Ostend-Howard-Russell-Camden	Various industry	Stadium complex	85 ac			Completed 1992
Carroll-Camden - Planned, proposed, or "unstable':						
Parker Metals/1301 S. Howard St. Himmelrich Assoc.	Metal fabricating	Office	4 ac/46,000 sq ft	180 jobs – potential	Zoning is industrial/ office uses conditional	MDE clearance; awaiting lead tenant
Warner Street/ 1501-57 Russell St, 1400-1600 Warner St Baltimore Development Corp.	Currently 80% vacant	Office –technology-night clubs	15 acres	To be determined	Zoning is industrial/ office uses conditional	City acquisition underway
Durrette-Sheppard/1301 Wicomoco Baltimore Development Corp.	Multi-tenant industrial, about 40% occupied	Industrial or soundstage	16 ac	245 jobs projected for sound stage		City acquisition proposed
Camden Crossing / Koppers 301 Parkin St. Metro Ventures	Manufacturing, closed 1980	Residential	12 acres	146 townhouses $19 mil. investment	Renewal plan changed to R	Final Design, remediation, construction – summer 2002
Montgomery Wards/1000 Washington Blvd Himmelrich Assoc	Montgomery Wards warehouse until 1985; now multi-tenant industrial	20 ac site adjoining Montgomery park – consider for big box retail	20 ac current ind'l bldg - 450,000 sf		Industrial PUD	

Site/developer	Former use	New Use / Intended Use	Project Size	Impact	Zoning issue	Status, 6/02
S. Baltimore, completed or under construction:						
Fort Ave Shopping Ctr Fort & Lawrence		Retail shopping center	13 ac, 150,000 sf		Industrial PUD	Completed in 1996
Little Havana, 1325 Key Hwy)		Restaurant	1 ac		Restaurant approved as conditional uses	Completed 1998?
Globe Restaurant, Key Hwy		Restaurant, but now closed, future use under discussion	1 ac			Completed 1998? Now closed
Port Covington Starwood Ceruzzi	Rail yard till 1980	Big Box retail (Walmart, Sam's Club)	62 ac 410,000 sf	$50 million 600 jobs	Industrial PUD	Partially open 2002
Tide Point/Proctor & Gamble/1422 Nicholson St Struever Brothers	Procter & Gamble/Soap manufacturing	Office and e-commerce E-Imagination	20 acres/400,000 sq ft	1,600 jobs- potential $62 mil. investment	Industrial PUD/ office uses conditional	70% leased
S. Baltimore*:* ***Proposed, Planned, and unstable:***						
Former White Paint/Greenspon 921 East Fort Ave SBER	Paint Co., vacant	tbd	10 ac	Tbd		

Site/developer	Former use	New Use / Intended Use	Project Size	Impact	Zoning issue	Status, 6/02
Chesapeake Paperboard – Fort Ave SBER	Paper re-cycling	residential considered	18 ac	122 DU's		Developer dropping earlier plans for residential
GE/920 E. Fort Ave	Appliance repair shop closed 1988	Likely non-industrial use	3 ac			
1300 Race St	P. W. Feats	Proposed for mixed use w/ residential	1.86 ac			
Tidewater Marine, 1020 Key Hwy	Yacht repair	Likely target for change of use	2 ac			
Egan Marine, ___ Key Hwy	Boat repair	Likely target for change of use	1 ac			
Shipley Hill and SW: completed and under construction:						
Patapsco Ave – several small commercial at intersections	Various	Retail				
Holiday Inn/1401 Bloomfield at Caton	Vacant land	Hotel expansion within Caton-95 Business park	5 ac		PUD	

Site/developer	Former use	New Use / Intended Use	Project Size	Impact	Zoning issue	Status, 6/02
Shipley Hill and SW: Proposed, planned and "unstable**":**						
Maryland Lumber/2601 Franklin St	Lumber yard till 1995	Proposed church	4.3 ac			Available for development
0-300 Block Franklintown Rd	Paint co, bus co., meat packing, others	Residential/Park considered	12 ac			Preliminary community plan
Eigengott Brewery/Hollins & Warwick	Brewery closed	OROSW plan – senior housing	4 ac?			inactive
Other Shipley Hill – see Operation Reach out SW Plan						
Jones Falls Valley – complete or under construction						
Green Spring Shopping Ctr 41st St & Medfield	Green Spring Dairy	Retail	15 ac, 180,000 sf		Industrial PUD	Completed 1996
Anderson Auto/25th St & Huntington	Vacant industrial	Car dealership – parking lot expansion	5 ac?		???	Completed 1988?
Meadow Mill/3600 Clipper Rd Himmelrich Assoc	Londontown trench coat manufacturing	Office, athletic club	5 ac/80,000 sf			Completed 1989?
Steiff Silver/Pacific & Chestnut Struever Brothers	Silver manufacturing/ closed 1999	Office	2.7 ac.; 80,000 sf renovated + 15,000 sf new	330 jobs – potential $13 million	Retained industrial/ office uses conditional to BMZA	Under Construction, 50% leased

Site/developer	Former use	New Use / Intended Use	Project Size	Impact	Zoning issue	Status, 6/02
Jones Falls Valley – proposed, planned, and "unstable"						
Clipper Industrial Park/3500 Clipper Rd William Polloway SBER	Multi-tenant industrial	Soundstage being examined for feasibility; SBER considering residential/mixed use	17 ac.	245 jobs projected for soundstage	industrial	
Hooper property/2165 Druid Pk Dr	???	Jones Falls Valley Plan – High density mixed use	10 ac		Industrial	
Sears and Hedwin sites/1700 W. 41st st; 1600 Roland Hts Ave	Sears appliance repair Hedwin	Jones Falls Valley Plan – High density mixed use	20 ac?			
Mumaw Plumbing/2121 Druid Park Drive	Plumbing parts	Jones Falls Valley Plan – "Digital Valley"	2.2 ac			
Ilex Construction/1700 Union Ave	Construction	Jones Falls Valley Plan – "Digital Valley"	1.7 ac			
Lifelike Products/Union Ave	Manufacturing Styrofoam	Jones Falls Valley Plan – residential or office				
Komar Properties/3300 Clipper Road	???	Jones Falls Valley Plan – Mixed use development	5.2 ac			
Sisson St Station/Howard-Sisson-26th St	???	Jones Falls Valley Plan – Office-tech park				
Potts and Callahan/2710, 2800 Falls Rd	Construction yard	Jones Falls Valley Plan – Park and residential	3 ac			

Site/developer	Former Use	New Use / Intended Use	Project Size	Impact	Zoning issue	Status, 6/02
Central Ave – proposed, planned, or "unstable:"						
Holland Manufacturing/Central & Bank St	Vacant since 1980					
Other Central Ave – see Central Ave Plan						
Pulaski-Erdman – complete or under construction						
Home Depot 6315 Eastern Ave	???	Retail	12 ac, 100,000 sf		Qualified under zoning as a warehouse	Completed 2000
Pulaski-Erdman – proposed, planned, and "unstable"						
Eastern and Kane (NEC)	???	Shopping ctr planned	??		Industrial PUD	
4201 E. Monument St (United Iron and Metal)	Scrap yard	Retail supermarket proposed	5.5 ac		Proposed industrial PUD	Supermarket plans not advancing

Site/developer	Former Use	New Use / Intended Use	Project Size	Impact	Zoning issue	Status, 6/02
Other areas: – proposed, planned, and "unstable"						
Potee & Garrett/3700 Potee St City of Baltimore	Auto salvage closed in 1980	Supermarket/commercial development being considered	17 ac		Current zoning is part commercial and part industrial	Early planning
Acme Business Ctr B. Kapiloff	Food distribution until 1985; most recently tire storage	Use tbd	17 ac			Property being marketed thru RFP

Appendix B. Zoning Case Study Materials