

Preparing Modern Intermodal Freight Infrastructure to Support Brownfield Economic Development – Phase I



A Joint Project of the
North Jersey Transportation Planning Authority, Inc. and
the New Jersey Institute of Technology

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Photos in this report are of known or suspected contaminated sites taken during the project field validation effort.

EXECUTIVE SUMMARY

Preparing Modern Intermodal Freight Infrastructure to Support Brownfield Economic Development – Phase I

The North Jersey Transportation Planning Authority, Inc. and the New Jersey Institute of Technology have completed the first phase of an innovative project to explore the opportunities for freight-related redevelopment of abandoned industrial brownfield sites. The project is funded under the federal Transportation and Community and System Preservation Pilot (TCSP) program.

The project seeks to harness a major economic development opportunity brought about by the huge projected growth of freight traffic in the region. The volume of freight containers handled by the Port of New York and New Jersey, which serves 38 percent of the US population, is expected to double within ten years. By the year 2040, according to conservative projections, this volume could increase more than sixfold. Currently, nearly 90 percent of the port's container traffic moves through facilities in Newark and Elizabeth.

At the same time, the region's extensive rail freight network is being upgraded and expanded as a result of the acquisition of Conrail by Norfolk-Southern and CSX railroads and Newark International Airport has become one of the largest and fastest growing air cargo hubs in North America.

The increase in freight activity will be a welcome development, creating thousands of new jobs not only in freight businesses

themselves but in new “spin-off” businesses engaged in warehousing, packaging, assembly and other support services. Currently, New Jersey freight businesses handle goods worth \$286 billion and directly employ 484,000 workers

But the projected increase in freight activity also presents a potential threat. Based on current real estate trends, many of these businesses are choosing to locate on “greenfield” sites on the fringes of the region where land and development costs are lowest. This trend threatens to compound roadway congestion, consume precious open space, worsen the region's air quality and disrupt life in the region's communities. Ultimately, these problems could dampen future economic growth.



NJTPA-NJIT project seeks to counter these trends through a broad-based, coordinated planning effort to encourage freight businesses to locate in the region's brownfield sites near to the port and airport. The project is working to develop a comprehensive analysis, methodology and set of recommendations that will facilitate efforts by government and the private sector to pursue this type of freight-related brownfields redevelopment.

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Phase I of the NJTPA-NJIT project consisted of four tasks — Market Analysis, Environmental Scan, Community Outreach and Evaluation — which are discussed below. In carrying out these tasks, the project team coordinated with a number of related efforts at various levels of government. These included:

- *The State Brownfields Redevelopment Task Force* — an official body created by the NJ Legislature to coordinate general statewide brownfields efforts;
- *Brownfield Pilot Projects* — local and county brownfield redevelopment projects funded by EPA;
- *The Portway project* — a proposed 17-mile partially-dedicated freight service corridor linking the port, the airport, intermodal rail terminals and regional highways
- *The International Intermodal Transportation Corridor and Center (IITCC)* — a federally funded economic zone of interlinked businesses served by efficient goods movement infrastructure;



- *The Comprehensive Port Improvement Plan* — an initiative of the USEPA and the Army Corps of Engineers in conjunction with a consortium of New York and New Jersey agencies;

- *Port Authority of New York & New Jersey Capital Plans* — the authority plans to expand capacity and improve the efficiency of goods movement within the port.

MARKET ANALYSIS

This task was undertaken with the assistance of the consulting firm Moffat & Nichol Engineers. It involved surveying analogous US regions with strong goods movement sectors – particularly Los Angeles and Long Beach, CA. Based on the survey, this task assessed the future of the freight industry in

Located in clean, modern facilities and employing workers with a range of skills, West Coast-style “value-added” warehouses could be a model for the reuse of North Jersey brownfield sites.

northern New Jersey and the prospects for freight-related brownfields redevelopment. This activity was supplemented by a separate survey and analysis of the warehousing and distribution industry in northern New Jersey conducted by consultant Ann Strauss-Wieder. Among the key findings and lessons learned from the Market Analysis were the following:

- A large number of firms within 15 miles of the West Coast ports of Long Beach and Los Angeles are engaged in processing goods arriving from Asia, including assembly, packaging, labeling and other operations to add value to the goods. Located in clean, modern facilities of up to 100,00 square feet and employing workers with a range of skill levels, this “value-added” business sector could provide a model for facilities that might be built on brownfield sites in northern New Jersey.
- As a result of the dredging of the region’s port channels over the next ten years, a new class of mega-ships – with up to twice the capacity of most current vessels – will call at the North Jersey port, bringing goods directly from Asia through the Suez Canal.

To handle these goods – including electronics, clothing and toys – new West Coast style warehouses and value added facilities will be needed in the region.

- Today, freight distribution in the NJTPA region depends heavily on traditional “big box” warehouses of 200,000 square feet or more. These warehouses – handling a large share of finished goods from Europe such as food, beverages, paper and household items – increasingly are located on the fringes of the region, including Exit 8A of the Turnpike and Lehigh Valley, Pennsylvania.
- A large number of brownfields near to the Port and Airport are available to accommodate freight businesses that will accompany growing port trade. However, the

Because of the strong regional economy and the creation of state and federal brownfields programs, many towns and property owners are now aware that brownfield sites have become potentially important assets

increased cost of developing these properties, the stigma attached to them and the need for transportation improvements must be addressed to make them competitive with greenfield areas.

- Because demand for freight related facilities near the Port is likely to take several years to fully develop, the region should begin now to landbank brownfield sites of 10 to 150 acres for future use.
- The region should work to attract “pioneer” companies to blighted brownfield areas. These companies can serve as anchors for encouraging further redevelopment, including the eventual establishment of value added facilities.
- The Port Authority of NY/NJ, which is seeking to move some existing freight

facilities to make way for port expansion, should support and encourage redevelopment of nearby brownfields.

- Brownfield sites that have promise for freight related redevelopment are likely to be those located within 35 miles of the port (ideally within 15 miles) and within two miles of a highway exit or on a freight rail line. They should also be larger than 3.3 acres and located away from residential areas.

ENVIRONMENTAL SCAN

This task was undertaken with the assistance of the consulting firm BEM, Inc. It involved compiling a database of brownfield sites in the NJTPA region and mapping the sites on a computer GIS system. The data base was then screened using criteria developed in the Market



Analysis to create an inventory of brownfield sites with promise for freight-related redevelopment. Further screening based on local input and field inspections were used to identify several dozen sites that would be candidates for five to six site specific case studies during Phase II. Among the key findings and lessons learned from the Environmental Scan were the following:

- Available data sources on brownfields are far from comprehensive and contain incomplete or faulty information.
- While the New Jersey Department of Environmental Protection's Known Contaminated Sites List (KCSL) is a good starting point for compiling an inventory of

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brownfields sites, it must be supplemented by site inspections, property tax record searches and, most importantly, outreach to knowledgeable local officials.

- Many brownfield sites close to the port and



airport are currently are in “low level” use – such as providing parking for truck trailers or storage of freight containers.

- Because of the strong regional economy and the creation of state and federal brownfields programs, many towns and property owners are now aware that brownfield sites have become potentially important assets and have begun efforts to plan or encourage their redevelopment

- Most town officials, property owners and other stakeholders contacted during the

project expressed interest and support for efforts to promote freight related brownfields redevelopment along the lines suggested by the NJTPA-NJIT market analysis.

- Several local officials are adamant about seeking the development of offices, retail or entertainment facilities for brownfield sites, even in former industrial areas. Further outreach and education will be needed to demonstrate that freight related reuse can result in attractive, modern facilities; an expanding job base; and a

Government policies, investments and regulations should be realigned to create a comprehensive plan for encouraging freight related reuse of brownfields in the port district.

promising economic future based on the expected dramatic growth in port trade.

- In keeping with their “home rule” prerogatives some towns are very wary about sharing information on their sites for fear of losing or compromising their control over redevelopment plans.

COMMUNITY OUTREACH

This task was undertaken with the assistance of the consulting firm McClaren Hart, Inc. It included a multilevel outreach approach that involved periodic meetings of an Advisory Committee, a quarterly project newsletter, community meetings, workshops and the NJTPA web site. Many activities were undertaken in conjunction with gathering information on specific sites as part of the Environmental Scan. Among the key findings and lessons learned from the Community Outreach were the following:

- Private sector representatives are particularly interested in the findings of the Market Analysis concerning the increases in freight moving through the port and the business activity it will generate.
- Many local governments, property owners and other interested parties remain uninformed about state and federal brownfields initiatives and programs. Increased “missionary” work on the part of federal and state agencies would help sustain and broaden the local efforts for reclaiming brownfield sites.
- The outreach conducted during Phase I achieved a broad network of groups and individuals who have been informed about the project and whose expertise and participation can be drawn upon in continuing project activities.

EVALUATION

This task was undertaken with the assistance of the consulting firm of Muller-Bohlin Associates, Inc (MBA). It was designed to provide feedback to the investigators during Phase I as well as an overall, summative evaluation of the impact of the project. MBA offered valuable assessments of strategies being discussed which helped the project team make needed mid-course corrections. Muller-Bohlin also reviewed the draft Market Analysis reports and submitted a commentary on this effort. A summative evaluation report on Phase I is being prepared.



PHASE II

The successful completion of the above tasks has provided the foundation for Phase II which involves the detailed investigation of several case study sites. This will include estimating remediation costs, conducting community outreach, developing an analysis of transportation issues relating to the sites, evaluating potential redevelopment at each site and suggesting appropriate marketing strategies. Important final products of the entire project will include:

- An overall project methodology detailing strategies for realizing freight related redevelopment for use by local governments and the private sector; and

- A Transportation and Community Action Plan containing recommendations for improved transportation access and site-specific brownfields redevelopment options that can be considered by the NJTPA, state and local agencies, private sector organizations and other entities.

Land should be acquired to establish Planned Unit Developments consisting of clusters of modern warehouses and freight facilities along the Portway alignment.

CONCLUSIONS

Phase I has confirmed that the development of warehousing and other freight related facilities on greenfield sites throughout the region is a major continuing trend. Unless this trend is slowed or reversed, the negative consequences – in terms of air quality, open space and quality of life — could be profound given the dramatic increases in freight projected over the next several years. Formal conclusions and recommendations on how to address this trend must await the outcome of Phase II. However, some implications can be drawn from the project thus far. These include the following:

- The state should work with local governments, regional agencies and the private sector to develop a comprehensive plan for the North Jersey port district that would realign government policies, investments and regulations to support redevelopment of brownfield sites for freight related uses. This would help fulfill goals of the State Development and Redevelopment Plan for averting sprawl and promoting urban revitalization.
- The Portway project will be crucial to encouraging brownfields redevelopment. Once completed, the roadway can efficiently link and serve numerous warehouse and value added processing facilities established on brownfield sites throughout the port district. This vision of an economic “string of pearls” along Portway could pro-

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vide the basis for a comprehensive port district development plan.

- To realize this vision, the Portway project should be expedited so it is completed in step with the deepening of port channels. Additional public outreach is needed to fully inform property owners and local officials about the project, its alignment and the potential development opportunities it will create.

State environmental agencies should target the port district for expanded technical and financial assistance specifically for the clean up of sites for freight related reuse.

- The state and region should investigate acquiring properties needed to establish a number of Planned Unit Developments (PUDs) — consisting of clusters of modern warehouses and freight facilities — along the Portway alignment. Independent facilities on smaller sites should also be encouraged.
- The International Intermodal Transportation Corridor and Center (IITCC) can provide the institutional framework for accomplishing the necessary mobilization of expertise and resources for implementing a comprehensive brownfields plan in the port district. To leverage increased federal funding for IITCC, the State of New Jersey must be prepared to make substantial funding commitments to achieve its goals.
- State environmental agencies should target the port district for special brownfield efforts including expanding technical and financial assistance to property owners specifically for the clean up of sites for freight related reuse.
- As development in and around the port increases, use of alternative fuel vehicles and other “clean port” strategies should be investigated by state and regional agencies.
- Because the volume of imports is far greater than exports, there is a glut of empty freight containers at the port, many

of which are being stored in “container mountains” on brownfield sites. This discourages redevelopment and provokes community opposition. The state should



work with the Port Authority, freight companies and municipalities to develop policies or regulations that would limit the length of time empty freight containers can be stored at the port.

- The state, working with counties and towns, should seek to stem the tide of unfettered warehouse development in greenfield areas. Careful scrutiny should be given to proposals to create Foreign Trade Zones in these areas.
- The Port Authority should insure that its plans for developing “inland terminals” do not weaken efforts to make efficient use of the land, labor and other resources close at hand to the port. It should consider acquiring key brownfields sites in anticipation of its future port expansion needs.

The lessons learned from the successful completion of the project's first phase has helped the NJTPA to better understand the links between transportation infrastructure development and land use impacts. The NJTPA has updated its project selection criteria to give higher scores to proposed transportation projects that facilitate the redevelopment of brownfields. The project has also allowed the NJTPA to better assess the opportunities and impacts created by the huge volume of freight moving through the region; and has helped to create a more focused freight movement agenda in its collaborative work with other partner agencies.

FINAL REPORT

Preparing Modern Intermodal Freight Infrastructure to Support Brownfield Economic Development – Phase I

The North Jersey Transportation Planning Authority, Inc. and the New Jersey Institute of Technology have completed the first phase of an innovative project to explore the opportunities for freight-related redevelopment of abandoned industrial brownfield sites. The project is funded under the federal Transportation and Community and System Preservation Pilot (TCSP) program. Its premise is that the dramatic growth in freight moving through the port, airport and rail terminals in northern New Jersey will present important new opportunities for reclaiming brownfield sites in the region while providing new jobs for urban residents, averting inefficient sprawl, reducing the volume of trucks on regional roads and safeguarding the environment. Phase I of the project has yielded insights into the strategies that will help the region realize these opportunities and has provided the foundation for a second phase of the project which is now under way. This final report describes the activities, methodologies and findings of phase I.

PROJECT OBJECTIVES

As presented in the original NJTPA-NJIT proposal, the project seeks to harness a major economic development opportunity brought about by the huge projected growth of freight traffic at the port, airport and rail terminals in northern New Jersey.

Serving 38 percent of the US population, the Port of New York and New Jersey is expected to see its 1999 volume of approximately 2.5 million twenty-foot equivalent container units (TEUs) double within ten years. By the year



2040, according to conservative projections, port container traffic will increase more than sixfold to as many as 17 million TEUs. Currently, nearly 90 percent of

the port's container traffic moves through facilities in Newark and Elizabeth.

At the same time, the region's extensive rail freight network is being upgraded and expanded as a result of the acquisition of Conrail by Norfolk-Southern and CSX railroads and Newark International Airport has become one of the largest and fastest growing air cargo hubs in North America.

The rising tide of goods movement will result in the expansion of a variety of freight-related businesses, including those engaged in warehousing, distribution, packaging, and assembly. The NJTPA-NJIT team found that the challenges posed by this growth present the region with two starkly different futures:

- 1) Freight traffic doubles over the next decade creating welcome economic benefits for some business sectors but many freight businesses move operations to "greenfields" on the fringes of the region and in neighboring states. Open spaces in these areas are consumed by sprawl development.

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Long-distance trucking of goods to and from the core port district increases, compounding already difficult congestion, worsening air quality and wearing out aging infrastructure. Residents of urban areas near the port are left with precious few job opportunities as former industrial sites sit idle and crumbling. Ultimately, the region's problems depress further growth in trade and economic development.

- 2) Large numbers of businesses taking part in the expansion of trade in the region redevelop and locate in abandoned industrial brownfield sites scattered in and around the port district and along major routes leading to it. Upgraded transportation infrastructure allows goods from these businesses to move efficiently around the region with truck trips kept to a minimum distance while facilitating maximum use of rail intermodal services to more distant markets. Regional air quality improves. Residents of Newark, Elizabeth and other urban areas gain access to a host of new job



opportunities as warehousing, packaging and other freight related companies expand operations nearby. Cities gain new ratables allowing reinvestment in infrastructure, school systems and neighborhoods. Ultimately, the progress of the region

attracts further growth in trade and economic development.

The first scenario is the likely outcome of an unguided and haphazard response to events. Indeed, based on current real estate trends, many of these businesses are choosing to locate on “greenfield” sites on the fringes of the region where land and development costs

NJTPA-NJIT project is a coordinated planning effort to help the region prepare for the dramatic increase in port trade by encouraging freight businesses to locate in the region’ brownfield sites

are lowest. NJTPA-NJIT project seeks to counter these trends and guide the region toward the second scenario through a broad-based, coordinated planning effort to encourage freight businesses to locate in the region’s brownfield sites. The project seeks to enhance the match between the expected regional demand for developable land created by the growth of freight related business with the regional supply of appropriate brownfield sites.

With the understanding that the term “brownfield” refers to both an environmental and an economic description of a property’s condition, the TCSP sponsored Brownfield Redevelopment Project will help the NJTPA to

achieve a number of regional planning objectives for the movement of freight:

- Reduce truck congestion on the region’s major highways;
- Increase intermodal transportation opportunities by rationalizing distribution activities near major intermodal terminals;
- Reduce truck Vehicle Miles Traveled (VMT) in the region;
- Encourage economic redevelopment of abandoned, idled or underutilized properties near major transportation facilities; and
- Link transportation improvements to economic redevelopment of brownfield sites near urban populations.

PHASE I OVERVIEW

The NJTPA-NJIT Brownfields project had originally been proposed as a single \$1.388 million project. However, the federal TCSP program funded the project in two separate grants (the first for \$700,000 and the second for \$696,000). As a result, the project team was required to divide the project into two phases. The goal of the project remained the same: to develop a final comprehensive analysis, methodology and set of recommendations that will facilitate subsequent efforts by government and the private sector to pursue freight-related brownfields redevelopment. The products would be applicable to other

regions of the U.S. with similar infrastructures.

Phase I was carried out under the direction of a project team from NJTPA and NJIT. Major project tasks have been accomplished with the assistance of a number of consultants and an advisory committee of public and private officials. In addition, NJIT graduate and undergraduate students were employed on specific tasks.

The following is a summary of the four tasks that comprised Phase I (they are discussed in more detail later in this report):

Market Analysis focuses on freight and brownfield development in other regions, changes in national and international trade patterns affecting the northern New Jersey region and trends in regional warehousing.

Environmental Scan focuses on identifying and gathering information on brownfield sites, developing a Geographic Information System and selecting case studies for Phase II.

Community Outreach - focuses on educating and enlisting the support of diverse stakeholders concerned about brownfield redevelopment.

Evaluation focuses on evaluating the methodology and achievements of the project.

These tasks have provided the foundation for the commencement of Phase II which involves the detailed investigation of several case study sites. This will include estimating remediation costs, conducting community outreach, developing an analysis of transportation issues relating to improved freight and workforce access to the sites, evaluating potential redevelopment at each site and suggesting appropriate marketing strategies.

Final products of the entire project will be an overall project methodology detailing strategies for realizing freight related redevelopment for use by local governments and the private sector and a Transportation and Community Action Plan contain-



ing recommendations for improved transportation access and site-specific brownfields redevelopment options that can be considered by the NJTPA, state and local agencies, private sector organizations and other entities.

PROJECT CONTEXT

The NJTPA-NJIT Brownfields project is being carried out in the midst of a growing level of public and private activity to address

The project goal is to develop a comprehensive analysis, methodology and set of recommendations for use by government and the private sector in redeveloping brownfields

brownfield and freight issues. One of the challenges the project team has faced stems from the extremely dynamic real estate market. As a result of the strong economy as well as relatively new state and federal programs to facilitate the redevelopment of brownfields, there has been an unprecedented interest in brownfields in the region. A number of properties that were initially identified as potential sites for freight related development were found to have already been purchased by developers. In other cases, owners have undertaken environmental clean up in anticipation of redevelopment. Still there are a large number of sites scattered throughout the region that are appropriate for freight related redevelopment. The project team has sought to stay abreast of developments in the real estate market.

It has also sought to coordinate

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with a number of related efforts at various levels of government. The goal has been to avoid duplication of effort and to maximize the usefulness of the information products developed in the course of the project. Among the public sector initiatives relating to the project are the following:

State Brownfields Redevelopment

Task Force This task force includes representatives of State agencies and the public, and is charged with examining state legislation and policies relating to brownfields. It is compiling a statewide inventory of brownfield sites. The NJTPA-NJIT team has attended meetings of the Task Force and has shared information with staff working on the Task Force.

EPA Pilots— Several communities throughout northern New Jersey have received grants from the EPA to develop pilot projects for brownfields redevelopment. The NJTPA-NJIT team has been able to work closely with a number of the EPA Pilot efforts, including making presentations at meetings, meeting with town officials and sharing information regarding specific sites.

Portway— The State of New Jersey's Portway project is being planned as a 17-mile partially-dedicated trucking corridor that is intended to provide fast and efficient movement of goods between key port, airport and intermodal rail terminals. It is being undertaken as a series of discrete projects that will improve existing road and bridge infrastructure. Portway will incorpo-

rate features such as overweight container handling capability and intelligent transportation systems (ITS) technology. In addition to speeding goods movement and helping relieve congestion on local roads, Portway will open up redevelopment opportunities for brownfields and old industrial properties along and near to its alignment. For this reason, the NJTPA-NJIT team has worked closely with NJDOT staff to insure that plans regarding transportation access to brownfields are coordinated.

International Intermodal Transportation Corridor and Center (IITCC)

The Portway project has been incorporated into a geographically larger federally financed freight corridor development program in northern New Jersey called the "International Intermodal Transportation Corridor and Center" (IITCC). Federal funding has been earmarked in TEA-21 towards development of the corridor. The IITCC envisions an economic zone of interlinked businesses including major New Jersey industries such as transportation, pharmaceuticals, telecommunications, petrochemicals and others, served by efficient goods movement infrastructure. NJIT has been designated as the research and resource "center" of the International Corridor effort and will provide support to the state, the NJTPA and other entities involved in the movement of goods. Efforts are under way to coordinate IITCC plans with the NJTPA-NJIT brownfields project. Staff from the Corridor Center are

serving on the NJTPA-NJIT project team.

Comprehensive Port Improvement Plan

This plan and an accompanying Environmental Impact Statement are being undertaken by the USEPA and the Army Corps of Engineers in conjunction with a consortium of New York and New Jersey agencies. It is intended to guide and coordinate the various port planning activities under way. The NJTPA –NJIT project team has been monitoring the development of this Plan, bringing a brownfield perspective to its development.

Port Authority capital plans

The Port Authority of New York & New Jersey has released "Building a 21st Century Port" which outlines its plans to expand capacity within the port to meet growing international trade demands. Among the elements of its plan are



expansion of existing terminals and the development of new ones; continued maintenance dredging and channel deepening; and plans to develop a Port Inland Distribution Network composed of private inland container terminals located 100 miles or more from the port and served by rail and barge. The NJTPA-NJIT team continues to consult with the Port Authority on how the NJTPA-NJIT brownfields redevelopment

project and its approach to freight handling issues can further and integrate with this plan.

In addition to these key initiatives, the NJTPA-NJIT team has coordinated with other related efforts including the State Development and Redevelopment Plan, the State Rail Plan, local economic development initiatives and the New York Cross Harbor and Port Development effort. It has also collaborated with other regions facing similar transportation issues.

MARKET ANALYSIS

The Market Analysis conducted during Phase I resulted in groundbreaking insights about prospects for brownfields economic development resulting from the growth of freight traffic in northern New Jersey.

The principal Market Analysis investigation was conducted by Dr. John Ricklefs of Moffat-Nichol Engineers. It focused on four areas: 1) surveying freight distribution facilities and development patterns at analogous ports on the West Coast, especially the ports of Long Beach and Los Angeles; 2) analyzing existing freight distribution in the NJTPA region; 3) examining brownfields redevelopment nationally and in the NJTPA region; and 4) analyzing future trade patterns that will

affect freight distribution in the NJTPA region. The final report for this investigation has been provided separately in the package accompanying this document.

Supplementing this effort was a second Market Analysis investigation conducted by Ann Strauss-Wieder which focused narrowly on trends in the warehousing industry in the NJTPA region and the implications of these trends for brownfields redevelopment. A final report for this investigation has also been provided separately.

SHIFT IN TRADE PATTERNS

In summary, Dr. Ricklefs's investigation revealed that over the next several years shifts in international trade patterns are likely to cause dramatic changes in the region's goods distribution network that will create strong demand for new space to handle the river of freight moving through the region. This demand will, in turn, greatly enhance the opportunities for brownfields reuse.

Currently, the largest share of goods traveling into the Port of New York and New Jersey (PONYNJ) originates in Europe. In contrast, the largest ports on the West Coast (the ports of Long Beach and Los Angeles in the San Pedro Bay area) primary handle goods from Asia. These differing origins of goods result in different profiles of commodities: goods

entering the PONYNJ tend to be bulkier finished goods such as beverages, foods, autos, paper and household items while Asian goods entering West coast ports include a large share of textiles, electronics, toys and sporting goods. The PONYNJ now has a relatively small share of the massive and growing volume of Asian imports. Indeed, a surprising finding of the Market Analysis was



that most foreign goods imported into the NJTPA region do not arrive at the region's marine port; rather they are unloaded at West Coast ports and then are shipped mostly by rail over the so-called "landbridge" to the East Coast.

This pattern will begin to change as a result of the dredging of the region's port channels. Over the next ten years channels will be deepened to 50 feet, allowing the region to accommodate a new class of mega-ships – with up to twice the capacity of most current vessels -- that increasingly is being used for international goods movement. As the dredging proceeds, shippers will find it economical to use these vessels to transport Asian goods directly to the PONYNJ, taking a route

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through the Suez Canal and across the Atlantic Ocean with intermediate stops along the way.

VALUE ADDED FACILITIES

Based on his survey of West Coast ports, Dr. Ricklefs found that the arrival of a direct stream of Asian goods will prompt new forms of warehousing and distribution. In the San Pedro Bay area, the Asian trade has spawned a large number of firms within 15 miles of the port engaged in activities to increase the potential resale value of the commodities. This includes bar-coding, combining products into kits, “pick and pack” and assembly of components and marketing materials. About eight percent of the Asian goods shipped via rail to the NJTPA region first undergo such “value added” processing in the San Pedro Bay.

Typically, at such San Pedro Bay facilities, freight containers are unloaded, the contents undergo sorting and value added processing and then the goods are loaded onto trucks for distribution directly to stores or to larger regional warehouses on the fringes of the region -- all within 24 to 48 hours. The rapid turnaround, often accomplished with automated goods handling systems, helps meet the growing demand of companies for “just-in-time” delivery of goods and supplies which reduces their need to maintain large inventories on hand. The facilities are usually 100,000 square feet or less and

provide their services on contract to a number of companies. They are often clustered together in modern industrial park settings, known as Planned Unit Developments (PUDs), and employ a range of skilled and unskilled workers. Dr. Ricklefs also found an emerging variant of these types of facilities that ship goods

Shifts in international trade patterns are causing dramatic changes in the region’s goods distribution network and creating strong demand for new space to handle the river of freight moving through the region.

directly to consumers who place orders over the internet.

LOCAL WAREHOUSING

In contrast to such West Coast goods handling, freight distribution in the NJTPA region depends heavily on traditional “big box” warehouses of 200,000



square feet or more. Such facilities, which have mostly disappeared from the San Pedro Bay area, must be large to allow the storage of

large volumes of goods, often for weeks or months. Because of their need for land, traditional warehouses have migrated to the fringes of the region, including Exit 8A of the Turnpike and Lehigh Valley, Pennsylvania.

Analysis by consultant Ann Strauss-Wieder found that this warehousing and distribution industry is a large and growing sector of the economy in the NJTPA region. She found that there is nearly 736 million square feet of industrial space within northern and central New Jersey, with nearly four million additional square feet under construction. Of this, nearly 440 million square feet are accounted for by warehouse and distribution space. She further found that an estimated 380,000 workers are involved in many stages of distribution and manufacturing finishing in the NJTPA region.

Ann Strauss-Wieder’s investigation indicates that West Coast style goods distribution is present in the NJTPA region, though it is limited in scope. The NJTPA-NJIT team toured a former industrial facility on a brownfield site in Elizabeth that has been converted into a warehouse and processing center for imported goods. Currently, prisoners re-entering the workforce are employed in value added processing at the site, including creating gift packages of foodstuffs.

In addition, Ann Strauss-Wieder found that many companies with

traditional warehouses are engaged in some form of value added processing because it is no longer economical to use warehouses solely for static storage. She notes that warehouses have become “the location for the last steps in the manufacturing process.” One company located at Exit 8A, for instance, uses its facility to package kitchen knives imported through the PONYNJ into assortments prior to their distribution to retail stores throughout the US. (Traditional warehouses also have greatly increased their turnover of goods in response to “just-in-time” delivery demands.)

FUTURE WAREHOUSING

The scattered examples of value added processing found in the NJTPA region are likely to grow more numerous when dredging of channels allows Asian goods to begin arriving at the port in large volumes – bringing electronics and other consumer goods that are more amenable to this processing. As suggested by the experience in the San Pedro Bay area, this development is likely to generate significant added demand for land close to the port where many brownfields are located.

While the prospect of this demand represents much promise for improving the marketability of brownfield sites, the finding that this demand may not be fully realized for several years has presented the NJTPA-NJIT project

team with a challenge in its efforts to identify strategies and create a methodology to facilitate freight related brownfields redevelopment. Towns and property owners are unlikely to go to the often considerable expense of cleaning up brownfield sites now when the prospects of developing them for value added processing could be years away. Moreover, Dr. Ricklefs found that property owners would most likely have to take on the added risk of building appropriate facilities “on spec,” because – at least on the West

On the West Coast, Asian trade – which will grow dramatically in North Jersey as the port is dredged – has spawned a large number of firms engaged in “value-added” processing near port facilities.

Coast – value added processing companies are reluctant to take on the burdens of land development and building. The preference of such companies for locating in industrial park settings presents a further complication in that the many smaller brownfield sites near the port may not be appropriate for siting value added facilities unless they are assembled into larger tracts on which clusters of buildings (PUD’s) can be established.

To address these difficulties, Dr.

Ricklefs recommends a number of actions on the part of government, including the “land banking” of sites from 10 to 150 acres near the port and integrating economic development considerations into the planning of Portway. These and other policy implications of the Market Analysis are dealt with in the “Conclusions” section of this final report.

PROJECT STRATEGIES

For the project team, the findings of the Market Analysis suggested that the project’s efforts to identify strategies for reclaiming brownfield sites must focus on types of redevelopment that both have significant demand in the near term and also hold out the possibility of being compatible with or even enhancing value added uses in the long term. One prospect, identified by Ann Strauss-Wieder, involves a segment of the existing warehousing and distribution industry that desires close proximity to the New York-New Jersey consumer market. Many of companies serving this market may consider urban brownfield locations because the reduced trucking times they would realize (along with a ready labor supply) could offset higher land and development costs. These savings would also apply to companies engaged in import-export activities that require proximity to the port or

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airport. Attracting one or more of these companies to a blighted industrial area could serve as the anchor for encouraging further redevelopment in the area, including the eventual establishment of value added facilities. Motivating such companies to become pioneers in brownfield areas may require additional financial incentives (as discussed in the “Conclusions” section of this report).

Another redevelopment prospect involves warehousing and freight operations currently located at the port itself. Many of these operations involve “transloading” goods from overweight marine containers to other containers that meet size and weight requirements on the region’s roadways. As part of its plans to expand port capacity, the Port Authority of NY/NJ is seeking to move some of these facilities off the port to adjacent areas. The NJTPA-NJIT project team has begun discussions with the Port Authority regarding the possible use of brownfield sites for the relocated facilities. These facilities may be well suited to value added operations which can be performed as goods are transferred between containers. The Portway project, which is being designed to accommodate overweight containers, will provide the goods movement infrastructure needed for the relocation of transloading operations within the port district.

GENERAL CRITERIA

While the Market Analysis provided important and valuable insights into current and future goods movement trends, the difficulties encountered in identifying the exact nature of freight-related development prospects for urban brownfield sites meant that the Market Analysis did not completely fulfill all the original expectations of the project. In particular, it did not provide the kind of definitive and detailed criteria that had been originally envisioned to allow the NJTPA-NJIT team to identify promising sites among the large number of brownfield sites throughout the region. However, a number of bottom-line criteria did emerge. As discussed in the next section (Environmental Scan), the project team focused upon freight related sites that are: located within 35 miles of the port and ideally within 15 miles (“the Port District”); within 2 miles of a highway exit or on a freight rail line; larger than 3.3 acres; and removed from residential areas.

The initial project proposal had also envisioned developing similar criteria and market analysis for businesses involved in air cargo. However, it was found that these efforts could not be accomplished on an in-depth basis within the scope and funding of the current project. Analysis of the economics and siting considerations of air cargo businesses requires special-

ized expertise on the part of consultants and therefore deserves a separate analysis. Still, general consideration of air cargo economic development opportunities was included in the Market Analysis.

ENVIRONMENTAL SCAN

The objective of the Environmental Scan task was to identify brownfields sites in the region that show promise for freight related redevelopment. From the identified sites, several will be selected as cases studies for detailed investigation during Phase II. The Environmental Scan task was completed with the assistance of the consulting firm BEM, Inc.

As detailed in the Environmental Scan methodology included in Appendix A, the effort to identify appropriate sites included both a “top down” approach involving compiling existing data bases of potential sites from government and other sources and a “bottom up” approach involving reaching out to local governments, organizations and individuals who have knowledge about specific sites. The following summarizes activities during the Environmental Scan task and highlights some of the lessons learned regarding methodologies for regional assessments of brownfield sites.

DEFICIENT DATA

The initial step in the Environmental Scan was to draw upon existing data from state agencies and localities to assemble as much information as possible on brownfield sites and begin developing a Geographic Information System (GIS) based on these data. In general, the project team found that available data sources on brownfields were far from comprehensive and contained incomplete or faulty information. The largest data source, the New Jersey Department of Environmental Protection's Known Contaminated Sites List (KCSL), is not a brownfields list but rather a list of many kinds of sites and facilities that have been reported as contaminated under state disclosure rules. These range from simple truck-spill locations to sites with decades-long industrial activity. As a result, the list includes many properties that clearly are not brownfields including businesses still in operation, parks, hospitals and others. Considerable effort was required to identify and exclude such sites. However, the remaining sites on the list still lacked key data, such as lot size and ownership.

To supplement the state's KCSL, the team undertook an extensive outreach effort including sending over 500 letters to mayors and officials in the area; visiting state agencies (NJDEP, NJOSP) and

federal agencies (EPA); and consulting with EPA-funded brownfields pilots, counties, major cities (Newark, Jersey City, Elizabeth), and industry (PSE&G). However, the project team found that many communities have yet to inventory their sites and others were reluctant to share information and so did not respond to mailings and follow-up contacts. As a result of these difficulties, the data base of 7,000 potential sites compiled by the project team was a less than accurate inventory of regional brownfield sites. The difficulties point up the need for continuing efforts at the state and federal levels to support and coordinate efforts by local governments on brownfield issues.

Even so, the project team worked with its consultant to use the GIS to identify the most promising sites for freight related use. This involved applying various



“screens” based on criteria identified in the Market Analysis. However, as discussed elsewhere in this report, the Market Analysis did not provide the kind of detailed and specific criteria orig-

inally envisioned for determining promising sites. The general parameters that did emerge – good highway/rail access, location

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Attracting one company to a blighted industrial area could serve as an anchor for encouraging further redevelopment. Motivating such "pioneers" may require additional financial incentives.

within 15 miles of the port, etc. – were useful for narrowing the search for promising sites, but they still left a large number of sites (1,150) in the region to be considered.

FIELD VERIFICATION

The project team then organized an extensive field validation effort by team members and graduate students. Equipped with a digital camera, GPS locational device and notebook, the students attempted to visit all 1,150 sites. This was a very productive activity. In the field, the students were able to determine that the vast majority of sites in the data base showed some indication of still being in use. Often this was “low level” use involving parking for truck trailers, or storage of freight containers. The students were able to gather information on lot size, condition of buildings, exact location and other attributes. They also identified 114 potential additional sites that had not been on any lists used to compile the data

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base. Despite some complications in using the GPS device and judging activity at sites (as discussed in

Many communities have yet to inventory their sites, pointing up the need for improved state and federal support for local efforts to address brownfield issues

Appendix A) the field inspections thus accomplished an additional screening of sites (down to 75) and gathered valuable baseline information about the sites.

Significant additional work was required to gain other crucial information such as identifying site owners. In many cases, ownership could be determined by inspecting tax records in municipal offices but the lack of computerized tax record keeping by some municipalities complicated this task. In addition, the ownership information was sometimes unreliable since some brownfield sites were abandoned years ago by their listed owners or have been placed under “shell” corporations to shield owners from liabilities. In these cases, considerable additional investigation was needed to determine the ownership of the properties.

In the end, the data analysis and follow-up field validation — despite encountering a number of unexpected complications — yielded a general picture of the distribution of brownfields

throughout the region and offered numerous “leads” for identifying promising case study sites. The efforts also provided the basis for creating a GIS that is proving a powerful analysis tool to be used through Phase II. Among other functions, the GIS allows the team to view sites against aerial photos, see their relation to major truck routes and rail lines and inspect their proximity to other sites.

The last step in the Environmental Scan task, which was begun in the last months of Phase I and is continuing into Phase II, involves identifying at least six sites for intensive study. To do so, the project team must: (1) gain owner permission to access and study the site; (2) obtain local agreement that freight-related use is consistent with future development plans; and (3) assess any objections of neighborhood residents. Accomplishing this requires an extensive outreach effort which includes writing letters and conducting numerous meetings with site owners and municipal officials.

CULTIVATING LOCAL COOPERATION

The project team has found that, because of the strong regional economy and the creation of state and federal brownfields programs, many towns and property owners are now aware that their sites in industrial use areas have become potentially important assets. In

general, the project team has found town officials and property owners to be very receptive to the concept of freight-related reuse of their sites. However, the project team has also encountered some local officials who are adamant about pursuing “higher level” redevelopment — involving offices, retail or entertainment facilities — with freight related uses considered only as a last resort. The examples of the booming development along the Hudson River Waterfront and in the Meadowlands and the creation of the Jersey Gardens Mall in Elizabeth no doubt have spurred



such attitudes. The challenge facing the project team is to demonstrate that freight-related reuse can also be “high level” — particularly in the form of the clean, modern value-added warehouse facilities identified in the Market Analysis — and can offer a very promising future based on the expected dramatic growth in port trade.

Ultimately, the real estate analysis and marketing materials to be developed as part of the case studies in Phase II will provide the tools to effectively make this case

to towns and site owners around the region. In the meantime, the project team has created a variety of materials including newsletters, brochures and slide shows to highlight the project.

Fortunately, the project team has gained many allies among town officials, property owners and other stakeholders who have enthusiastically embraced the goals of the project. These allies are lending assistance to the project team in gathering information and seeking out case study sites. The project team fully expects to finalize the selection of its case study sites in the near future.

In part the project team's success in cultivating cooperation from town officials and property owners can be attributed to project team members' personal attendance at outreach meetings. Their university affiliation lends credibility and independence to the information presented. It is doubtful that graduate students or consultants would receive the same cooperation from town officials. Indeed, the project team has seen that some towns are very wary about sharing information on their sites with anyone, even state and county officials, for fear of losing or compromising their control over redevelopment plans. Overcoming this reluctance has required a considerable commit-

ment of time and resources by the project team, including attending multiple meetings and arranging follow-ups with staff at various levels of town government.

In sum, the Environmental Scan task was more complicated and required greater commitments of time and resources than originally envisioned. A key lesson learned was that while a data-intensive "top down" approach provides a valuable starting point for regional brownfields assessments, the most useful and reliable information is likely to be obtained "on the ground" through field inspections, record searches and meetings with municipal officials, property owners and other stakeholders. This approach will be continued throughout Phase II of the project.

COMMUNITY OUTREACH

The Community Outreach component of the NJTPA-NJIT Brownfields project was intended to fulfill a number of related objectives, including:

- educating key stakeholders and the public on the issues being addressed by the project, in particular the need to reuse brownfield sites to accommodate the expected growth in freight volumes;
- gathering input from knowledgeable officials and individuals

on project activities and strategies;

- insuring that the project is coordinated with other brownfields and freight planning activities; and
- gathering information on specific brownfield sites that may have freight development prospects

The project team pursued these objectives with the assistance of the consulting firm McLaren/Hart, Inc. During Phase I, outreach activities focused on agencies, officials and organizations already involved in brownfields/freight issues as well as others — particularly in the business community and in local government — who have an interest in learning more about these issues. During Phase II, as part of the case study effort, the project team will pursue greater outreach to community groups and the general public who may have an interest in specific sites.

KEY ACTIVITIES

Key outreach activities undertaken during the course of Phase I are listed in the Appendix B. Highlights include:

- Meetings of a Steering Committee composed of representatives of key state agencies involved with brownfields/freight issues
- Meetings of an Advisory Com-

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mittee composed of community and industry representatives.

- Presentations to county and local groups, including EPA pilot projects, planning boards and governing bodies;

Outreach conducted during Phase I achieved a broad network of groups and individuals whose expertise can be drawn upon in continuing project activities

- Presentations to private sector groups such as meetings sponsored by Summit Bank and the Regional Business Partnership
- Participation at the EPA Brownfield Symposium and the TransAction Conference in Atlantic City including presentations and sponsoring display booths.
- Preparing and widely distributing a newsletter on the project and maintaining a project website
- Meetings with key Congressional officials
- Sponsorship of a workshop attended by 150 individuals at which the Market Analysis findings were presented.

In addition, as described in the Environmental Scan section of this report, there were numerous contacts made with local governments, land owners, developers and others in gathering an inventory of specific sites.

OUTREACH ASSESSMENT

The Outreach activities revealed a growing level of activity and interest in brownfields reclamation throughout the state and region. As noted in the Environmental Scan section, a growing number of local and county governments are undertaking initiatives to promote brownfields development. This includes applying for EPA Pilot grants and special efforts carried out by Planning Boards and Economic Development Corporations. The outreach conducted by the Project Team during Phase I helped to further and inspire these initiatives, including getting local officials to consider freight related brownfields redevelopment.

Businesspersons and private sector organizations, many of whom participated in the project Advisory Committee meetings, also were found to have a strong interest in brownfields issues and the opportunities they present. Private sector representatives were particularly interested in the findings of the Market Analysis concerning the increases in freight moving through the port and the business activity it will generate.

The high level of interest in brownfields redevelopment suggests the need for improved coordination and outreach by federal, state and regional agencies. The Project Steering Committee meetings, with

participation by key state and federal representatives, helped the project team insure that its efforts were coordinated with other state-level initiatives. In particular, the State Brownfields Redevelopment Task Force is providing leadership and a policy framework for initiatives by a number of state agencies. Such coordination is vitally important. However, the project team found that many local governments, property owners and other interested parties remain uninformed about state and federal initiatives and programs. Increased proactive “missionary” work on the part of federal and state agencies — such as that conducted by the project team during Phase I — would help sustain and broaden the local efforts for reclaiming brownfield sites.

A particular concern of the project team, in this regard, was the general lack of knowledge encountered among local officials and business interests about infrastructure plans in and around the port district, notably involving the Portway project. The need for greater outreach on Portway and other initiatives is discussed in the “Conclusions” section of this report.

Overall, the outreach conducted during Phase I achieved a broad network of groups and individuals who have been informed about the project and whose expertise and participation can be drawn upon in continuing project activities. During Phase II, outreach

activities will include greater contact with and outreach to community groups and residents near to brownfield sites. The Steering and Advisory Committees and other outreach efforts begun in Phase I will be continued.'

EVALUATION

Muller-Bohlin Associates, Inc. (MBA) was contracted to provide an independent evaluation of the project. The evaluation was designed to provide feedback to the investigators during the planning process as well as an overall evaluation of the project. During Phase I, MBA attended a number



of project meetings, including several meetings of the project team, of the advisory committee as well as outreach events. They offered valuable assessments of strategies being discussed which helped the project team make needed mid-course corrections.

MBA developed a questionnaire that was distributed to participants in the various outreach activities to identify the degree to which each meeting met the expectations of participants and

the goals of the project team. While each questionnaire was kept confidential and respondent names were not requested, MBA also sought out those who wished to obtain follow-up calls or information on the project. In general terms, the response rates were reasonable and the outreach activities met both the goals and expectations.

MBA also reviewed the draft Market Analysis reports and submitted a commentary on this effort (Appendix C). This commentary included a very useful analysis of possible action steps to be considered by the public sector in responding to issues raised in the Market Analysis (a number of these action steps are referenced in the Conclusion section of this report).

MBA participated in a number of meetings and presentations on the methodology developed to complete the sites identification and analysis. They reviewed, in general terms, the GIS approaches and participated in discussions about key issues such as the need to move from sites to clusters of opportunity. They will complete their review of the Site Analysis through a review of the final report.

Finally, they will review the entire report and produce an overall evaluation in terms of the scope of services as a prelude to the

Phase II work. This summative report will include an evaluation of the project based on performance measures included in the initial project proposal.

CONCLUSIONS

Phase I of the NJTPA-NJIT Brownfields project achieved nearly all of its initial objectives. A comprehensive Market Analysis, focusing on analogous regions (the San Pedro Bay area) and on existing and future conditions within the NJTPA region was conducted. An extensive database and GIS system inventorying brownfield sites in the region was compiled. A pool of promising sites from which case study sites can be chosen was extracted. Initial information about these sites was gathered. Wide ranging outreach, including meetings of an advisory committee, was carried out to gain input on the project and also educate key public and private officials on freight and brownfields issues. Though a number of complications were encountered during the course of these activities, they served as the basis for creating a more realistic and useful methodology for encouraging freight-related brownfields redevelopment — a key overall project objective.

Formal conclusions and recommendations must await the outcome of Phase II. However, some implications can be drawn from

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the project thus far, particularly concerning public policies related to brownfields and goods movement. The Phase I Market Analysis has confirmed a continuing trend for the development of warehousing and other freight related facilities on greenfield sites throughout the region. Unless this trend is countered, the negative consequences – in terms of air quality, open space and quality of life – could be profound given the dramatic increases in freight projected over the next several years.

COMPREHENSIVE PLAN

According to the Commentary on the Market Analysis prepared by Richard Roberts and Muller-Bohlin Associates (Appendix C), a “realignment of government policies, investments and regulations” is

A comprehensive brownfields plan for the port district would help fulfill the goals of the State Development and Redevelopment Plan for averting sprawl and revitalizing urban areas

needed to avert this threat and facilitate the optimum use of brownfield sites for freight distribution. Such a realignment could follow the example of European countries which have implemented comprehensive plans for their major ports that link transportation investment, economic development and environmental improve-

ment. Developing a similar comprehensive plan for the northern New Jersey port district would be



very much in keeping with New Jersey’s State Development and Redevelopment Plan, with its emphasis on averting sprawl, revitalizing urban areas and linking transportation and land use.

In his Market Analysis report, Dr. Ricklefs has presented a compelling vision for such a comprehensive plan. With appropriate policies and investments, he said, the region has the opportunity to develop an economic “string of pearls” centered on the Portway alignment. That is, Portway would form the transportation strand along which value-added and other freight related facilities (the “pearls”) could be located. Portway would confer important transportation advantages to these facilities including the ability to use the freight-dedicated segments of the roadway to truck goods quickly to and from the port and rail terminals, to receive overweight containers directly from the port and to take advantage of new technologies for tracking and routing containers. The area’s location at

the center of the Tri-State consumer market would make distribution of finished goods to consumers and stores much more efficient, lowering VMT and reducing congestion on other regional roadways. The Environmental Scan task identified a wide range of brownfield sites near Portway, of various sizes and requiring various levels of clean up, that could be redeveloped for value-added and other freight facilities.

PLANNED UNIT DEVELOPMENTS

Based on the survey of the San Pedro Bay area in Southern California, Dr. Ricklefs found that, ideally, value-added and other freight facilities along Portway should be located in Planned Unit Developments (PUDs)* of up to 150 acres. Within such PUDs, there may be several different companies or different facilities (under a single ownership). This would allow for efficient management, shared shipments and deliveries and synergistic relationships among companies engaged in warehousing, light manufacturing, value-added assembly and other operations. In the San Pedro Bay area, PUDs provide clean and modern industrial space for lease or purchase by value-added com-

* A PUD is a zoning category that typically allows a single developer to divide a large lot into clusters of buildings, often serving a variety of purposes. PUDs often have internal roadway systems and uniform designs

panies, allowing the value-added sector to flourish, creating many thousand of jobs.

Currently, in northern New Jersey, many municipalities use the PUD zoning designation for residential, retail and commercial land uses. However, the Muller-Bohlin report suggests that establishing PUDs for intermodal/distribution facilities in northern New Jersey could be “practical and effective,” especially if they were tied to the Portway project and other government initiatives such as a Transportation Development District. The PUD designation, the report notes, could “provide added regulatory and decision making certainty for private sector investors,” including quicker agency reviews and granting of permits, that would facilitate the reuse of brownfields.

Thus, the core vision for a comprehensive plan for brownfields redevelopment could focus on establishing several freight distribution PUDs – along with other independent facilities on smaller parcels – organized in a “string of pearls” along the Portway project. The plan would also have to address other crucial elements including worker access and training, labor agreements and environmental quality. The latter is particularly important as brownfields reuse by freight companies could bring increased truck traffic to nearby urban

areas. Transportation facilities must be planned to minimize these impacts, with consideration given to “clean port” strategies, such as the use of alternative fuel vehicles for the transport of containers among terminals. These elements of a comprehensive brownfields plan for the port district -- along with recommendations for specific transportation projects that can be advanced through the NJTPA planning process – will be explored further in Phase II of the NJTPA-NJIT project.

IITCC

It is clear, however, that creating and implementing a comprehensive brownfields plan for the port could be a monumental effort, requiring a high degree of cooperation among public agencies and substantial commitments of resources. Fortunately, it appears that the institutional framework for accomplishing the necessary mobilization of expertise and resources is already being put in place. On the bi-state metropolitan level, the Comprehensive Port Improvement Plan, organized by the federal EPA and the US Army Corps of Engineers, is bringing together interests in both New York and New Jersey to consider needed infrastructure improvements for the future of the PONYNJ, including improvements that will support brownfields redevelopment. Perhaps more importantly, within

the northern New Jersey region, the International Intermodal Transportation Corridor and Center (IITCC), established through the efforts of Congressman Robert Menendez, has been designated as a “high priority” corridor by the US Department of Transportation,

The region has an opportunity to develop an economic “string of pearls” consisting of value-added and other facilities arrayed along the Portway freight roadway.

making it eligible for special funding. Initial seed money for planning of the corridor, which encompasses the Portway project, has been obtained and a resource center for the corridor has been established at NJIT. Numerous public and private stakeholders have participated in IITCC forums and planning activities. As it develops, IITCC could become the umbrella under which public agencies and private sector interests work to create an efficient freight movement system, built on a comprehensive land use plan.

Yet IITCC has more than just regional or metropolitan importance. The PONYNJ on which the corridor is centered currently serves a 17-state region containing 38 percent of the US population and accounting for 41 percent of the US gross domestic

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product. The growth of freight traffic through the port, including new trade directly from Asia, will increasingly make it the East Coast container hub, mirroring the role served by the ports of Long Beach/Los Angeles on the West Coast. Congress has already committed \$135 million towards the \$1.8 billion cost of an Alameda Corridor rail and highway project (passing through the San Pedro Bay area) intended to improve the efficient handling and distribution of goods arriving at the two West Coast ports. IITCC is envisioned as the first step towards designing similar improvements for the transportation and economic corridors

from ships to truck or rail and the application of Intelligent Transportation Systems (ITS), relatively less attention is being paid to the need for efficiency in “land-side” goods distribution. Without investment in improved rail freight, Portway, IITCC and brownfields redevelopment, among the elements, the region may not be able to sustain a role as the East Coast “hub port.” At some point, the difficulties faced by shippers moving goods to and from the port and around the region, plus mounting public concern with truck traffic and congestion, could prompt a shift of trade -- and economic benefits -- to other East Coast ports.

region to effectively channel new economic development into brownfields and urban areas surrounding the port.

The planning and design of Portway should also be given a higher public profile, including greater outreach conducted by state agencies to businesses and communities in surrounding areas. The NJTPA-NJIT team found a surprising number of businesses, property owners and local officials in these areas who are unaware of the proposed alignment, functions and potential benefits of Portway. A higher profile for the project should help foster improved economic development interest in nearby properties in anticipation of the project’s construction. In addition, if the state is to realize the comprehensive “string of pearls” vision presented by Dr. Ricklefs, state agencies (and the Port Authority) should consider directly acquiring, land-banking and possibly cleaning up contaminated properties in the district. These properties could be used for future public-private partnerships to develop PUDs or other freight-related facilities.**

Many of the brownfield proper-

** The Muller-Bohlin report describes successful public-private partnerships being used to create intermodal distribution centers in Germany that may serve as a model for the northern New Jersey port district. (Appendix C, p. 6). These ideas are being independently studied by counties in the NJTPA region.

The North Jersey port serves a 17-state region containing 38 percent of the US population and accounting for 41 percent of the US gross domestic product.

feeding into the PONYNJ. To leverage increased federal funding for IITCC, the State of New Jersey should be prepared to make substantial funding commitments towards planning, infrastructure rehabilitation and implementation of comprehensive land use plans for the port district.

Failure to make these investments could threaten the economic future of the port. While the Port Authority is working to increase the “throughput” of the port itself, by speeding the transfer of goods

PORTWAY IMPLEMENTATION

As a result, the state should consider expediting the implementation of the Portway project, which is envisioned as the backbone of the IITCC, based on project’s importance to freight-related brownfields redevelopment. Portway is being pursued as a series of interrelated projects to be undertaken over many years (the first of which, the replacement of the Doremus Avenue bridge, is now under construction). Accelerating the project schedule to stay ahead of (or at least in step with) channel dredging and expansion of port capacity will be a major challenge given the project’s multiple elements. However, doing so is necessary to allow the

ties likely to be available for this purpose, the Environmental Scan found, are now in “low level” use, often involving truck trailer parking or the storage of freight containers. While such activities are a necessary component of port trade and many even be appropriate interim uses of properties, it should be recognized that they do not represent an efficient long term use of land resources in the port district. The storage of freight containers in particular has become problematic. Because of the volume of imports is far greater than exports, freight companies and terminals increasingly are saddled with an excess of empty freight containers. Finding it uneconomical to ship empty containers back to their point of origin, the companies are choosing to store large numbers of containers at the port. “Container mountains” have arisen in a number of locations. In addition to tying up land that might be put into more productive use, the container storage further degrades potential redevelopment areas and provokes community opposition. The State of New Jersey (possibly as part of IITCC efforts) should work with the Port Authority, freight companies and municipalities to develop policies or regulations that would limit container storage, thus freeing up land near the Portway alignment for redevelopment that will benefit communities and improve

the efficiency of regional goods distribution.



STATE BROWNFIELD EFFORTS

Gaining the participation of the private sector in a comprehensive brownfields plan in the port district will require renewed efforts to address financial and other barriers. Current federal and state brownfield programs have resulted in a growing number of successful brownfield reclamation projects by providing clean-up assistance, tax breaks and limitations on liabilities. The availability of private sector environmental risk insurance has also helped. Yet numerous companies continue to “mothball” their brownfield properties for fear of incurring large clean up costs. Other properties, abandoned by their owners, remain in “legal limbo.” Given the need for hundreds of acres to accommodate expanding freight activities near to the port and airport, it may be appropriate for the state environmental agencies to target the port district for special brownfield efforts including expanding technical and financial assistance to property owners specifically

for the clean up of sites for freight related reuse.

As the state considers such steps to encourage brownfields redevelopment for freight use, it should also seek to coordinate efforts at all levels of government to stem the tide of unfettered warehouse development in greenfield areas. In this regard, proposals for the creation of Foreign Trade Zones in these areas must be carefully scrutinized, including assessing the transportation impacts of this designation on regional highways and on the viability of freight rail serving the region.

PORT AUTHORITY PLANS

Similar scrutiny should be given to the Port Authority’s proposal for establishing the Port Inland Distribution Network. The Port Authority conceives of this network as a number of private inland container terminals located 100 miles or more from the port, such as in Albany, NY and Harrisburg, PA. Containers would be shipped by rail or barge to these terminals which would serve as inland extensions of the port. The Port Authority hopes this would limit the need for expanded acreage at the port itself and reduce truck traffic for the shipment of goods to outlying markets.

Yet, creating such a network could amount to exporting the economic development benefits

of trade growth to surrounding states, while bypassing the numerous brownfield sites near the port and along freight rail corridors in the NJTPA region. In addition, unless careful mechanisms are incorporated to segregate goods by destination, the inland network proposal raises the possibility that some share of containerized goods received at inland terminals will have to be loaded on trucks and shipped back into the core of the metro region over congested highways. While the inland terminals no doubt can serve some supplementary role for port operations, their development should not weaken efforts to make efficient use of the land, labor and other

resources close at hand to the port. As a result, the Port Authority should consider acquiring key brownfields sites in anticipation of its future port expansion needs.

These and other public policy implications drawn from Phase I of the NJTPA-NJIT project will be expanded and refined during Phase II as part of the development of a Transportation and Community Action Plan. Phase II will also yield detailed insights into strategies for assessing contamination, marketing of sites for freight use and determining needed transportation improvements as part of case studies of selected sites. The lessons learned from the successful completion of the project's first

phase have helped the NJTPA to better understand the links between transportation infrastructure development and land use impacts. The NJTPA has updated its project selection criteria to give higher scores to proposed transportation projects that facilitate the redevelopment of brownfields. In addition, the project has allowed the NJTPA to better assess the opportunities and impacts created by the huge volume of freight moving through the region; and has helped to create a more focused freight movement agenda in its collaborative work with other partner agencies.

APPENDIX A

Environmental Scan Methodology Year One Report

The overall objective of the Environmental scan task was to identify promising brownfields sites in the northern New Jersey area that had potential for future Port related use, and to choose from those sites a subset for intensive year two study. Meeting this objective required three major activities including 1) identification of the brownfield sites in the area, 2) building a GIS database of the sites, and 3) development and application of a screening criteria for choosing candidate sites for year two study. These activities were carried out by the project team with the assistance of the consulting firm BEM, Inc.

I. IDENTIFICATION OF BROWNFIELD SITES

No comprehensive database or GIS coverage of brownfield sites in northern New Jersey was known to exist. In order to achieve the objective of this project it was realized that both a database and a GIS coverage would be needed for the 13 county NJTPA area. In order to accomplish this, it first became necessary to determine as much information as possible about existing brownfields sites within the area. A GIS coverage of known contaminated sites from the NJDEP's Known Contaminated Sites List (1997) was known to exist and it was decided to use it as the starting point for assembling a coverage of potential brownfield sites. It was well understood by the team that a "known contaminated site" was not necessarily a brownfield site and that this list would be used

only as a starting point for site selection screening. A relational database was also developed to store and manage the attributes of the sites being depicted in the GIS coverage. Storing attribute data in a relational database (Microsoft Access97) provided greater flexibility in data management, reporting and query development than could be provided by the GIS software alone (ESRI ArcView 3.2).

An intensive investigation was then made to collect information on additional brownfields sites and to add these sites to the GIS coverage and database as they were being identified. This required making key contacts and reaching out to the local communities in a number of different ways including letters, e-mails and outreach visitations in order to obtain this information. This involved sending over 500 letters (sample letter attached) to mayors and officials in the area, visits to state agencies (NJDEP, NJOSP), visits to federal agencies (EPA), contacts with EPA funded brownfields pilots, counties, major cities (Newark, Jersey City, Elizabeth), and industry (PSE&G).

Through this process, a number of databases of sites were identified and merged in with Known Contaminated Sites inventory. These included:

- NJIT/NJTPA - database whose data sources were from, NJ Hazardous Discharge Site Remediation Fund Grants Projects List (7/8/98), PSE&G, City of Jersey City, City of Linden, Township of Randolph, Elizabeth Brownfields Pilot Study, and City of Newark Brownfields Study.

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- Middlesex County “Non-BUST” and “No Further Action Sites” (Middlesex County Brownfields Study) and Hudson County Pilot inventory
- Newark Brownfields Opportunities Sites List
- BEM’s database sites
- Other sites as discovered

Surprises or barriers encountered/Measures taken to deal with surprises or barriers

Municipalities had a different understanding of what a brownfields site was. For many this was an educational opportunity to hear about brownfields, as well as the purpose of this important brownfields related project.

Obtaining access to local officials was time consuming and took a lot of effort. Many Mayors were part time and did not respond or route our requests promptly to town engineers or town planners. This difficulty was addressed by making numerous follow-up phone calls and working through the many contacts already established by the NJIT Center for Environmental Engineering and Science.

II. BUILDING A GIS DATABASE OF THE SITES

A total of approximately 7,500 sites were compiled. The baseline data from NJDEP Known Contaminated Sites List already existed as a GIS shapefile so the remaining sites were merged with the NJDEP data by one of the following methods:

- Existing site coordinates
- Address geocoding
- Manual location using tax block/lot maps

Once the sites data was created, data for site selection needed to be gathered and/or created.

Geographic data such as infrastructure (roads, highway, rails), land use, unemployment, portway, urban enterprise zones, warehouse data, geonames (name places found on a USGS topographic map), NJTPA’s area of interest, were collected as GIS coverages or were created. Attributes were added to the sites database by GIS “Intersection” of the sites theme to the other themes, and various buffers were created around features of interest and through nearest neighbor analysis. Specific examples are cited below.

Major Highways

Major highways such as Interstates and US highways were extracted from road network coverages by county for all 13 counties. The source data were “Keystone” centerline road coverages that are enhancements of the US Census Bureau’s TIGER line coverages. Once extracted, two new coverages were completed for each and were then buffered. One buffer coverage was set to 5000 feet at 1,000 foot intervals. A second was created to a distance of three miles at 1 mile intervals.

The sites coverage was intersected with both buffer themes (for each county) and the resulting “distance to major highways” information was added to the sites database.

Interstate Exits

Site distance to Interstate exits was deemed to be a valuable screening criterion. No coverage of interstate exits was known to exist so one was created for the study area. Once this coverage was complete, a nearest neighbor analysis using ArcView GIS was performed to locate both the closest exit to each site and the straight-line distance to it. This data was then added to the sites database.

Rail Infrastructure

proximity to rail infrastructure was determined using precisely the same methodology as presented in the Major Highways section above. The rail coverage was also obtained from the Keystone data.

Land Use

A potential screening criterion involved identifying sites that are located within industrial areas and outside of residential land use areas. Industrial and residential land use areas were extracted from NJDEP's Land Use/Land Cover coverage. The sites coverage was then intersected with these polygons and data regarding the land use of the sites was added to the database. It was initially proposed to buffer the land use polygons to determine distance to these land use areas. However, the large number, geometric complexity and proximity of the industrial and residential polygons within the study precluded the use of this technique.

Proximity to Sensitive Geographic Locations

Initial thinking included identifying sites not located within a certain proximity of sensitive geographic locations such as churches, hospitals and schools. These geographic locations were identified from the Geographic Names coverage available from the US Geological Survey. The following types of locations were extracted:

- Churches
- Hospitals
- Schools
- Parks

Each of these was buffered as described in the Major Highways section above. The sites were then intersected with these buffers and the data were recorded in the sites database.

Environmentally Sensitive Protected Areas

A GIS coverage of Environmentally Sensitive Protected Areas was obtained from the NJ Office of

State Planning. The sites coverage was intersected with this to determine if any of the sites were located within one of these areas. This information was then added to the sites database.

Unemployment Percentages

Data were obtained from the NJ Department of Labor regarding 1998 unemployment percentages within the study area. These were the most recent data that could be obtained at the time. The data were provided in tables by municipality. The data were added to a GIS coverage of municipalities supplied by NJDEP. The sites were then intersected with the new municipalities coverage and the data were recorded in the sites database.

Total Warehouse Area

A GIS coverage of total warehouse area by ZIP Code was created as part the Market Analysis phase of the project. The sites coverage was intersected with this coverage and the resulting data were added to the sites database.

Proximity to the Portway Alignment

The Portway project is a transportation improvement project located in the area of Ports Newark and Elizabeth NJ. Simply stated, this is a dedicated truck roadway improvement project intended to ease the transfer of shipping containers from their unloading docks at Ports Newark and Elizabeth to the major highway and rail infrastructure located nearby. In light of the "added-value warehousing" concept of this study, this area was deemed of considerable interest. The proposed roadways of Portway were mapped in GIS and then buffered to a distance of one mile from the roadway centerline. The sites coverage was intersected with this coverage and the resulting data were added to the sites database.

Proximity to Newark International Airport

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Newark International Airport is a major passenger and freight airport serving the New York metropolitan area and is located with the NJTPA region. Its close proximity to Ports Newark and Elizabeth, major highway infrastructure and its freight capability made this airport an area of special interest. The approximate limits of this airport were mapped in GIS and then buffered as described in the Major Highways section above. The sites coverage was then intersected with the airport buffer coverages and the data were recorded in the sites database.

Location within Economic Redevelopment Zones

It was determined that sites located within special redevelopment zones might be more favorable than those not located within such zones. Data and mapping were collected from various sources for Urban Enterprise Zones and Urban Community Council Empowerment Neighborhoods. These areas were then mapped into GIS coverages. The sites coverage was then intersected with these coverages and the data added to the sites database.

Location within an NJTPA Defined Area of Interest

During the conduct of the study, NJTPA determined that the primary area of interest was defined as one mile beyond a perimeter defined by key highways within northeastern New Jersey. This perimeter was suggested by the market analysis task, being conducted in parallel with the environmental task. A new coverage of the roadway perimeter was created and then buffered to a distance of one mile beyond the roadways. The sites were intersected with this buffer coverage and the resulting data were recorded in the sites database.

To determine distances from the potential brownfield sites to these geographic features, buffers around each feature were created. These buffers ranged from 1,000-5000 ft and 1-3 miles.

III. Development and Application of a Screening Criteria for Choosing Candidate Sites

Initial Screening

Once the potential sites were compiled, site screening and criteria needed to be established. An initial screening criteria was developed and involved removing sites based upon certain incompatible activities or likelihood that the sites were active. Any site whose name contained any of the following words was flagged and removed from consideration:

Gas/Service Station	Shopping Mall
Airport	Park
School/University	Medical/Health Center
Hospital	Apartment
Water Company	Building
Public Works	Bank
Cemetery	

A "Reject" field was added to the sites database to identify the reason for rejecting the site. A number was assigned to each reason, such as those in the table above, to make determining the reason for rejection at a later time easier.

This screening resulted in the elimination of approximately 1,500 sites from further consideration.

Second Screening

Unlike the initial screening, the second screening was one of inclusion. The project team identified a series of high-level characteristics that a site should have in order to remain under consideration. It should be noted that "area" (i.e. square feet) was a highly desired criterion to evaluate by. However, this data was most often absent from the various site data sources and was simply unavailable for most sites.

All remaining sites were screened for the following attributes:

- Located within an Industrial Land Use area and not within a Residential Land Use area
- Not previously rejected
- Not located within an Environmentally Sensitive Protected Area
- Located within the NJTPA defined area of interest
- Located within three miles of a major highway
- The site data source was from the Middlesex County brownfields study for sites located within Middlesex County
- Located within a roughly 35 mile radius of the Port defined by major highways including I-287, I-80 and others.

Approximately 1,150 sites were identified that met these criteria.

Field Validation

This study is one of identifying brownfields sites with a high potential for freight related redevelopment. Unfortunately, most of the sites in the sites database came from the NJDEP Known Contaminated Sites List (KCSL) which was not a brownfields site list. Thus, although 1,150 sites had been identified in the second screening, it was acknowledged that many of these sites would not qualify as "brownfields". The only way to verify this was through field visits.

Two teams of graduate students were assembled and charged with visiting each of the 1,150 sites. The students at first went out together, following a standard operating procedures, to conduct a few site surveys in order to get a "feel" for the process. Each team was equipped with a car, digital camera, GPS and notebook. Following this, they were assigned their sites. The actual survey of sites included:

-obtaining a street map of the town from city/town hall

-setting up their notebooks for each town (each site was considered a separate entry)

-determining whether the site was active or abandoned. This was often a judgment call because many brownfield sites are not abandoned, only underutilized with very small on-going operations, hardly visible. A site was considered to be active where business was in operation, activity evident. A site was considered to be inactive when there was no apparent signs of people, decrepit buildings, an empty lot, broken windows or overgrown grass.

If a site was deemed abandoned, a digital picture, GPS reading, and detailed description of the site were recorded. It should be noted that the Department of Defense's GPS "Selective Availability" had been deactivated. Thus hand units gained considerable positional accuracy. The description included: any structures and their condition, grass/trees, estimated acreage, distinguished features, and any realtor information. Afterwards, the survey teams obtained the exact address, block and lot, acreage, and owner information from the tax assessor's office. All information recorded in the notebook was later transferred to the database in a format approved by the project team and environmental scan consultant. Students also collected information on abandoned sites that were NOT part of the original list. These sites were in the general vicinity of the sites on the list.

Data was entered into database on a weekly to biweekly basis depending on the number sites completed. This data was electronically submitted to the consultant who then incorporated it into the "master list."

Surprises or Barriers encountered/ Measures taken to deal with surprises or barriers

It should be noted that there were some issues of

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inconsistent reporting methodologies and errors in transferring the collected data to the database. These issues were resolved as the project progressed by having the teams enter data in preformatted spreadsheets matching the database schema and reducing the number of data submissions.

Future researchers are advised to develop a simple data entry program for field teams to manage the one-to-many relationships that are typically present within the database structure. (For example, many images associated with a single site.) Although the spreadsheets were formatted to accommodate these relationships (multiple sheets representing the database tables) the relational table concept and purpose was not initially well understood by the field teams and thus were not always completed properly.

Another data management issue arose from confusion over which records supplied in the spreadsheets represented updates and which did not. Future researchers are advised to have only updated records submitted to data management personnel with unchanged records eliminated from submissions. This is more of an issue if a data entry program is not used by the field teams.

A secondary benefit to the field verification was the identification of new potential sites. Student field teams would record data for any site that appeared to be abandoned and was located in proximity to sites that had passed the second screening. Because of their proximity, these sites had essentially already passed the second screening criteria. One 114 additional sites were added to the database and GIS coverage as a result of the field verification.

Third Screening

The third screening is actually a result of the field verification. Of the 1,150 sites resulting from the second screening, 1,000 were found to be active sites and nearly 60 could not be found due to missing or incomplete addresses. These sites were

assigned new reject codes and removed from consideration. This left 74 sites still under consideration.

The team is currently reducing this list to 6 sites for intensive year 2 study. This involves looking for a combination of sites that includes both municipal and privately held, and of large, medium and smaller sites as suggested by the market analysis. The process involves (1) gaining owner permission to access and study the site, (2) obtaining local agreement that Port related use is not inconsistent with future development plans and (3) ruling out any objections of neighborhood residents. Accomplishing this is requiring an extensive outreach effort which includes writing letters and conducting numerous meetings with site owners and their community.

It should be noted that a number of sites, additional to the screened 76, are being added to the list for consideration. This has happened for two reasons. First, the students identified an additional 114 sites along their line of travel while conducting their field investigations of the listed sites. These have been targeted for further investigation and consideration. Second, the process of making local contacts to discuss candidate sites has yielded a number of suggestions for other sites to be added to our list.

Surprise or barriers encountered/ Measures taken to deal with surprises or barriers

Using existing information on record about sites was found to be quite difficult. In some cases, sites did not exist or could not be located. In other cases street names were incorrect (i.e. Dekalb Drive was listed instead of Dekalb Road). Also, addresses were difficult to read on existing buildings. Some towns did not have a good street map to guide the students. Some of the street maps were recently updated and street names or locations were no longer valid. The students partially overcame these barriers

by talking to neighborhood people in order to obtain their recollection of sites. Also, they made assumptions and took many detailed notes which became helpful in resolving the locations and the site's lot and block later in the local tax assessor's office. In not all cases did these techniques work. Some of the sites had to be written off as "not found."

GPS was found as an invaluable tool for accurately positioning the sites on the GIS coverage. In some cases, however, the students were surprised to find that they had located sites in precarious locations (in major highways) or that sites in different towns had the same GIS readings. Some of these errors were attributed to technique problems the students had in the early days of the field investigation. Others are probably due to the limited accuracy of the GPS instruments used for the project. To address some of these errors, the students learned to improve their technique of taking GPS readings, especially by allowing more time for the GPS to reposition itself for each reading. Some of the sites were revisited and discrepancies were addressed by taking new readings.

Students were instructed to take digital photographs of sites to be stored in the database. This often became difficult because of the size of the site and other structures being in the way. Their technique improved as they learned to take a combination of still and "moving in a car" pictures.

Determining the activity level of the site became one of the most challenging tasks. Many of these were made as judgment calls because of the high degree of underutilization or mothballing of the sites, which is the nature of brownfields. The team provided the students carefully developed criteria to use in making calls on whether or not sites were inactive. Still, some sites were probably characterized as active when, in fact, they were inactive.

This conservative call was appropriate given the

objective of this project task to identify potential case studies for year two. It was not designed to achieve an exhaustive listing of brownfields sites in the NJTPA area. A less conservative approach may have identified many more sites but it would have risked including active sites in the pool from which case studies are chosen as well as possibly antagonizing property owners by having their properties wrongly stigmatized as inactive brownfields. The 74 sites ultimately identified through data base analysis and field inspection -- along with the additional 114 sites discovered by the students -- provided a more than adequate basis for selecting case studies. Indeed, as the project team has begun discussing these sites as potential case studies with property owners and community officials still more potential sites have emerged. The Environmental Scan thus has met its objective for identifying regional brownfields appropriate for freight related redevelopment that can be the focus of year two investigations.

APPENDIX B

Phase I Community Outreach Documentation

The following pages provide documentation of the Community Outreach task conducted as part of the NJTPA-NJIT Brownfields project. This includes:

- A list of outreach meetings and events
- A list of participants at Steering Committee meetings
- A list of participants at Advisory Committee meetings

Attached to this document are issues of the Foresight newsletter. Additional documentation can be found on the NJTPA-NJIT brownfields website (www.njtpa.org/brownfields)

Key Outreach Meetings and Events (Calendar Year 2000)

January 11 First Project Advisory Committee Meeting held. Advisory Committee is composed of broader community and industry representatives. Distributed first Project Newsletter.

February 6 Project liaison to Hudson County meeting regarding that county's brownfield studies

February 9. Presented project overview to Senator Frank Lautenberg staff in Newark, NJ.

February 16. Presented project overview to FHWA Trenton Office staff.

February 24. Met with Passaic County brownfield

group in Passaic. Make presentation of project elements.

February 29. Met Somerset County Brownfield working group. Project staff serve on county Brownfield Study Advisory Committee.

March 3. Project Steering Committee meeting in Trenton, Office of Maritime Resources.

March 21. Attended US HUD brownfield working group meeting held at HUD offices in Newark, NJ

April 4. NJTPA Planning & Economic Development Committee meeting. Intermediate findings of the Market Analysis was provided by John Ricklefs of Moffatt and Nichol Engineers.

April 17. NJTPA-NJIT Team presentation to Advisory Committee on Phase I progress.

April 17. Meeting with Congressman Menendez at Jersey City office

April 27-28. TransAction Conference in Atlantic City. Participated on numerous panels. Sponsored a display booth for distribution of project materials

May 18. Presented Brownfields Phase I work to date and TCSP future plans to the Ironbound Association, a strong and influential business association from Newark.

May 23. Presented Brownfields concept and works in progress to the Kearny, NJ City Council.

May 31. Made Brownfield presentation at the

<p>ige Hudson County Regional Planning Committee.</p> <p>June 2. Steering Committee reviewed McClaren Hart (Outreach) methodology concepts.</p> <p>June 15. Presented at Somerset County Brownfield Meeting.</p> <p>June 29. In conjunction with Market Analysis, an in- house constructed comprehensive 27 point Brownfield Survey was sent to some 221 regional warehouses, freight forwarders, shippers, and carriers. Questions ranged from square footage and multi-use requirements, to cost, transportation, and employee factors.</p> <p>June 29. NYMTC Freight Group meeting, Manhattan</p> <p>July 18. Attended NJDOT's Truck Trip Model evaluation meeting. The Brownfield's team will be sharing GIS and other pertinent information to this study.</p> <p>July 24. Portway opening ceremonies.</p> <p>July 28. Meeting held with the New Jersey Alliance for Action. Discussed Brownfield efforts/accomplishments to date.</p> <p>July 31. Somerset County Brownfield sites visit with County transportation officials. Presented project overview with County staff.</p> <p>August 11. Brownfield presentation made at Army Corp of Engineers meeting (USACE) in New Brunswick.</p> <p>September 1. Attended the Summit Bank sponsored Marine Transportation symposium.</p> <p>September 20. Presentation of Brownfield Program to the South Kearney (NJ) Professional Association.</p> <p>October 2. NJTPA-NJIT hosted a BER Workshop</p>	<p>attended by upwards of over 150 representatives of private industry, government, advocacy, and citizens groups.</p> <p>October 3. Attended the Maersk-Sealand ceremonies announcing the commencement of Port Elizabeth expansion from 266 to 350 acres.</p> <p>October 4. Presented at a New Jersey Alliance for Action meeting, recapping project overview and progress to date on BER.</p> <p>October 10. Presented at the Hudson County Outreach program. Project Overview.</p> <p>October 11/12. Presented as well as member on various panels at the annual EPA Brownfield Symposium in Atlantic City, NJ. Organized and manned NJTPA-NJIT Information Booth.</p> <p>October 17. Attended Cross Harbor initiative workshop sponsored by the PANYNJ.</p> <p>October 18. Attended NYMTC Freight Modeling meeting.</p> <p>October 25. Participated in the Comprehensive Port Improvement Program (CPIP) called by NYEDU and attended by the USACE, PANYNJ, NYMTC, NJDOT, and NYDOT.</p> <p>November 1. Presented Brownfield overview to the NJ Regional Business Partnership in Newark.</p> <p>November 14. Presented at a special plenary meeting of the Association of State Highway Transportation Officials (ASHTO), Freight Section, at the Liberty Science Center.</p> <p>December 5. Presented at the International Intermodal Transportation Center (IITC) launch Ceremonies.</p> <p>December 18. Attended NCTIP Symposium at NJIT.</p>
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Agencies Represented on Steering Committee

NJ Department of Transportation
NJ Department of Environmental Protection
Office of State Planning
Port Authority of New York & New Jersey
NJ Brownfields Redevelopment Task Force
US Environmental Protection Agency
NJ Department of Labor, State Employment &
Training Commission
NJ Commerce and Economic Development
Commission

Advisory Committee Participants (1st meeting)

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Raritan River Keeper
NJ State Employment Training Commission
CSX Transportation
Bergen County Economic Development
Corporation
Port Jersey Railroad Company
Hall's Fast Motor Freight Inc.
NJ Community Development Corporation
HMDC
BROCOR Development
NJ Association of Realtors
U.S. EPA Region 2
Port Authority of NY&NJ
Regional Business Partnership
NJ Commerce and Economic Development
Commission
Port Authority of NY & NJ
Administrative Building
Union County
URS
Newark Economic Development
NJ DOT
New Jersey Alliance for Action

APPENDIX C

**A Commentary on the
Draft Final Market Analysis Report for
"Preparing Modern Intermodal Freight Infrastructure
to Support
Brownfield Economic Development"**



Submitted by:
Richard Roberts
Project Specialist: Freight and Intermodal Planning

March 2001



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DISCUSSION PAPER: EVALUATING THE FINAL MARKET ANALYSIS REPORT
FOR "PREPARING MODERN INTERMODAL FREIGHT INFRASTRUCTURE TO
SUPPORT BROWNFIELD ECONOMIC DEVELOPMENT"

Introduction

This paper will focus on three issues:

- The overall validity of the data and analysis conducted.
- The overall correctness of the findings and conclusions drawn from the analysis combined with interviews and case studies.
- The targeting of the knowledge obtained in this study to create a recommended set of steps for action by the North Jersey Transportation Planning Authority (NJTPA)

The overriding question is how well does this draft report help the NJTPA achieve the goals stated in the Request for Proposals. The specific analysis being evaluated in this paper is part of a larger multi-task phased study program being progressed by the NJTPA as part of their intermodal freight planning for Northern New Jersey.

The central issue being addressed is what should be done, if anything, to provide for distribution/warehouse facilities on brownfields sites in Northern New Jersey. Corollary questions on choosing sites; their size, location, etc. stem from working to answer the central question.

This assessment was conducted using the project goals as set forth in the Request for Proposal.

The Data and Analysis Does the Final Report provide the information needed?

The simplest answer is yes. The data used and analysis performed by Moffat & Nichol indicates the changes and needs:

- on the movement of goods;
- on the logistics requirements;
- on the projected growth of goods movement flows focused especially on marine cargo;
- on the future transportation and distribution facility requirements for Northern NJ; and,
- for the development of candidate criteria distilled from assessments of other goods movement systems, especially the provision of distribution/warehouse space.

A meeting was held on July 7, 2000 at which a discussion ensued concerning general and specific comments on the draft final report. This paper, in the pursuit of brevity, will not detail those discussions. The major focus at that meeting was on taking the conclusions and findings and shaping them into strategy and actions for NJTPA to consider pursuing. There was a limited discussion about refining some of the data and breaking it out differently, especially some of the projections.

A major bottom line conclusion of the analysis is a projection that about 700 acres of land will be required to specifically accommodate "value added" type distribution facilities by the year 2040, see page 6-12. The analysis placed added emphasis on this type of activity associated with newer distribution facilities. "Value added" typically means that something is done to alter the item being shipped and stored that adds to its value before it moves to its final destination, an individual person or a business. The process of altering the item can be extensive enough to be considered a form of light assembly. The importance of this type activity at distribution facilities is significantly increased jobs at these facilities. The overall trend in distribution facilities is to employ fewer people to operate, although there are some exceptions with some forms of e-commerce distribution facilities. Northern New Jersey has very little "value added" activity occurring in its distribution facilities discussed in this report compared to the area around the Ports of Los Angeles and Long Beach in California. (See pages 3-17 to 3-27, 5-2 & 5-6 for more information.)

The progression of steps leading to this major conclusion that about 700 acres are needed in 2040 follow a rational progression of steps. The major findings concerning what the mix of commodities are at the Ports of Los Angeles and Long Beach versus those coming into the Port of NJ and NY are correct. By combining with this information with information on how much coming into each port is consumed locally and how much is shipped longer distances, it becomes evident why the Port of NJ and NY has not caused much "value added" activity. The Port of NJ and NY serves more of a local consumer market mostly within a few hundred miles of the port. (See pages 2-22 through 2-

26 for the full discussion.)

The absolute correctness of this projection should not be the focus in determining a candidate set of future actions. This number is sufficiently far enough into the future that any number of factors could cause it to go up or down. The importance of this number is that its size suggests that a substantial increase in "value added" activity at distribution facilities is possible. This amount of land could equate to about 6.0 million square feet of space that is significant. This projected demand is in addition to a demand for distribution space to handle domestic goods movement, including newer space to replace outdated space built thirty and more years ago. The projection of 700 acres provides a benchmark to work towards in thinking about strategy and actions.

Other analysis points to the increases in the number of containers to be handled in the Port of NJ and NY. The numbers, appearing in Figure 6-6, page 6-11, are generally in line with those seen in other recent studies of future port activity. The forecast suggests a huge increase in the volume of containers moving through the port using a set of assumptions about future shifts in manufacturing to Southeast Asia and the Indian subcontinent and the increased use of the Suez Canal. The assumptions, which support this forecast, are being used by others, including the Port Authority of New York and New Jersey. Realizing these increases however assumes the other implications and needs mentioned in this report are addressed, especially improved landside intermodal facilities and connections.

The future increase in air cargo is only briefly mentioned. The point is made that the volume of

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air cargo, even if it grows tremendously, will always be small compared to marine, rail or truck volumes is true. It is also said that commodities being moved by air are less likely or not at all likely to require "value added" activities. This is currently true. Nonetheless, there will be a substantial need for more land to support air cargo facilities, especially around Newark International Airport. The commodities handled by air are usually high value and require priority handling. This requires sites close to the airport that are as directly connected to it as possible be made available for air cargo related activities. Air cargo facilities can also generate a large number of good jobs that like those associated with "value added" activities should be planned for and encouraged.

Findings and Conclusions: Are they correct?

Again, the simplest answer is yes. In a few instances, it is suggested that they be modified to reflect local conditions or be expanded in their scope or offer added flexibility. Here are a few recommendations:

Port Dredging - Not all of the potential for growth is dependent on dredging the channels to fifty feet. Some demand will exist in the future even if the channels are only forty-five feet. It should be stated clearly that while Northern NJ will best and most fully realize the economic and other benefits of the expanding world-wide trade and commerce if the dredging occurs, there is still a future without it that requires some action be taken.

The Role of the Existing Highway Network and Portway – One finding from the surveys of port related distribution space in the vicinity of the Ports of LA and Long Beach is its closeness, about

fifteen minutes drive, to the port. This finding becomes a conclusion about the area surrounding the marine terminals in Northern NJ where siting of distribution facilities on brownfields sites should occur. The use of distance as a measure would be too limiting. Travel time is a better measure to determine the area. Also, whether it should be fifteen minutes or something a little more should be left open to avoid getting trapped. Certainly, fifteen minutes driving time becomes a benchmark.

The issue of how the highway network presently functions and the proposed future improvement of that network to accommodate goods movement is easily derived from the preceding discussion of "how large an area do we consider?"

Portway is proposed as a truck priority road linking the Port/Airport Complex with the area rail/truck intermodal sites and providing improved truck access to an area that could accommodate new distribution space. There are sites along Portway that are candidate brownfields sites. The road is being designed to handle the heavier marine containers that are considered overweight and not allowed on other New Jersey highways and roads except with use of a special permit. Portway provides a potential key to creating a distribution corridor north and south of the Port/Airport Complex and also connecting to the proposed marine terminal expansion in Jersey City and Bayonne.

Definition of "Value Added" Activity - The definition of "value added" might be expanded to include any processing of a product prior to sale/shipment to the customer. This would then take in packaging and allied activities necessary for the item to move to its final destination, e.g. ironing fine clothing and placing it in plastic bags.

Also, there are allied activities possible, such as repairing items that are returned because they have some problem. For a while, companies importing electronics through the Port of NY and NJ did some assembling of components and light repairs in communities within twenty miles of the Port. The fundamental issue is encouraging additional job producing activity so that containers are not just being loaded/unloaded at the Port and moved through Northern NJ.

Role of Air Cargo - Air cargo typically is high priority and comes essentially "ready for sale" or it is parts for some high value equipment, etc. However, there are forms of air cargo, e.g. the handling of check clearing by the Federal Reserve in East Rutherford, NJ or the testing of medical specimens at laboratories both in close proximity to Teterboro Airport. They rely on specially scheduled aircraft movements to bring in the materials for processing from all over the country, mostly in the late PM. Both types of activities employ hundreds of highly skilled people. The future growth prospects for this type of air cargo processing may be less predictable because it is less tied to a trend and more episodic. It is tied to breakthroughs both in logistics and fundamental ways of doing business. It might be useful to acknowledge these activities in this report as a complement to "value added" activities.

The Importance of Developing a Strategy and Action Plan - This report documents what Northern NJ could gain in attracting new types of distribution facilities and itemizes some of the broad types of actions needed to achieve the optimum benefit. Absent a realignment of government policies, investments and regulations, it is likely that

distribution activity will spiral out farther from the Port/Airport Complex in Newark/Elizabeth/Jersey City and environs. This is not just as simple as this activity centering at locations like in Jamesburg at Interchange 8A. It is already apparent this activity will locate even further south, west and north, places like New Castle, Delaware, Allentown, Pennsylvania and Newburgh, New York. A scenario where the outward spiraling continues clearly benefits Northern NJ the least. Fewer jobs, more burden on the transportation network, more transportation investment and a clear lessening of the potential benefits of accommodating an international gateway.

Northern NJ has strengths. It has the NJ Turnpike that has its outer lanes available especially to handle trucks. It has several key interstates that intersect with each of those points of intersection surrounded by extensive distribution activity. In many ways I-287 marks the outer boundary of the inner ring of that activity. There is a substantial existing freight railroad network; and of course, the Port/Airport Complex. The components of this system need improvement and increased capacity that will require a series of major investments by government and the private sector. The size and duration of such an investment program mandates that more benefits be derived than "just moving freight".

Linked Policies - The European Union and the individual member countries have given considerable attention to their gateways, connecting transportation system and logistics capability. They have developed a series of comprehensive plans that encompass everything down to specific load points and intermodal transfer locations. The transporta-

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tion investment plans link to the economic development plans that in turn link with the environmental improvement plans. This example is one for Northern NJ to consider following. This is very similar to the intent of the State Plan. The proposal would be to develop a strategic vision for goods movement with brownfields development, redevelopment, transportation investment, labor force availability and accessibility and economic development as its focus. The plan would also include attention to improving the environment through use of improved intermodal logistics, use of less polluting technologies and effectively locating terminals and distribution facilities to increase overall efficiency.

Good planning requires that attention be paid to labor force availability and its ability to access jobs. The future we are looking upon is one where the supply of labor will not be growing because the overall working age population will not grow. Businesses that locate far from major supplies of labor will find it difficult to attract people. Government has a role to encourage through regulation, zoning and investment an effective pattern of residential and business development. Allowing the current outward spiral of distribution activity to occur will place one of several added burdens on government and the citizens it serves. For example, providing transportation access for that portion of the labor force that is still seeking a job but is economically or otherwise not able to own and drive a car is both very difficult to accomplish and expensive to do on a per trip or per person basis. Providing more residences in proximity to these distribution facilities too often eats away at remaining open space. Such expansion of residential development may also require other infrastructure investments. The human dimension of this issue

includes maximizing the job opportunities for a workforce that may not always be as mobile as the job market requires, as well trained as the job market expects and specifically trying to support the built-up developed areas of Northern NJ. It is also economically important for businesses to be able to attract workers from as large a labor pool as possible to insure they get the skilled workers they need. (See pages 5-3, 5-5, 5-7 & 5-8 for mention of labor issues.)

Interesting examples of public/private partnerships used to create intermodal distribution centers can also be found in Europe. For example, Guterverkehrszentren (GVZ) are being developed at several locations in Germany. One such GVZ has been developed near the port of Bremerhaven. Government and the private sector form a partnership to acquire the land. Government funds and builds the basic transportation infrastructure. The private sector develops the specific sites for distribution centers, truck servicing facilities and other supportive activities. The private sector organizes and operates a management system offering logistics support. Different distribution businesses work together to serve areas where demand from any one distributor would not fill a truck. By combining their shipping needs distributors reduce sending half-empty trucks to these areas and empty back-haul movements. Government and the private sector share the profit generated by the GVZ. This example could be used to demonstrate what could be done. This could be combined nicely with the following proposal.

Proposed Planned Unit Developments - The use of Planned Unit Developments (PUDs) for intermodal/distribution facilities is both practical and effective. Many municipalities in NJ use this

zoning designation for residential, retail and commercial land uses. The utility of advancing PUDs would be enhanced if they can be tied to other government initiatives - - either projects like Portway that is a designated project, or new planning/funding projects like Transportation Development Districts. Assemblyman Alex DeCrose sponsored legislation that formed a special commission, the Regional Intergovernmental Transportation Coordinating Study Commission (RITCSC). The RITCSC has just released their interim report that could lead to actions that would closely complement the establishment of PUDs.

The PUD designation could offer an opportunity to provide added regulatory and decision making certainty for the private sector investors. For example, the establishment of time limits that encourage quicker reviews and granting of permits, or developing a clearer definition of the required information that must be submitted are possible. Given the difficulties often encountered with developing brownfields, such improvements to the regulations and decision making could act as an offset or even an incentive to entice private sector interest in the candidate projects.

Candidate Opportunities - Here are a few such candidates:

- The Hackensack Meadowlands Development Commission is now considering redeveloping the portions of Carlstadt and Moonachie (located about 12 miles north of Newark and immediately adjacent to Teterboro Airport) that are zoned for light industrial and distribution. This area contains millions of square feet of older warehouse and light industrial space that does not meet today's market requirements. A number of miscellaneous chemical

processing plants are also located in this area that have left behind a polluted and scared land. This area is being considered as a form of redevelopment zone or PUD.

- Similar in intent but not called a PUD, are plans evolving in Elizabeth for the property located west of the New Jersey Turnpike, south of Newark International Airport, east of Route 1& 9 and north of the old CNJ rail line through Elizabeth.

- Newark has focused on redevelopment along Doremus Ave. Private developer interests have focused periodically on east of the Ironbound section of the city that is wedged between Routes 1&9 and the New Jersey Turnpike.

There are yet other opportunities in communities in Bergen, Essex, Hudson, Middlesex, Morris, Passaic and Union counties. With careful consideration of a driving time limit to circumscribe the boundary of the area of focus, the candidate list will be large enough to insure projects will be identified.

The Future Strategy and Action Plan :The Potentials for NJTPA - The myriad of actions required to coordinate policy, regulation and investment where it has not existed is like creating a "string of beads" as John Ricklefs, Moffat & Nichol, has stated in our conversations with him. There is no other governmental body as well situated as the NJTPA to perform this advocacy/coordinating function. NJTPA has the responsibility for coordinating the transportation planning and investments in Northern NJ. The siting and development of distribution facilities is directly related to both these responsibilities. The membership of the NJTPA board includes many of the critical govern-

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ment stakeholders and its ability to establish committees provides an easy means of involving other stakeholders, e.g. railroads, trucking companies, marine shipping firms, third party logistics businesses, etc.

The advocacy portion of the responsibility includes education of key people, legislators and citizens, concerning the need to focus efforts on locating distribution and other goods movement facilities in locations that support the Port/Airport Complex. The coordinating responsibility has two tasks. One is to assemble the critical stakeholders, i.e. transportation agencies, private businesses, state, county and municipal officials and organizations focused on goods movement, to gain their support on a coordinated action agenda. This should not be too difficult given the attention some legislators, e.g. Majority Assembly Leader Paul DiGaetano, have devoted to issues of redevelopment. The other task is to refine the action agenda and establish a structure that will cause the level of coordination desired among all these stakeholders.

The outcome of this work by NJTPA and others could be up to six immediate term projects, each with the appropriate levels of specific coordination and support, and possibly planning work focusing on another six. Critical is that NJTPA place the spotlight on these efforts as they are initiated and progress so a constituency of support is created that offers encouragement and critical support.

It may also be necessary for NJTPA to play another role providing technical assistance or funding to hire necessary expertise to effectively advance the identified candidate projects. The need for NJTPA to assume this responsibility needs to be assessed on

a project-by-project basis.

Focusing on the Issues – As highlighted in the report by Moffat & Nichol, there are major risks and many missed opportunities if where distribution facilities are located, redevelopment and brownfields development are not addressed. Some of the central points are to improve local connectivity between the major terminals and intermodal facilities. This comes down to three measures: reducing travel time to the minimum practical, increasing reliability that travel time will be achieved to the maximum, and keeping costs reasonable. If travel times are reduced and they are very reliable, some increased costs may be accepted in the marketplace. But the value of these actions in terms of benefits to the private sector must be greater than the increased costs or at a minimum resistance will result from the private businesses.

Mentioned in the report is the issue of handling overweight containers. Accommodating these containers that come on ships from overseas is a very effective incentive to gain private sector interest in the development of brownfields or other properties.

Earlier the issue of regulation, permitting and decision making were highlighted. These must be addressed or plans will not progress and private sector support will diminish or be lost.

Funding incentives must be one of the beads on the string. These incentives can take many forms. It would be especially useful to provide funding for the "soft cost planning" necessary to define a project and determine if it is a "real" project. This reference to "real" means that the private sector is activity interested in advancing the project and has some hope it will succeed. Government may

determine it has broader reasons for advancing a project and alternately could assume a fuller burden for developing the project scope and parameters. (See pages 6-1 through 6-7 for more on the issues and needs that need attention.)

Partnering - In discussing the role of the NJTPA, their role as an advocate and coordinator is highlighted. Only slightly is their role of partner suggested, mostly in terms of planning and technical assistance. A more proactive role for NJTPA to consider is partner with the array of government agencies and the private sector. This would require only some adjustment in the level of NJTPA involvement and would still encompass many of the same specific roles. A major difference is NJTPA would be more upfront in causing projects to advance. This is justified since NJTPA will otherwise be making transportation investment decisions that may trace a substantial portion of their need back to these projects.

Setting Priorities - This activity requires that the roles of advocate, coordinator and partner be filled. The projects to be advanced will likely be complex with overlapping requirements and issues to be addressed. It is important a simple process and the right players be structured to make the decisions about priorities. The priorities to redevelop a brownfield property must be linked to transportation investments that are also clear priorities.