

US EPA ARCHIVE DOCUMENT

**AN APPLICATION FOR DESIGNATION
UNDER PROJECT XL**

**The Redevelopment of the
Atlantic Steel Site in Central Atlanta**

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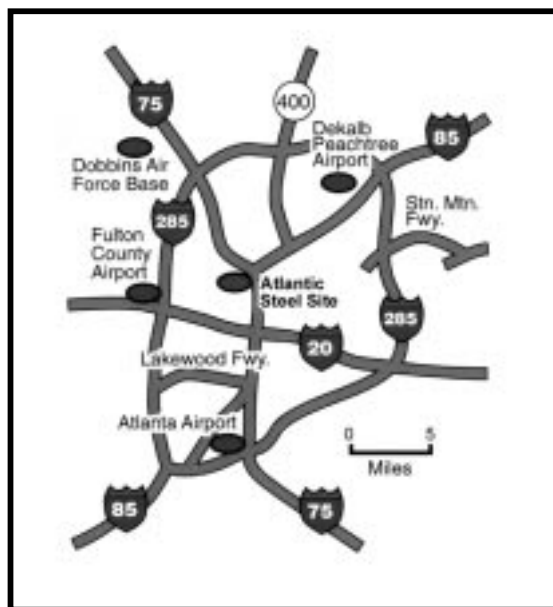
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Executive Summary

Jacoby Development Inc. is proposing a mixed-use -- infill development in the heart of Midtown Atlanta, Georgia. The site is currently home to the Atlantic Steel Mill, an old industrial workhorse currently operating at a fraction of its production capacity. Jacoby Development Inc. requests and proposes to the United States Environmental Protection Agency (EPA) that the remediation, redevelopment, and transportation components of this project be considered as an XL Project. Figure X.1 provides a map of the regional location of the site.

Figure x.1



As shown in figure X.1 the site is located in the center of the Atlanta metropolitan region. The 138 acre parcel is the among the largest brownfield sites in the Southeastern United States (USEPA -- Region 4, 1998).¹ The size of the site and its prominent gateway location into the Atlanta Central Business District (CBD) are two key attributes of its attractiveness for redevelopment. As discussed in greater detail below; the site represents a unique economic opportunity to integrate a large scale development into the existing fabric of midtown Atlanta. Moreover, as proposed, this project represents a significant departure from current auto-oriented approaches to land development which dominate much of the real estate industry throughout the nation.

¹ This is not the same as the Brownfields Program related to Superfund Cleanup.

As proposed, this project will result in the creation of a sorely needed model of infill land development -- an alternative to what is often referred to as "sprawl." Recent focus group research conducted by the EPA - Office of Policy suggests that large segments of the public view sprawl as unplanned growth and prefer the concept of a "livable community." As distinguished from sprawl, the livable community that is proposed here is articulated by moderate to high concentrations of residential and employment trip ends, a vertical and horizontal integration of land uses, and a highly interconnected circulation system within the development and to adjacent areas of midtown. Recent analyses conducted in Atlanta and elsewhere in the nation suggest that the lack of proximity and connectivity between trip ends, which is a function of land use, underpins the high generation of vehicle miles of travel (Frank and Stone, 1998; Holtzclaw et al, 1998) and vehicle emissions (Frank and Stone, 1997).²

Deemed "current trends" in the recent regional transportation plan analysis conducted by the Atlanta Regional Commission, the auto dependent regional growth scenario, and accompanying transportation investments, are largely responsible for the current lapse of transportation conformity in the Atlanta Region. Without a conforming transportation plan, the programming of smart transportation infrastructure to support smart growth decisions requires more creativity and flexibility. This is where we look to the XL Program as a mechanism to integrate the environmental benefits of land reclamation and the benefits of land use actions with the multi-modal transportation investments required for the project. As suggested in figure X.2 the project site currently suffers from extremely low accessibility due to the lack of a linkage to and across I-75/85 to midtown and MARTA.

**Figure X.2 -
The Project Site**

The lack of access between the northeastern and northwestern areas of midtown is attributable to the 14-lane interstate highway system. The ability to attract a high quality redevelopment is predicated upon



² Atlanta leads the nation in the generation of per capita vehicle miles of travel (National Personal Travel Survey (NPTS), 1997).

improving multi-modal access to the area. Analyses conducted by the consulting firm of Moreland Altobelli suggest that the successful redevelopment of the site can be accomplished with the construction of an interchange and multi-modal bridge overpass across I-75/85 at 17th Street.

A Proposal for Smart Growth

Research shows that infill projects like the Atlantic Steel proposal are the type of smart growth that the Atlanta Region needs to reverse current household travel and vehicle emissions trends and focus on a strategy leading to improved air quality (Frank and Dunphy, 1998). EPA's definition of smart growth includes the following basic principles (Anderson and Tregoning, 1998):

- protects investment in existing neighborhoods -- The project has been unanimously supported by the Midtown, Loring Heights and Home Park Neighborhoods recognizing the fact that the project will greatly enhance their communities by increasing property values that are currently depressed relative to surrounding areas due to the proximity to the steel plant.
- protects environmental quality and conserves open space -- The project is an adaptive reuse of an existing urban site resulting in no net loss of open space. The alternative greenfield development would likely involve the conversion of raw land into urban use and result in the loss of both habitat and open space.
- makes efficient usage of public money and existing infrastructure -- The project makes efficient usage of existing telecommunications, water, sewer, and stormwater systems and seeks to capitalize on existing transportation infrastructure -- both transit and highway. The redevelopment will not result in the need to extend a highway into an undeveloped area of the region as might be the case with a greenfield development.
- Decreases congestion by providing alternative modes of transportation -- The 17th Street Interchange and Transit Corridor brings MARTA rail across I-75/85, connects to the regional bikepath system, and includes HOV access to the northern end of midtown where operationally feasible.³ In addition, the proposed land use action will afford the luxury of walking between centers of residential, entertainment, cultural, employment, and recreational uses, thus offsetting vehicular travel.

Another principle noted in the EPA's definition of "Smart Growth" speaks to the market signals that the public sector engenders that impact developer behavior. This principle is of the utmost importance as the Atlanta Region grapples with

³ Feasibility of the HOV access is a function of the existing vertical and horizontal alignments of the HOV lanes along I-75/85. In some cases it is not operationally safe to gain the elevation required to meet the bridge deck within the distance that is provided -- meaning that the ramps would need to be too steep. In many locations there is not enough space to peel off an exit ramp along the highway.

its air quality and transportation futures and posits that Smart Growth rewards developers with profitable products, financing, and flexibility. Smart growth is the product of a system of rewards that support development that meets the principles identified above. In this case the XL Program and framework would lead to the implementation of the 17th Street Interchange and Transit Corridor required to support the redevelopment of the Atlantic Steel Site.

Land Use, Transportation, and TCMs

The projects within the current Interim Transportation Plan are partially predicated upon a needs assessment that is based on projected travel demand. The level of demand is a function of the amount and nature of development that affects a particular sub-area and corridor. The amount of development is predicted through a land use allocation process that distributes growth based on the presence of developable land and accessibility within a given transportation analysis zone (TAZ). Therefore, the capacity to accommodate growth is defined in a manner that often overlooks areas suitable for redevelopment. Therefore, the majority of the 12 million square feet of development proposed in this infill project would tend to be allocated to a greenfield setting that provides undeveloped land.

Research conducted by the USEPA found relative air quality benefits of infill projects like the Atlantic Steel proposal over greenfield development (Infill Versus Greenfield Development -- USEPA -- OPP, 1998). As indicated above, research conducted in the Atlanta Region concluded that higher levels of residential and employment density, when coupled with increases in connectivity (as measured by the # of blocks per unit of area) is associated with reduced household travel and emissions. Taken collectively, the regional location and land use actions embodied in the Atlantic Steel proposal provides a critical component of the alternative vision of growth and development required to steer the Atlanta Region towards compliance with the Clean Air Act.

Current regulatory conditions prevent the programming of the 17th Street interchange within the interim transportation plan unless it can be demonstrated as a long term air quality benefit. The provisions of the Clean Air Act include the creation of transportation control measures (TCMs) for the purpose of improving air quality within non-attainment areas. Transportation control measures are specific strategies that have an air quality benefit. TCMs are adopted within the State Implementation Plan (SIP) and require a financial obligation. TCMs include various forms of transportation demand management, construction of HOV lanes, establishment of transportation management associations, and in rare cases – the deployment of transit infrastructure.

This proposal is very unique because it calls for the development of a non-traditional TCM which demonstrates the air quality benefit of a land development action tied to a transportation investment action. While there is no precedent for this type of TCM, the regulations do not provide an exhaustive list that would preclude such a TCM. The goal of the Clean Air Act is the long term and sustained improvement to air quality. Therefore, the EPA should use flexibility in considering different types of TCMs and different ways to determine air quality benefits. The ability to create a long term air quality benefit of the bridge requires addressing the manner in which the project is

developed. This is a departure from traditional emissions assessments that often rely on the short-term benefits realized from reduced traffic congestion when transportation investments are made.

As indicated, the air quality assessment that underpins this proposal is the creation of a TCM which programs the bridge based on the comparison of this infill project with a greenfield project. The TCM assessment is further predicated upon the redevelopment of the Atlantic Steel Property into a transit supportive – walkable urban setting and the construction of a multi-modal linkage to the Arts Center MARTA Station. The regulatory relief that is requested is the ability to measure the combined air quality benefits of the land use action, based on an infill-greenfield comparison, in conjunction with the transportation investment.

It is our assessment that this project fits the requirements and intent of the XL program very well. As highlighted above, XL provides the much need flexibility to program a transportation investment required to support an environmentally responsible land use action. This land use action represents the needed departure from current land use decisions which underlie our air quality dilemma. We look to the XL Program as a tool for innovation that can benefit from the conformity lapse in Atlanta and offer up an alternative model of transportation investment that specifically supports the creation of livable communities.

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Chapter I -- Project Context and Description

The Policy Context

The Atlantic Steel redevelopment calls for a compact, mixed-use, transit-supportive development where jobs, residences, shops, and entertainment are located in close proximity. The project includes the transformation of an industrial site to a use compatible with the surrounding area. In addition, the project supports a host of environmental and societal benefits and corresponding federal, state, and regional policies that include:

- regional transportation and air quality objectives by locating development in an area where viable travel options include non-motorized and transit (Clean Air Act, Transportation Equity Act for the 21st Century (TEA-21), The ARC's Interim Regional Transportation Plan, The State Implementation Plan);
- focusing development in areas consistent with the provisions of the City of Atlanta's Comprehensive Plan (The Georgia Planning Act);
- the mitigation of a major brownfield location (National Environmental Policy Act);
- Supports the equitable investment of federal funding on the basis of race and color (Title VI of the Civil Rights Act) and income (Executive Order 12898); and
- Cleanup of a RCRA hazardous waste site.

The Land Use Context

The Atlantic Steel site is a 138-acre tract near the center of the Atlanta Metropolitan Region just north of the CBD (see Figure X.1). The project site is bounded by I-75/85 on the east, the Home Park Community and Georgia Tech to the south, a railroad alignment to the north, and a small portion of Northside drive to the west. It is important to note that the site is disconnected from midtown and MARTA by the interstate making it extremely difficult to access midtown and MARTA under current conditions. Research on the effects of connectivity on travel choice suggest that the lack of connectivity with the rest of midtown would result in increased auto usage and reduced walking and biking to midtown (Frank and Stone, 1998; Holtzclaw et al, 1998). The provision of a bridge across the interstate with a dedicated transit linkage greatly increases the relative utility of MARTA and the ability to access services, jobs, and residents currently concentrated on the eastern side of the freeway. Figure 1.1 provides a description of the adjacent land uses that surround the property.

Figure 1.1 – Land Use Context - Temporarily Not Available**To the South**

The area to the south includes Home Park, and Georgia Tech. Home Park, immediately adjacent to the site, is a community that was separated from midtown when I-75/85 was constructed some 40 years ago. This former Atlantic Steel mill village just north of Georgia Tech is today a mix of student renters, older residents, young homeowners, and artists. The community also includes businesses, restaurants, churches, and a mosque. Both residents and real estate agents say there's a trend in Home Park toward increasing homeownership, as new homeowners are attracted by the area's blend of location and price.

The late 19th-century Home Park might be unrecognizable to those who know it today. For years, in fact, the area was known as Chastaintown after Avery Chastain, a major landowner, and was a center for horse trading. The

community officially became part of Atlanta in 1909, when the city boundaries were extended beyond Fifth Street. The Atlantic Steel Co. plant opened just north of Home Park in 1901, and by the early 1900s, the area had become a blend of city and country living. Many residents worked in nearby industries such as Atlantic Steel, the Exposition (cotton) Mill or the Miller Union Stockyards (Butler, 1991).

The area was quite self-sufficient, and there was a thriving commercial area at 10th and Hemphill, generally considered the center of the neighborhood in those days. Public and private country schoolhouses provided education until 1911, when the Home Park School was opened, providing an eighth-grade education and qualifying students to continue on to Atlanta high schools. Home Park School has since been renovated into loft-style rental apartments.

The Home Park community went into an economic decline mid century that has only recently reversed. This decline is associated with the construction of the Interstate system which separated the community from the rest of midtown. Most residents agree that the biggest change wrought on the community began in the 1960s, with an influx of Georgia Tech students eager to rent from absentee landlords who bought up houses as older residents died and young people moved to the suburbs. The condition of many houses deteriorated, crime rose, and the feeling of community lessened. Today a combination of increasing neighborhood activism and an influx of young homeowners has given the neighborhood a bright future.

The Home Park community has been very engaged in the redevelopment proposal and recognizes this project as a major economic benefit to their community. Home Park residents also understand that the 14th and 10th Street bridges do not provide sufficient linkages with MARTA or the interstate system to support a project of this magnitude. "Everyone seems really excited about where the neighborhood is going," says Julie Grant, a resident who runs the Exhibit A gallery on 14th Street with her husband, Clark Brown. "When I walk around I can see that the people who are buying the houses are fixing them up."

14th Street Development

Home Park's northern end, and the area immediately adjacent to the Atlantic Steel Site, is separated from the rest of the neighborhood by 14th Street. Wide and active, 14th Street has a welter of offices, restaurants and businesses and the Al-Farooq Masjid mosque, one of Atlanta's largest. North of 14th Street, Home Park's look changes somewhat for a couple of blocks - to slightly larger houses and broader streets. One well-known 14th Street business is the Silver Skillet/Little Skillet restaurant, a diner that grew up during the 1950s catering to Atlantic Steel families and has become an Atlanta tradition. Owner Teresa Breckenridge, who is vice president of the community improvement association, asserts the Silver Skillet would be unthinkable outside its Home Park location.

"I definitely plan to stay here." The recently opened Georgia Center for Advanced Telecommunications Technology (GCATT) on 14th is the location of Georgia Public Television and is already reaching capacity. Several additional high tech facilities, some sponsored by the Georgia Tech Foundation and other interested community groups, are planned for the 14th Street Corridor.

Georgia Tech, located further to the south, is an active partner in the redevelopment of the Atlantic Steel Site. Georgia Tech's proximity to this project and keen interest in technology development makes them a key player in the development of the technology park portion of the project. Georgia Tech recognizes the negative economic impact of the current Steel Mill on its campus and the opportunity presented by its redevelopment. Georgia Tech's current campus master planning efforts includes the objective of carefully integrating its development within the defined context area that includes the project site. Georgia Tech is also interested in expanding its high tech business incubator facilities along 14 Street and views the redevelopment of the Atlantic Steel site as a mechanism to achieve this objective. Technology-oriented industries who enjoy the synergy with Georgia Tech are the anticipated occupants of the majority of this portion of the project which comprises approximately 2,000,000 square feet of development at buildout.

To the West and North

The area to the west of the site is characterized as industrial and commercial with limited residential. This is patterned throughout much of the midtown area where the reaches to the west of the railroad alignment have been reserved for the movement of goods and freight yards. This leads back to Atlanta's historical development as a railroad town known as "Terminus."

To the East

The area to the east is the heart of the midtown community. The project site, and the area to the south of the site, was also part of midtown prior to the construction of I-75/85. MARTA rail runs north-south parallel to the interstate on the eastside through Midtown. The northern end of midtown enjoys a highly mixed land use typology that includes corporate office, commercial, entertainment, cultural facilities, and multi-family and single family residential development. A significant mixture of residential products exist in this area with home ranging in value from \$2,000,000 to rental units at under \$500 / month all within a two mile radius.

Existing Circulation and Site Access

Both transit and highway access to the project site are currently limited. The nearest access to MARTA rail is on the eastern side of the interstate at the Arts

Center Station. Highway access from the north and south is provided from the 10th and 14th Street interchanges as discussed below and a minor service road at 16th Street. The existing circulation system in the vicinity of the project site is conveyed in Figure 1.2.

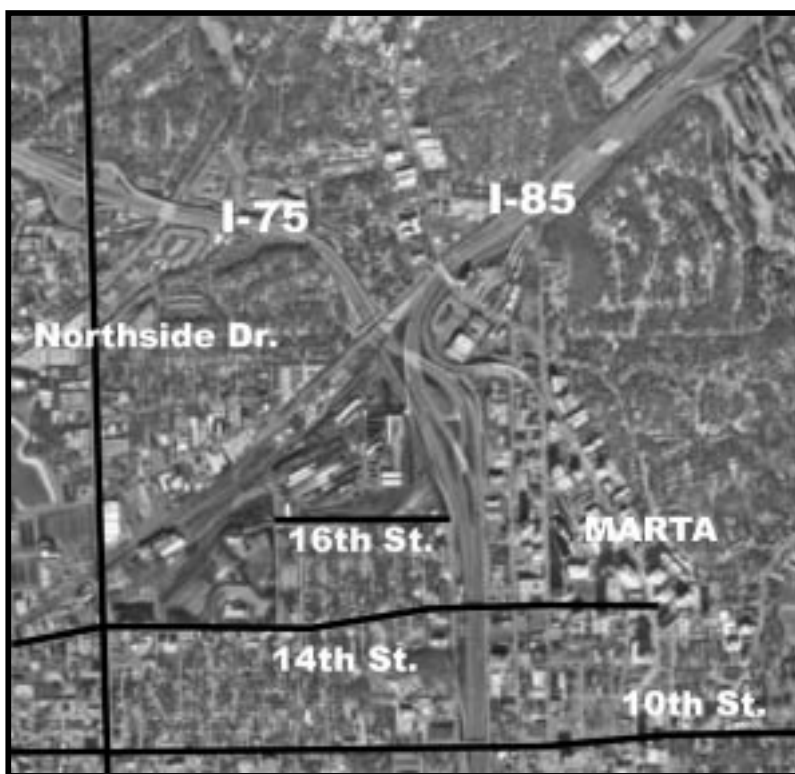


Figure 1.2 -- Existing Circulation System

Access to and across the interstate requires travel to 14th Street or 10th Street. What is not depicted in Figure 1.2 is the fact that both of these bridges operate at capacity during peak periods and is not inviting to both biking and pedestrian movement. In fact, these transportation facilities are pedestrian hostile and dangerous on foot or bike. The nearest designated non-motorized linkage across the interstate occurs over a mile to the south at the 5th street overpass which has a bike lane.

Supporting Transportation Factors

Further to the south, Marietta Street serves as the western boundary of Centennial Olympic Park north of the Omni Station. This has seen some redevelopment in recent years, mostly in the form of refurbished residential loft

buildings. This resurgence is continuing. The planning efforts by the Fairlie-Poplar Implementation Task Force and COPA (Centennial Olympic Park Area) have created a vibrant downtown neighborhood adjacent to the park. Marietta Street saw the most progress prior to the Olympic Games and is currently waiting for another catalyst to continue revitalization. The recently expanded Westside Tax Allocation District (TAD) coupled with a proposed transit alignment would serve as this catalyst. It would benefit the entire area around the park and especially the citizens of Vine City and English Avenue. The southern terminus of the intown trolley could either be the CNN Center / Georgia Dome MARTA Station or the Five-Points MARTA Station. This connection would provide a much-needed loop encircling Midtown and Downtown.

Georgia Tech and other public entities have recently received a formal request from the Governor's Office to reduce commute trips by 20 percent as part of the recently adopted Voluntary Ozone Action Program (VOAP). A Transportation Task Force at Georgia Tech is working with the ARC's Commute Connections staff to explore ways to implement transportation demand management strategies. This work may lead to the formation of a Transportation Management Association (TMA) with Coca Cola and others to solve transportation problems in the study corridor.⁴ Such a partnership along the western side of I-75/85 needs to be assembled to assess the potential benefits of rail transit in the aforementioned corridor (See Figure 2.1 below). Without improved transit service in the study area, it is doubtful that efforts at commute trip reduction will be effective. The existing commuting patterns in areas without good transit service in midtown indicate that direct and efficient rail access into the project site is required for this project to demonstrate superior environmental performance.

⁴ The ARC has recently received the approval to use CMAQ funding to support 80% of qualified TMA activities. The ARC submitted an application to the Federal Highway Administration for funding the development of Transportation Management Associations which would be adopted as a transportation control measure and included in the State Implementation Plan. The formation of the TMA at Georgia Tech is one of the TMA's that would potentially be financially supported if this proposal is funded.

Existing Air Quality Conditions

The Atlanta Region is in non-attainment for ozone which is formed when two precursors, volatile organic compounds (VOC) and oxides of nitrogen (NO_x) react in sunlight. The ability to reduce ozone can be accomplished through the reduction of either VOC or NO_x, however, VOCs are also the product of biogenic sources which include vegetation. Figure 1.3 provides a conceptual model of the various sources of emissions in the Atlanta Region.

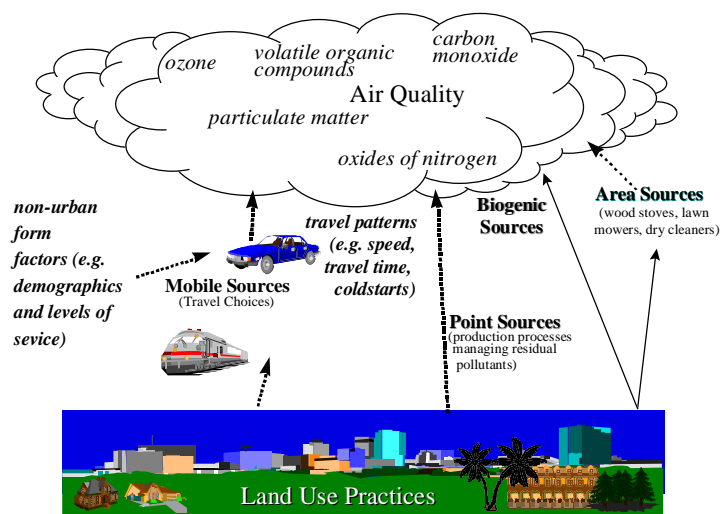


Figure 1.3 -- Sources of Emissions

Given Atlanta's rich vegetative cover, it is difficult to reduce VOCs sufficiently through anthropogenic (man-made) sources. Therefore, the ability to effectively reduce ozone formation requires the reduction of NO_x. The primary generator of NO_x in the 20 county metropolitan area is "mobile sources" which include all forms of transportation except air based travel. Point sources include factories and other "permitted emitters" and are also a major generator of NO_x in the region. The percentage of NO_x emissions from point sources increases dramatically when including the outlying areas where the Georgia Power stacks are located.

Chapter II -- Proposed Transportation Improvements

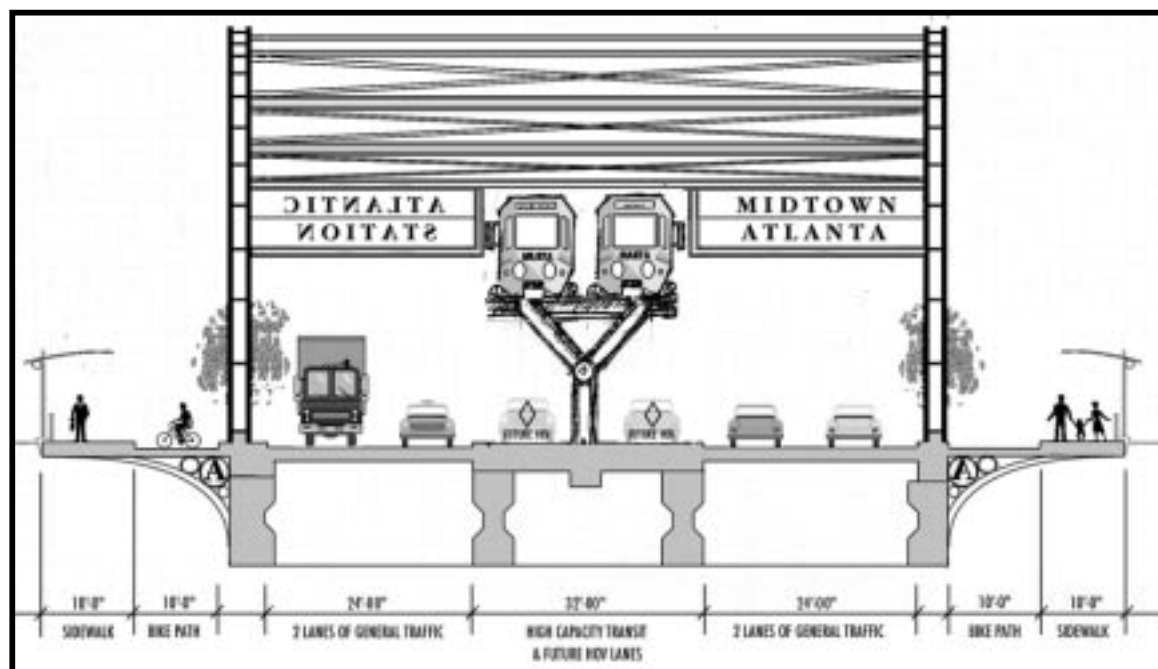
Introduction

The City of Atlanta documented that the project is consistent with goals and objectives found within the Regional Transportation Plan (RTP), Regional Development Plan (RDP) and the City of Atlanta's Comprehensive Development Plan (CDP). Given the magnitude of the project however, the City of Atlanta specified that the applicant, Jacoby Development, Inc. should be required to develop and receive approval from MARTA and GDOT of a transportation concept plan that handles the additional traffic generated by the development. Furthermore, the City of Atlanta's review states:

“It should be noted that the concept plan is unconditionally dependent on a new crossing of the downtown connector in the 17th Street corridor.”

The City also states that the applicant should be required to produce a transportation management plan (TMP) for all non-residential components of the development which includes the specified need to link the development to the Arts Center MARTA Station. Figure 2.1 provides a cross section of the proposed 17th Street bridge.

Figure 2.1 -- Proposed 17th Street Bridge Cross Section



As proposed, the 17th Street bridge will include generous pedestrian and bike zones, four lanes of general purpose traffic, and a dedicated high capacity transit corridor linking the site with the Arts Center MARTA Station. The 124' cross-section will be designed to accommodate five modes of transport described below:

1. A 10'-wide pedestrian thoroughfare in both directions (east and west), accented with streetscaping such as trees, benches, and signature lampposts. This streetscaping, particularly the trees and lampposts, would serve as a buffer between pedestrians and vehicular traffic and provide the amenities required for a quality walking environment.
2. Bicycle lanes in both directions connecting midtown and the project and providing a key link in completing the regional bikeway network.
3. Two lanes of general vehicular traffic.
4. Adequate right-of-way is reserved for a third interior high occupancy vehicle (HOV) and bus lane in parallel. This third lane for HOV and bus service is designed to serve as an incentive to carpooling and will be vital part to the redevelopment transportation management plan (TMP). A TMP sets as its goal a certain percent reduction in trips associated with a particular area and/or development.
5. The last piece of the new 17th Street transportation corridor is its transit component. A new light rail or people mover spur line, originating at MARTA's Arts Center Station, will occupy the remaining area in the median/middle of the bridge. This line will continue into the redevelopment.

A landing at the 900' elevation level on the west side of the downtown connector would allow for a 17th Street "Boulevard" or main street through the Atlantic Steel redevelopment that would connect with Northside Drive to the west. The crossing point for the bridge provides adequate space for the east and west touchdown points as well as a central support pier located between the opposing flows of traffic. This generous median area will allow for construction without significantly affecting peak transit and auto oriented traffic flow. Upon touching down on the east side of the interstate, the bridge could either continue over or across Spring and West Peachtree Streets depending on transit specifications and access to MARTA's Arts Center Station. In conclusion, the structural impact of the bridge should be positive and the visual or aesthetic impact could be quite an asset as it would be a "gateway" and visually frame Atlanta's downtown skyline.

Analyses are underway to determine the most appropriate transit technology for both the requirements of this project and future extensions of the line into Cobb and southward along the west side of I-75/85. The 17th Street bridge will also be an interchange providing direct access to the interstate system. Figure 2.2 provides a plan view of the existing transportation infrastructure and proposed transportation improvements.



Figure 2.2 -- Plan View of Proposed Transportation Improvements

Southbound ramps will be provided for I-75 and I-85 which join in the vicinity of the proposed bridge. It is important to note that this confluence of two major highways increases the accessibility to the project site and also complicates operational considerations associated with added access. Northbound access will be provided from the interstate as shown. HOV lanes exist in the center of the interstate to the south of the 17th Street alignment and are separated for I-75 and I-85 to the north. Careful investigations are underway at present to determine the potential of adding direct HOV access into the project. In addition, the project team and GDOT may investigate the feasibility of locating additional HOV facilities on supporting surface arterials in the project area. HOV lanes on arterials are relatively new to transportation planning and have several operational limitations. The air quality benefits derived from the inclusion of HOV lanes on the bridge itself will depend on the provision of additional HOV access into midtown and from the interstate.

The project team is preparing a concept report that delineates an interchange justification analysis that will be undertaken over the next several months. This report includes all of the dimensions identified above. The inclusion of specific points of HOV and general purpose access to the interstate and the final

alignment for high capacity transit to the Arts Center MARTA Station will depend upon the opportunities and constraints created by the design of the existing system to which the 17th Street improvements are being integrated. The Federal Highway Administration and the Georgia Department of Transportation are the lead agencies responsible for review and approval determination of the Interchange Justification Report (IJR). It is important to note that every effort is being taken to identify how and where HOV and transit access can be integrated into the proposed improvement.

Creating a “Transit Loop”



Figure 2.3 – Extending Transit Service

Bringing rail across I-75/85 at 17th Street, as proposed in this project, presents a significant opportunity to serve the western portion of midtown with high capacity transit. This area to the west of I-75/85 includes a concentration of several major employers such as Turner Broadcasting, Georgia Tech, Coca Cola, and CNN. The City of Atlanta and MARTA are interested in exploring the potential of extending the 17th Street Transit Investment southward to serve these employers and link back up with MARTA at Omni Station (see Figure 2.3). This extension would create a “transit loop” and greatly increase access to the project and existing development in the western side of midtown via transit. It can be inferred from past studies of transit ridership patterns, that such an

investment would likely result in a net reduction in vehicular travel for both short cold start trips and longer regional trips located within MARTA's service area of Fulton and Dekalb Counties.⁵ This reduction in vehicular travel is predicated upon the assumption that a large concentration of development that is currently undeserved by transit would be given direct and proximate rail access.

Chapter III -- Documenting a Superior Environmental Performance

⁵ MARTA only serves the two most urban counties in the region -- Fulton and Dekalb. Referendums to expand MARTA into the surrounding counties have failed for over 20 years. The Atlanta Region's non-attainment area currently extends well beyond the 10 county Atlanta Regional Commission's planning area. The large # of local governments has a most confounding effect on the ability to grapple with regional problems of transportation and air quality.

Meeting the 8 XL Criteria

The remediation of the Atlantic Steel Site and ability to activate the proposed development concept depend upon the permitting of a multi-modal bridge crossing Interstates 75/85 in the vicinity of 17th Street in Midtown Atlanta (see figure 2.2). The purposes of this transportation investment are threefold:

1. Connecting the project to MARTA transit.
2. Providing improved access to the regional highway and HOV systems.
3. Improving non-motorized connectivity in the northern portion of midtown.

The ITIP may contain TCMs from the State SIP, grand fathered projects from the lapsed TIP, and projects exempt from conformity analysis as described in 40 CFR 93.126 (safety, mass transit, etc). Technically speaking, non-regionally significant projects do not need to go into a TIP or ITIP --unless Federal funding is involved -- and local governments can proceed with them, and fund 100% of them, w/o approval from ARC or insertion into a TIP or ITIP (40 CFR Section 93.127). As a result, the adoption of a TCM is the only plausible avenue for gaining bridge approval.

Why Project XL?

Due to the inability to meet air quality mandates, the Atlanta region is currently constrained in its ability to program and implement improvements like the needed 17th Street overpass. This is true regardless of funding source where an improvement is proposed that directly impacts the interstate system or otherwise defined as within state owned right-of-way. What exists is a nexus of bad air, federal clean air policy, and project requirements. More specifically, poor regional air quality resulting largely from an auto dependent development pattern has resulted in the inability to move forward a proposal for a major transit supportive infill project that promises air quality benefits. What is required is an action that allows this project to move forward based upon its collective and measurable air quality and overall environmental benefits which make it consistent with the intent of adopted policies at the local, regional, state, and national levels (see Policy Context Chapter 1).

As indicated above, the redevelopment of the site requires the programming of a transportation improvement that is currently only possible under the classification of a transportation control measure (TCM). However, the ability to demonstrate an air quality benefit of the bridge alone is limited to short term benefits in transportation system performance. When transferred to an outlying area -- this same strategy have the potential to result in negative secondary impacts of increased development, loss of open space and habitat areas,

increased VMT and emissions as a function of more people “living on the edge.” Rather, we propose that EPA use the conformity lapse as a tool to implement the principals of “Smart Growth” discussed above. This means providing the necessary clearances to allow the programming of transportation improvements that support development decisions that offer the greater promise of a superior environmental performance.

Project XL provides the framework to compare the environmental performance of:

Tier 1 = a comparable Greenfield Development; with

Tier 2 = the proposed Infill Development.

We have defined Tier 1 to be a Greenfield Development based on current economic and growth projections for the Atlanta region which call for vast majority of new development to continue to go to the urban fringe. This means that we assess the most likely implication of not redeveloping the site will be a continuation of current trends. Tier 2, the redevelopment of this central location, represents a strong departure from these trends. The ability to document the long term air quality benefits of the infill development stem from the travel patterns that will occur with improved access to MARTA **combined with** the land use attributes of a compact, well interconnected, pedestrian-oriented, mixed use development. Project XL provides the ability to compare the proposed development to an alternative greenfield development and to link the land development action (project) and the transportation investment action (Bridge) for the air quality analysis. In addition, XL provides the ability to integrate the collective environmental benefits that accrue from the remediation of the brownfield site and the ongoing superior environmental benefits of the project.

Criteria I -- Documenting a Superior Environmental Performance

It is postulated here that the proposed redevelopment of the Atlantic Steel property promises relative air quality benefits arising from a confluence pedestrian / transit supportive land use proposals, and regional location attributes. In addition to the air quality benefits, the project also brings other environmental benefits including stemming from pollution prevention programs, green building design, sustainable building practices, water conservation, energy conservation, and recycling.⁶

⁶ *Since a cornerstone of the project surrounds land use, transportation, and air quality relationships, a brief overview of research in this area is a research findings that relate land use with travel patterns are presented in further detail in Appendix A.*

The development master plan and concept proposes the reconnection of the neighborhoods and the creation of a vital urban community by a multi-modal bridge spanning the interstate. This reestablishes the link from the property to Spring and West Peachtree Streets and the Arts Center Metropolitan Atlanta Transit Authority (MARTA) rail station. The site plan is laced together with streets and walkways that continue the grid-like layout of the City, giving easy access to the variety of uses, and sectioning the parcels into appropriately scaled developments. In the heart of the site, along the 17th Street parkway, is a long, oval-shaped lake. The lake area is bordered by the tree-lined parkway and framed by the residential units, which mimic the long, sweeping curve of the lake and overlook the water. At each end of the area is a high-rise residential tower, further defining the space as a memorable people place.

This place begins to set the natural hierarchy of uses, whereby residences are located in the central area of the site, within reasonable walking distance of adjacent shopping, entertainment, office and recreation. The highest density of commercial space is located on the east side of the site adjacent to the freeway and the large-scale development along the Peachtree corridor. Up to five million square feet of class "A" office space, 1.5 million square feet of retail and entertainment, and 1000 hotel rooms will rise up on this most eastern portion of the site over roughly fifteen years.

The middle portion of the site has been identified as the residential village that cradles a manmade lake. 2,400 units, including 1,2, and 3 bedroom arrangements will be offered for sale and lease. Two high-rise residential towers will flank the residential village to the east and west and complementary shops (coffeehouses, convenience stores, florists, etc.) will dot the streetscape. The western portion of the site is reserved for a technology based office and research park affiliated with the Georgia Institute of Technology. Lower office densities and extensive landscaping will serve as a buffer to the neighboring communities to the north and south. One million square feet and a 200-room hotel would be distributed through this portion of the site.

The development plan proposes a mixed-use environment containing residential/commercial/office under the zoning classification of C-4 conditional, with a commercial FAR (floor-to-area ratio) of 7.0 and a residential FAR of 3.2, but with the conditioned reduction for the commercial density to 30% yielding a 2.1 FAR and a 50% reduction for residential yielding a 1.6 FAR with areas south of Sixteenth being R.5 and RG.3.

Pedestrian and Transit Supportive Land Use

A significant body of research conducted here and elsewhere in the nation indicates that the levels of density, land use mix, and pedestrian connectivity proposed in this project will result in less vehicular travel (Cervero and

Kockelman, 1997; TCRP Transit and Urban Form 1996; Frank, and Pivo, 1995) and harmful emissions than more auto dependent forms of development. Recent studies of the Atlanta and Central Puget Sound Regions revealed that households located in areas with higher connectivity (as measured by the # of blocks per hectare) and higher employment and residential density generated less NOx even after controlling for income, household size, and vehicle ownership (Frank and Stone, 1998) (see Figures 3.2 and 3.3).

These findings are critical to this effort because they suggest that the high levels of employment and residential density proposed in the project coupled with the increased connectivity that will be created in northern Midtown by the 17th Street bridge, hold significant promise as emissions reduction strategies. It is important to note that increased levels of density and land use mix without good connectivity offer little promise as a means to reduce vehicular travel demand and associated emissions. For example, the Buckhead MARTA Station Area which is approximately 5 miles to the north of the project site has relatively high levels of employment density (>150 employees per acre in many areas), has high density residential development, and two major shopping malls -- all within a one miles radius of the transit station. However, there are few sidewalks linking development with MARTA resulting in very low transit ridership relative to other stations in the system which have similar or even lower intensities of development (MARTA Ridership Data, 1997).

Regional Location

While land use patterns will arguably have an impact on the travel choices of the residents, employees, and other patrons of the project; research also demonstrates that regional transportation and air quality benefits can be accrued from infill over greenfield development. A study funded by the Environmental Protection Agency compared transportation and vehicle emissions implications of infill versus greenfield development. The draft report from this study identified an infill location and a greenfield location for the same amount and type of development within a given region and repeated the exercise for three regions of the nation -- San Diego, CA; Montgomery County, MD; and West Palm Beach, FL. The study used existing transportation and air quality models in operation in each region. The study concluded that the infill locations performed better across a set of transportation and air quality performance indicators. The three infill sites consistently resulted in lower generation of NOx. The detailed findings revealed that the infill sites in San Diego, Montgomery County, and West Palm Beach generated 42%, 31%, and 28% less NOx respectively (as measured in tons / year) than their greenfield counterparts.

Another study conducted in the Central Puget Sound Region suggest that the less central the location in which a household is located the more vehicular travel and emissions that it will generate when controlling for the level of

transit service, vehicle ownership, household size, and income (Frank and Stone, 1997). This finding was based on the usage of census tract size as a proxy for regional location.⁷ Census tract size is based upon an ideal sample size of approximately 5000 households (U.S. Census Bureau). Therefore, households located in areas with larger census tracts are at the edge of a region where development densities are sufficiently low to require more land to be traversed to capture the desired # of households. This concept is visually conveyed in Figure 3.1.⁸

LAND USE IMPACTS ON TRAVEL CHOICE AND AIR QUALITY

Area of Census Tracts in Square Miles

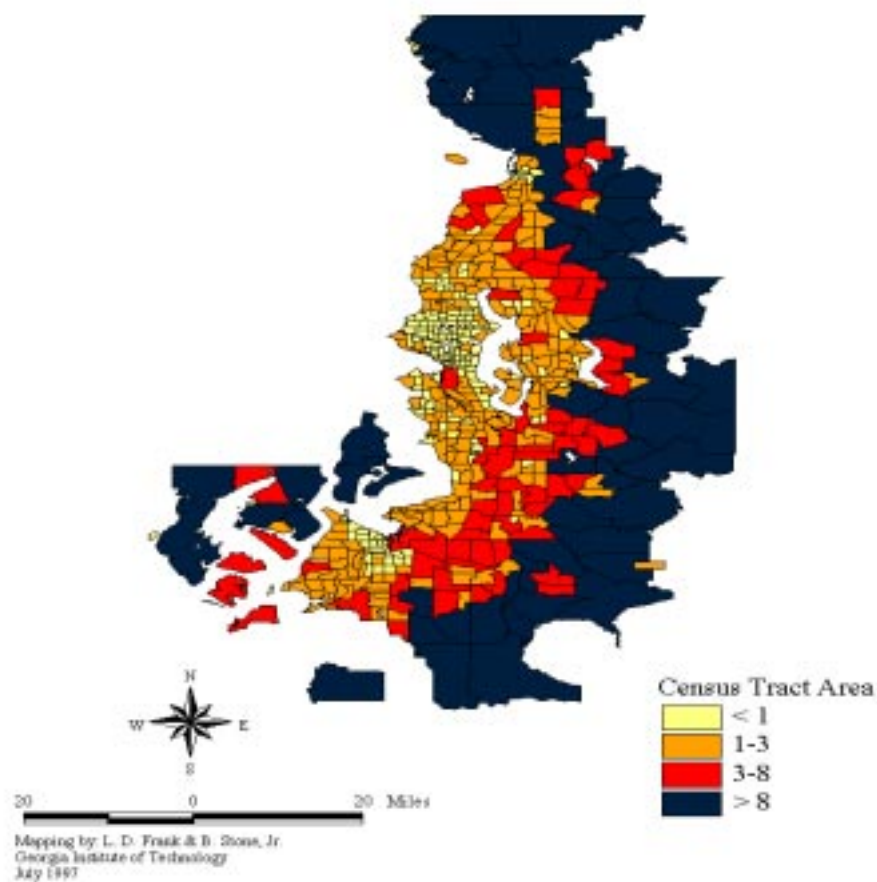


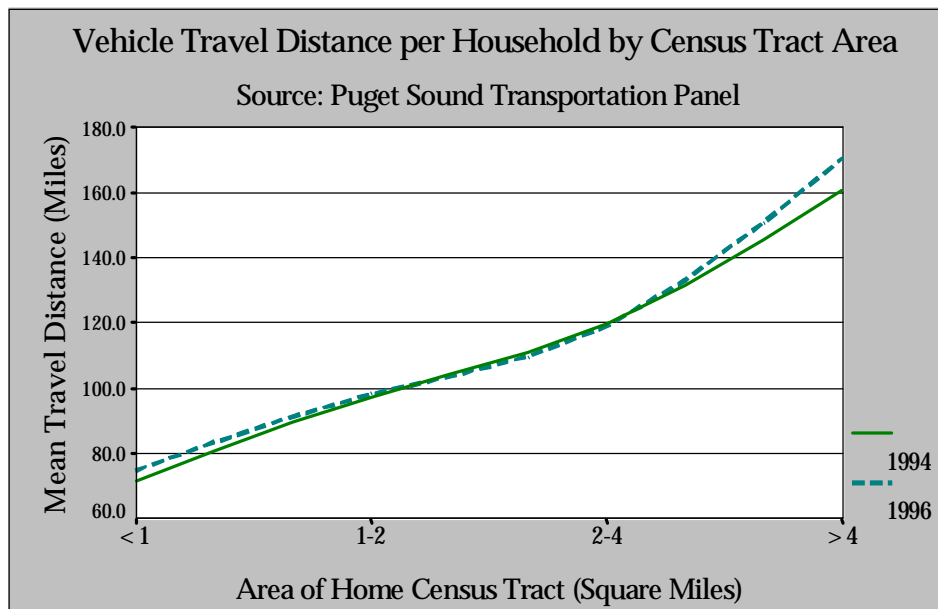
Figure 3.1 -- Census Tract Size and Regional Location

⁷ This preliminary investigation was a pre-cursor to a more detailed assessment of the effect of regional location on travel choice and emissions using the Puget Sound Transportation Panel dataset. This subsequent analysis was recently funded by the Turner foundation and is now underway in partnership with the Urban Land Institute (Frank and Dunphy, 1998).

⁸ This study of the Central Puget Sound was funded by the Washington State Department of Ecology under the 105 Program.

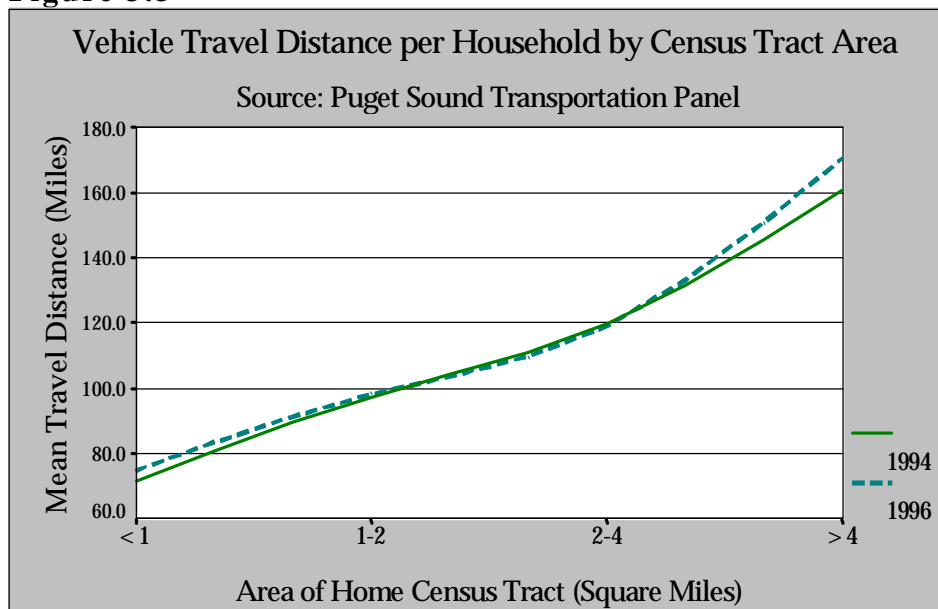
Figure 3.1 is a thematic map of the Central Puget Sound and is based upon census tract designations. This map documents the fact that census tract size increases with distance from the central cities of Tacoma, Seattle, and Everett depicted with lighter shades on the map. Figures 3.2 and 3.3 below convey that both vehicle miles of travel and emissions per household increase with distance from primary regional centers (as measured by the area of a census tract).

Figure 3.2



(Based on two days of travel)

Figure 3.3



*CO reduced by a factor of 10 and based on two days of travel.
(Emissions estimates include factoring for coldstarts and stoichiometric trip segments).

Where the EPA study documents the travel and emissions impacts related with the location of trip attractions (major destinations which include employment and commercial uses) the Puget Sound Study addresses the effects of regional location on trip producers (households). Taken collectively, these two assessments suggest that projects such as the Atlantic Steel proposal, that incorporate both trip productions and attractions in an infill context, hold significant promise for the net reduction of emissions.

Comparison of Tier 1 and Tier 2

Air Quality -- An analysis will be undertaken to determine the relative emissions that occur as a result of Tier 1 versus Tier 2 as defined above. The EPA Office of Policy and Office of Mobile Sources will be taking a lead in this effort. These two alternatives will then be compared against a baseline forecast which is currently being defined. It is the definition of the baseline condition that may have the greatest impact on the ability to demonstrate superior environmental performance of the project. In addition, it is uncertain that the current transportation and air quality models are sufficiently sensitive to detect the relative effects on travel demand and air quality of loading up the proposed development in a central zone, an outlying zone, or the baseline condition. This methodology is currently under development and will be completed in the near future.

Brownfield Cleanup -- The environmental benefits of the Brownfield Remediation associated with Tier 2 will be quantified and compared with the impacts of Tier 1 which is the current conditions of the site without remediation.

Criteria II -- Economic Benefits

There are many economic benefits of the Tier 2 project. The ability to implement Tier 2 (the proposed project) will result in a significant investment within the local economy. This investment will have a multiplier effect -- meaning that every dollar invested from outside of the economy will generate more than its original value within the local economy. This investment will not only generate short term construction jobs but will also generate newer longer term positions within various high tech and other types of firms located within the development. Another dimension of the project is the fact that infill development is equitable for populations that reside in inner cities. Demographic analyses of the Atlanta Region indicated that an enhanced tax base

resulting from the proposed project will help to fund needed services for lower income segments of the regional population.

Criteria III -- Project Stakeholders

The initial goals of Jacoby Development Inc. included involvement, input, and consensus with stakeholders of the Atlantic Steel redevelopment. Many of the project stakeholders have already been identified and have direct input into the project at the outset. The requirements of the Georgia Planning Act to model the air quality impacts of developments of regional impact when a re-zone is sought led to this process. In concert with the City of Atlanta Planning Bureau, community involvement was conducted through the designated Neighborhood Planning Unit (NPU) for Home Park. In this process, a great deal of input was obtained from other neighboring communities, the City, GDOT, and ARC. Many other stakeholders do exist and fall into three categories:

1. public agency or governmental;
2. neighboring or directly affected; and
3. the economically impacted public.

All three of these groups have sensitive and legitimate concerns. The nature of this project is very much milestone oriented or sequential. In other words, if certain items are not possible or accomplished then the project does not continue. This of course determines when, where, and who each stakeholders are and how they are approached. To date those activities are:

1. State of Georgia Environmental Protection Division – Law Engineering, Jacoby, and the GA EPD reached an agreement on how the property would be cleaned and remediated – August 1997.
2. City of Atlanta approved a rezoning request by Jacoby Development Inc. of C-4 Conditional to develop the property under a very strict set of conditions. These conditions essentially address three areas: land remediation, bridge construction and access, and size, use, and quality of development.

This portion of the process contained many of the stakeholders to this point. This sector contained both public noticed meetings and numerous private sessions to resolve the relevant issues. In summary, all of issues with the city, neighbors, and political bodies were solved favorably so that all votes were unanimous as follows:

- Neighborhood Planning Unit (NPU) E 9-0 FOR
- Zoning Review Board (ZRB) 9-0 FOR
- Zoning Committee, City of Atlanta 5-0 FOR
- Atlanta City Council 15-0 FOR
- Executed by Mayor 05/13/98

The above constituted 15 public meetings and 20 private meetings with:

- Loring Hts Neighborhood Assn.
- Home Park Neighbors Assn.
- Georgia Tech
- Midtown Alliance
- NPU E Board
- NPU E Land Committee
- Georgia Conservancy
- Coca-Cola
- NationsBank
- First Union
- Federal Reserve
- GA DOT
- Local Businesses

Certainly, the majority of time with stakeholders related to project neighbors, however regional parties were also involved. Chief among those was the Atlanta Regional Commission (ARC). It is important to note that the project meets 11 out of 11 of ARC's "Growth and Development" policies. The process discussed above has been continuous for 18 months and was carried out by the owner and the design development team.

It is contemplated that as the XL process comes about a status report will be given to all concerned and a fresh round of meetings will be staged to exchange information and ideas. In addition to the stakeholders identified to this point, provisions will be made to bring in new interested parties and incorporate their interest into the final plan. One group that will benefit from this project if it moves forward and accomplishes the milestones necessary for development includes those in the environmental justice (EJ) group. Contact with that group to date has been premature, as we did not desire to raise job or economic impact expectations before fiscal and physical parameters were in place. The probable contacts would be:

- 1.** Political Representatives
- 2.** Rev. Alexander – Antioch Church
- 3.** Neighborhood Leaders (previously identified through rezoning)

Jacoby Development Inc. and its team look forward to continuing its meetings with stakeholders. Meetings have been scheduled with project stakeholders over the past week for August 31, 1998 and September 15, 1998. Initial contact will begin immediately by letter notifying them that the XL process has begun and a status report and meetings will follow as appropriate with these and other stakeholders. These meetings will be held in local or other suitable areas, facilitated and recorded as appropriate and hopefully will produce the same results that have been achieved to date.

Criteria IV -- Pollution Prevention

It is recognized that the ability to document a superior environmental performance requires a commitment to reduce pollution throughout the activities of planning, programming, construction, and extend well into project occupancy. We are committed to work with the EPA to incorporate pollution prevention strategies throughout the development of the project. The Pollution Prevention Act of 1990 shifted the focus away from the treatment of pollutants towards waste avoidance (USEPA Office of Research Development, 1993). "Section 2 of the pollution prevention act presents a pollution prevention hierarchy as a national policy, and informs the nature of the decisions that needs to be made for an environmentally responsible development. This hierarchy reads as follows in: A Primer for Financial Analysis of Pollution Prevention Projects -- USEPA Office of Research Development, 1993):

1. pollution should be prevented or reduced at the source whenever feasible;
2. pollution that cannot be prevented should be recycled in environmentally safe manner where feasible;
3. pollution that cannot be prevented or recycled should be treated in an environmentally safe manner whenever feasible; and
4. disposal or the release into the environment should be employed only as a last resort and should be conducted in an environmentally safe manner.

Given the nature of the redevelopment that is proposed; it will be possible to focus on the top of the hierarchy which is the prevention and reduction of pollution at the source. Strategies to prevent and minimize pollution entail the selection of construction materials and sustainable building technologies that minimize energy usage. The Southface Energy Institute is a national leader in sustainable building technology and offers training and support in the Atlanta Region. We propose to work with Georgia Tech, EPA, Southface, and other interested stakeholders on the usage of applicable solutions to this multi-use project. Another area is to reduce energy consumption from heating and cooling through the siting and orientating of buildings and landscape materials in a manner that solar gain is maximized in winter and minimized in summer. Site design, grading and drainage, need to be done in a manner that slows and minimizes stormwater runoff, maximize groundwater recharge. The consumption of water can be controlled through the usage of greywater systems for landscape irrigation. The usage of indigenous plant species will be encouraged where possible to minimize irrigation requirements.

Arrangements have been made to reuse and recycle the majority of the buildings and equipment at the Atlantic Steel facility (Jacoby-Atlantic Steel Industries Sale Purchase Agreement, 1997).

Brownfield Mitigation

Media Specific

Air quality, water quality, and Resource Conservation and Recovery Act (RCRA) issues exist at the currently operated Atlantic Steel site. The required environmental permits are in place; however, there are significant environmental impacts on a continuing basis related to this industrial complex located in the inner city. Fugitive dust, asbestos, contaminated ground water, and storm water runoff are other environmental factors on this site.

The closing of the industrial complex and the development of a highly-integrated mixed-use of the property will eliminate these sources of impacts on the environment. The previously approved remediation concept will intercept ground water, manage surface water runoff, encapsulate certain contaminated soils and provide clean-closure of a RCRA site on one portion of the property. The degradation of the various environmental media on this site will be terminated and the overall environment of the community will be enhanced.

Fast-Track RCRA Cleanup

The existing RCRA site on the property has a “cap”, recovery wells, and a monitoring well system. While the ongoing remediation meets Federal and State requirements, the proposed transition of this site from an industrial use to a mixed-use, high-density project will enable the RCRA Site to be “clean-closed”. Therefore, a RCRA site in the inner city will be eliminated, instead of another 20 years of recovery and monitoring wells surrounding a “capped” hazardous waste site. This is another timely and appropriate feature of this redevelopment project.

The development of the site requires the mitigation of the existing RCRA site to the levels specified by the EPA and the GA EPD as environmentally safe for various types of activities. The proposed site development plan matches the appropriate type of land use activity with the level of cleanup that will result from the final mitigation. A plan for mitigation has been accepted by the Georgia Department of Natural Resources Environmental Protection Division.

Criteria V – Transferability

Perhaps one of the most important benefits of this project is the transferability of the methods and lessons learned to other areas of the nation. Many regions have infill development opportunities. However, factors such as perceived risk, land assemblage issues, insufficient infrastructure, and the ability to get financing often makes greenfield locations more competitive. It is our intention to have Atlantic Steel become a national model that offers a critical blend of economic and environmental benefits that are measurable at the local, subregional, and regional levels. The Tier 2 redevelopment also offers the creation and application of a methodology to air quality implications of an integrated package of land development and transportation investment actions. With much discussion in recent years over the need to link land use and transportation -- this project has the potential to be -- “the real thing.” More specifically, this project offers a demonstration where the public sector supports a transportation improvement that enables a development to take place that may offer benefits regional air quality. It is this type of planning that is required -- where the public sector begins to use its ability to shape market based decision making in the land development industry -- both over how land is developed and where development occurs.

Criteria VI – Feasibility

Project Agreements

The City of Atlanta has rezoned the site to accommodate the proposed development of a livable community. Permitting of the development is however contingent upon the approval of the 17th Street Multi-Modal Corridor. The City of Atlanta has revised its Comprehensive Development Plan to include this project. The Neighborhoods have formally and unanimously approved the Development component of the project.

Funding

The funding of the various components of the project will come from a combination of public/private sources. Obviously the vertical development of retail, residential, office, and hotel uses will be privately financed and present indicators are that this project will be highly attractive to investors. The sponsor/developer has secured funding to enter into contract with Atlantic Steel Industries for the purchase of the primary 138 acre parcel. Negotiations are currently underway with commercial, retail, entertainment, residential, and hotel development companies for equity positions in the master planned development. The Atlantic Steel Industries and Jacoby Development, Inc., encouraged by

EPA's recent interest in the Tier 2 redevelopment, recently entered into phase II testing of the site pursuant to remediation.

Infrastructure items such as water, sewer, street system, and parking structure will most probably be a local public-private "venture" through a tax allocation district or community improvement district (CID). The bridge, its ramps, and its connectors will also in all probability also be a public-private "venture". This would allow the development to proceed on a timely schedule and budget. Should the project qualify as a TCM, Federal and State funds could be appropriated and if needed, tax allocation, CID or private funds could also be contributed. In conclusion, the cost of the infrastructure, particularly the bridge, while certainly significant, is reasonable considering the overall benefits of the project. Therefore, timely funding in sufficient amounts for all parts of the project is highly likely.

Access to Technical Expertise

The sponsor of the Atlantic Steel Project XL proposal is Jacoby Development, Inc. (Jacoby). Jacoby is currently involved in three projects that merit attention based on their positive environmental performance. The first is the basis for the Project XL proposal, a brownfield remediation and redevelopment in the heart of the Atlanta region, and the second two are in Florida that deal strictly with a marine environment.

An outstanding team of architects, engineers and consultants has been assembled in order to make the Atlantic Steel redevelopment a special place to live, work, and play. Thompson, Ventulett, Stainback & Associates Architects (TVS) is a diverse practice dedicated to the creation of distinguished design through responsive, comprehensive and personal service to satisfied clients. The firm's portfolio showcases a wide array of project types – corporate headquarters, office towers, convention centers, sports arenas, performance halls, educational buildings, retail facilities and hotels. Organized around semi-autonomous design studios that guide each project from its inception to completion, TVS manages a design process that carefully balances the needs of design, technology, and business in a diligent quest for excellence. TVS's has provided the look for the Atlantic Steel redevelopment and has proved to be an essential partner for concept development.

LAW Engineering is the team member responsible for completing all Phase One and Phase Two testing and remediation necessary to complete the site's redevelopment. LAW Engineering provides cost-effective solutions, using proven technologies and innovative testing, project management, design and management consulting services. LAW offers a hands-on approach to clients of every size while providing consistency across the county or around the world.

Using its vast resources, LAW will be able to act as the single source to quantify, reduce, and manage clean-up risks.

Lawrence D. Frank, Ph.D., AICP, RLA is an Assistant Professor of City Planning at Georgia Tech. Dr. Frank's expertise focuses on the relationship between land use, transportation, and air quality. Dr. Frank has conducted several studies on the interactions between specific types of land development decisions and resulting travel and emissions. Some of this research is provided in this proposal. Dr. Frank has conducted research in the Atlanta and the Central Puget Sound Regions and has published extensively on the land use -- transportation interaction. More recently, Dr. Frank developed a methodology that allows land use strategies to be assessed in terms of their impacts on vehicle emissions. This methodology has been applied within Atlanta and Seattle under grants funded by the Turner Foundation, the Centers for Disease Control and Prevention, and the Washington State Department of Ecology. Dr. Frank will be working closely with the EPA team on the development of the infill -- greenfield air quality methodology and subsequent analysis of the air quality impacts of the project.

Moreland Altobelli Associates, Inc. (MAAI) is a multi-disciplined firm providing engineering, planning, landscape architecture, land acquisition, geotechnical, environmental and surveying services to clients. MAAI began business in 1987 and has experienced steady growth and geographic expansion. The firm now operates offices in five states. The firm excels in performing traditional civil engineering work, as well as providing complex, multi-year construction programs. Drawing upon this experience, the firm has successfully undertaken some of the region's largest capital expansion projects. Moreland Altobelli's professional staff of 380 is comprised of engineers, planners, landscape architects, appraisers, land acquisition agents, and surveyors. An in-house construction management group complements MAAI's design capabilities. This combination of talents is truly unique among consulting firms and gives MAAI the ability to handle exceedingly complex programs for its clients.

State Agency Involvement

The state of Georgia Department of Natural Resources Environmental Protection Division (EPD) has issued a permit for the remediation plan. The EPD is also working with the EPA project XL team. The Georgia DOT is working with the project team and the FHWA on the Interchange Justification Report. In addition, the Georgia Pollution Prevention Assistance Division will also be very helpful in pollution prevention aspects of the project.

Criteria VII -- Evaluation, Monitoring, and Accountability

The purpose of this section is to document specific mechanisms by which the project can be evaluated to measure superior environmental performance and required flexibility for implementation. This section is merely a placeholder and will need to be developed in greater detail before the final project agreement (FPA) is reached. The process of evaluation will require the establishment of a set of performance indicators that measure the progress made towards achievement of project objectives. These objectives will be in support of the ability to achieve a superior environmental performance. A set of objectives are provided below and performance indicators that may be used as a means of achieving these objectives. All of the objectives are characterized relative to what would likely occur in a Greenfield (Tier 1) location.

Transportation and Air Quality Objectives

- reduced auto dependence;
- increased pedestrian travel and physical activity;
- reduced vehicle emissions per household;
- enhanced access to opportunities within and adjacent to site; and
- improved non-motorized circulation in midtown;

Transportation and Air Quality Performance Indicators

(require operationalizing)

- high quality transit service as measured by travel time (utility), frequency, cost to user, safety, comfort, etc.
- interconnected pedestrian sidewalk system within/to adjacent areas
- linkage to regional bike "PATH" system
- linkage to regional HOV system
- parking amount – to encourage alternatives to driving while still enabling project marketability; parking design – limiting barrier effects to pedestrian circulation and unattractive site design; and parking location -- to the rear of establishments and/or structured, and provisions that provide priority locations for carpoolers
- employment and residential densities that enable transit and walking (see Appendix A)
- land use mix – encourage a balance of uses on the site to be measured by phase of implementation and to can be based upon the evenness of distribution of square footage of development across residential, employment, retail, and recreational uses (see Appendix A).
- connectivity – can be measured by the number of blocks per unit of area (200' – 300' block faces), number of intersections per unit of area, and the provision of direct linkages between the project site and its surroundings. (See Appendix A).

Other Objectives (indicators forthcoming)

- reduced danger of toxic exposure to contaminants;
- reduced energy consumption;
- reduced water consumption; and
- reduced waste.

VIII -- Shifting of Risk Burden

IT is the intent of the development team to ensure that the project results in a reduction of environmental risk to the immediate community, the surrounding area, and to the greater metropolitan Atlanta region. It is the intended regional benefits, in terms of transportation and air quality, that the Tier 1 and Tier 2 comparison is based upon.

APPENDIX A -- Some Notes on Travel Choice and Land Use

By:

Lawrence D. Frank

Approaches to Reducing Travel Distances

Concentrating Development

The intensification and containment of development has been a point of focus for growth management policies (DeGrove, 1994). Theoretically, increased densities reduce vehicular travel demand by reducing travel distances and providing a larger pool of potential transit riders in any one area (Parker 1994). Reductions in parking space requirements, the establishment of urban growth boundaries, tax abatement, performance zoning, and reduced requirements for mitigation in central areas are among current tools employed by planners to increase development densities (Pivo 1990; Nelson 1993). This project seeks to add to this list of tools to encourage compact infill development through the programming of a transportation investment that permits a dense development to move forward.

Densification has also been identified as one of the components used in the implementation of neo-traditional, transit-oriented, pedestrian-oriented, and mixed use development designs. These development schemes seek to create what is often referred to as "suburban centers" or "urban villages." The intent is to focus development within a central or core area as is the case with this project. Research suggests that densification of development along designated transportation corridors that link centers with high levels of transit service and the focusing of growth within centers will minimize auto-based travel. Past research has also shown density to have a positive effect on the levels of mass transit usage (Pushkarev and Zupan 1982; Stringham 1982; and Frank and Pivo 1994).

Intermixing of Land Uses

Mixed use development, also referred to as clustered development, attempts to describe the composition of uses within a given geographic area. Intermixing land uses is by no means a new concept. Prior to the establishment of a precedent for exclusionary zoning (Euclid, Ohio vs. Ambler Realty, Circa 1926) uses were most often intermixed. Mixed use or heterogeneous zoning allows compatible land uses to locate in close proximity to one another and thereby decrease the travel distances between activities (Parker 1994). As indicated above, the proposed development will be highly mixed -- both vertically with residents and office located above street level retail and horizontally with a small walkable area.

Empirical research regarding the relationship between land use mix and travel behavior suggests benefits including a decrease in vehicle based trip generation rates and the number of vehicle hours traveled (Institute of Transportation Engineers 1989; Ewing et al. 1994). The Institute of Transportation Engineers (ITE) found that intermixing land uses within the greater Denver area could reduce vehicle trip generation rates by as much as 25 percent. In another study, mixed use communities were shown to generate between 2.3 and 2.8 vehicle hours of travel compared with 3.4 for automobile oriented communities (Ewing et al. 1994). Research has also demonstrated

that automobile travel could be reduced by introducing services such as shops, banks, restaurants, and other services into office complexes -- a design concept fundamental to this proposal. According to the Institute of Transportation Engineers (ITE) Trip Generation Manual, a 100,000 square office development split into 25,000 square feet of general office space, 25,000 square feet of R&D space, 40,000 square feet of multi-family apartments, and 10,000 feet of specialty retail would cause an 18.7 percent drop in daily traffic volume (Cervero 1988) over single use designs.

Workers in mixed use developments find that they use their automobiles less when mid-day errands or lunch can be obtained where services are readily accessible. A survey of workers in suburban centers in the Houston metropolitan area found that employees are 1.6 times more likely to leave the area for lunch than those employees working in downtown areas, due to the lack of available restaurants and services (Cervero 1988). Employee surveys demonstrated the importance of automobiles to workers in performing daily errands. Unless restaurants and services are readily available, workers will continue to drive and depend on the automobile as their primary mode of travel.

Another analysis of land use mix and travel choice in the Central Puget Sound found that increased levels of land use mix is associated with a reduction in trip length and travel time for both work and shopping trips (Frank and Pivo, 1995). Land use mix was defined in this study as the evenness of distribution of the square footage of development amongst seven land use categories within a census tract.⁹ This study was unable to explain any significant variation in modal choice as a function of land use mix. Thus concluded this to be a function of the census tract scale at which measured land use mix, which is too large to capture the distances at which one would likely be willing to walk versus driving or taking transit.

Other studies have shown that mixed use development can also increase the use of transit. One of these studies found that mixed use development increased the use of nearby transit facilities by 9 percent in suburban areas and by 30 percent in central cities (Urban Land Institute 1983). A study on the effects of land use and travel demand management strategies in southern California found that drive alone shares decreased by 4.4 percent and transit increased by 3.5 percent in mixed use areas, an amount greater than areas with lower levels of land use mix (Cambridge Systematics Inc., 1994; Parsons Brinkerhoff et al. 1996).

Studies have empirically demonstrated the impact of a balance in jobs and housing on travel behavior. A study conducted in the central area of Toronto concluded that increasing the number of residential units served to offset the rising number of commuting trips. This research found that during the morning rush hour, higher residential densities resulted in 70 fewer trips for each increase of 100 people and 120 fewer trips for each addition of 100 dwelling units (Nowlan and Stewart 1991). This finding illustrates the potential for jobs-housing policies to offset future

⁹ Each of approximately 500,000 parcels within King County were aggregated into seven distinct land use categories: single family residential, multi-family residential, office, retail, recreational, industrial, and manufacturing. The proportion of development attributed to each of these seven land use categories was then divided by the total amount of development within a given tract. Based on this logarithmic measure known as an entropy index, a census tract with a perfectly even distribution of development amongst these seven categories has a higher normalized value between 0 and 1.

transportation impacts from growth and to protect the quality of residential areas. Our work in the Central Puget Sound region found that the average time for work trips ending in unbalanced census tracts was 24 percent longer than trips ending in balanced tracts (Frank 1994). In this study we used a simple means test and grouped census tracts based on a ratio of jobs to households defining balanced tract as those with a ratio nearest to 1 (0.8 - 1.2) and unbalanced tracts (<0.8 / > 1.2).

Approaches to Foster Connectivity

In recent years, urban design techniques have been receiving increasing attention as a method to alter the spatial relationships between land use and transportation systems in order to reduce automobile dependence. Prominent prototypes include neo-traditional, transit-oriented, and pedestrian-oriented development. This portion of the proposal documents each technique and findings of impacts on VMT, VHT, trip length, and the use of alternative modes of transportation.

Neo-traditional Design

Neo-traditional neighborhoods are often characterized by an interconnecting street network, mixture of uses, bicycle and pedestrian paths, grid pattern of land use, and resemble those areas developed prior to World War II. Traditional techniques attempt to provide several travel options in addition to the automobile by locating residences within walking distance or in close proximity to transit. A comparison of traditional development and modern day automobile-oriented development is provided in the following table.

Table 1 -- Traditional Neighborhood vs. Conventional Unit Development

Traditional Neighborhood Design	Conventional Suburban Development
Narrow, gridded, interconnected street network	Wide, hierarchial street network
On-street parking and parking structures	Off-street surface parking lots
Shallow setbacks	Deeper setbacks
Main street shopping centers	Shopping and strip malls
Mixture of land uses	Single uses for land parcels
Emphasizes alternate modes of transportation	Extensive use of cul-de-sacs

(Source: California Air Resource Board, 1995)

The key transportation objectives of traditional design are to reduce VMT, VHT, trip length, and to encourage travel options. Friedman, Gordon, and Peers conducted an extensive study of household travel surveys from the San Francisco Bay area and compared results between traditionally and conventionally designed neighborhoods. Estimates from these studies were then compared with actual travel data collected from residents of both neighborhood types in the Bay area. Neighborhoods defined as traditional consisted of patterns based on mixed use downtown development districts with adequate on-site parking, interconnected street networks, and were primarily developed prior to World War II. Conventional neighborhoods were considered to be those developed since 1950 with segregated land uses, hierarchy of roads, site access at only a few key points via major roadways, and relatively little transit service. Conclusions from this research include (Friedman Gordon Peers 1992):

- total daily household trip generation rates are 25% higher and auto use for all trips is 32% higher for "standard suburban" than for "traditional" communities;
- home-based work trip rates were 14% higher for "standard suburban" communities, while carpooling (9% to 7%), alternate mode usage (19% to 10%), and transit use (11% to 4%) were higher for traditional communities; and
- home-based non-work trips demonstrated a 15% higher auto-driver rate for standard designs and a 65% higher use rate of alternate modes in traditional neighborhoods.

These findings indicate the potential for neo-traditional design to reduce vehicle travel and subsequent vehicle emissions. Other studies have also indicated similar results (McNally and Ryan 1993). This study found that neo-traditional neighborhoods generate approximately 10.5% fewer miles of AM peak travel, 27% fewer total hours of vehicle operation, and are 15.5% shorter in trip length than conventional neighborhoods.

Transit-Oriented and Pedestrian-Oriented Development

Transit-Oriented Design (TOD) and Pedestrian-Oriented Design (POD) are similar to traditional neighborhood development, except that they often incorporate higher densities and possess a distinct focus toward transit accessibility. Projects involving TOD or POD designs "attempt to attract people to the transit system by creating an atmosphere which is safe, convenient, and easily accessible by foot or bike" (Olsen, 1994). As with neo-traditional design, TODs and PODs are increasingly considered methods to reduce VMT, trip generation rates, and increase the use of alternative modes of transportation, thus reducing traffic congestion and vehicle emissions. Several studies have demonstrated the effects of TOD and POD designs on travel behavior (Middlesex-Somerset-Mercer Regional Council 1992; Cambridge Systematics, Inc. 1992; Cervero and Gorham 1995; Parsons Brinkerhoff, Inc. et al 1993).

A study comparing the characteristics of transit-oriented and auto-oriented suburban neighborhoods in the San Francisco Bay area and in Southern California found that Bay area TOD neighborhoods generated 70 percent more transit trips and 120 percent more pedestrian/bicycle trips than nearby auto-oriented neighborhoods. In Southern California, this study generally found that transit oriented neighborhoods had higher walking rates and lower SOV rates. Another study focusing on developments within the San Francisco Bay area found that a compound, mixed use POD had a 10 percent higher share of non-work trips by foot, bicycle, or transit (Cervero and Radisch 1996).

A study of pedestrian and transit oriented developments within the Portland, Oregon area found that TODs could reduce vehicle trips by 7.7 percent and VMT by 13.6 percent and predicts that such developments will have 25 percent fewer home-based vehicle trips and 10 percent greater transit usage (Parsons Brinkerhoff, Inc. et al 1993). This study uses a composite variable called the "Pedestrian Environmental Factor" (PEF) to measure the pedestrian friendliness of an area based on ease of street crossings, sidewalk continuity, local street characteristics (grid vs. cul-de-sac), and topography. Findings from this study indicate that areas with higher PEF's tend to generate more transit, bicycle, and walk trips, and fewer auto trips.

List of Acronyms

TCM	Transportation Control Measure
SIP	State Implementation Plan
RTP	Regional Transportation Plan
TDM	Transportation Demand Management
TMA	Transportation Management Association
HOV	High Occupancy Vehicle
FPA	Final Project Agreement
OPP	Office of Policy and Planning
ITIP	Interim Transportation Improvement Program
CBD	Central Business District
MARTA	Metropolitan Atlanta Regional Transit Authority
NO _x	Oxides of Nitrogen
CFR	Code of Federal Regulations
EPD	Environmental Protection Division

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