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Office of Policy (2127)
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Project XL and Atlantic Steel
Supporting Environmental Excellence and Smart Growth

Urban and Economic Development Division (2127) *Summary*

From State Houses to the ballot box, Americans have shown a desire for better growth and development in their communities. Citizens want the jobs, tax base, revitalization and opportunity that growth can bring. But, they want it without the growth-induced traffic, farmland destruction, and center city disinvestment that has so often accompanied growth in the past. In short, communities are moving beyond the "growth" versus "no growth" debates of the past in search of smart growth.

Nowhere is this trend more evident than in Atlanta, Georgia. Called by some the fastest growing settlement in history, the Atlanta metropolitan region's north/south length grew from 65 miles in 1990 to 110 miles in 1997. Studies show that for each one percent growth in Atlanta's population there is a corresponding increase of 10-20% in developed land. As a result Atlanta loses approximately 50 acres of green space per day. In addition, Atlanta's ever-spreading development pattern means homes, work, schools and entertainment grow even further from one another. Longer distances mean longer drives. Atlantans now drive an average of 34 miles a day, the most in the US.

In response, Atlanta may be changing the way it grows. Increasingly, projects like Atlantic Steel—the redevelopment of 138 acres of contaminated property in Midtown Atlanta—are seen as part of the solution. Atlantic Steel uses new growth to alleviate some of Atlanta's most pressing problems. It brings tax base and jobs to the region's core. It turns a brownfield site into a new neighborhood asset and creates new housing opportunities in the city. It also increases accessibility and convenience, bringing stores closer to work, and schools closer to housing.

Projects like Atlantic Steel require partnerships and cooperation to succeed. Local zoning often will not permit smart growth developments. State infrastructure investments may be needed. Federal regulations may affect development indirectly, or even directly, as in Atlantic Steel's case. Under a traditional interpretation of EPA rules, Atlanta's current "conformity lapse" under the Clean Air Act would preclude construction of a bridge and ramps to Atlantic Steel. These elements are key to the project's success. The bridge connects the project to public transit and the ramps connect the site to the adjacent highway. Stopping their construction effectively halts the project.

However, through programs like Project XL, a regulatory flexibility program promoting environmental eXcellence and Leadership (XL), EPA is committed to removing obstacles and becoming a resource for communities in pursuit of smart growth. The Atlantic Steel XL project—a partnership between local, state, and federal government, and the private sector—demonstrates the effectiveness of this approach and its resulting environmental and transportation benefits.

This summary describes the Atlantic Steel XL project and its results. The full report, "Transportation and Environmental Analysis of the Atlantic Steel Development Proposal," is available from EPA. Contact Geoff Anderson (202 260 2769) or Tim Torma (202 260 5180) at EPA Headquarters, or Michelle Glenn (404 562 8674) at EPA Region 4 in Atlanta. The report is also available on the World Wide Web at http://yosemite.epa.gov/xl/xl_home.nsf/all/atlantic.html#documents. More information on Project XL is available on the Web at http://www.epa.gov/projectxl.

ATLANTIC STEEL: A SUMMARY

Jacoby Development Inc., a developer in Atlanta, has proposed redeveloping a 138-acre site near central Atlanta, the former home of Atlantic Steel. The site is a brownfield—that is, it contains some contamination. Figure 1 shows the site location. The development would mix residential and business uses, and include an auto and transit bridge. The bridge would re-connect the neighborhood across the interstate and provide a direct link to existing rail transit service. In addition, Jacoby has proposed ramps to improve interstate access for the project. The bridge and ramps are shown in Figure 2.

Metro Atlanta has failed to demonstrate that its regional transportation plans will not worsen or create air quality problems. As a result Atlanta is out of compliance with Clean Air Act conformity requirements and may neither (with limited exception) use federal funds to add to its highway system nor construct certain types of transportation projects that require federal approval. Under the traditional application of EPA regulations, construction of the proposed bridge and ramps would be prohibited.

Jacoby believed that *developing* the Atlantic Steel site, including the bridge and ramps, would result in fewer auto emissions than *not developing* the site. Jacoby reasoned that:

1. Atlanta will continue to grow.

2. That growth is projected to locate mainly at the region's edge.

3. This growth pattern is largely responsible for producing Atlanta's current transportation patterns, which force the average Atlanta resident to drive 34 miles a day, the most in the nation.

4. The Atlantic Steel site is an opportunity to shift some of this growth inward, increasing regional convenience and accessibility, and reducing future driving.

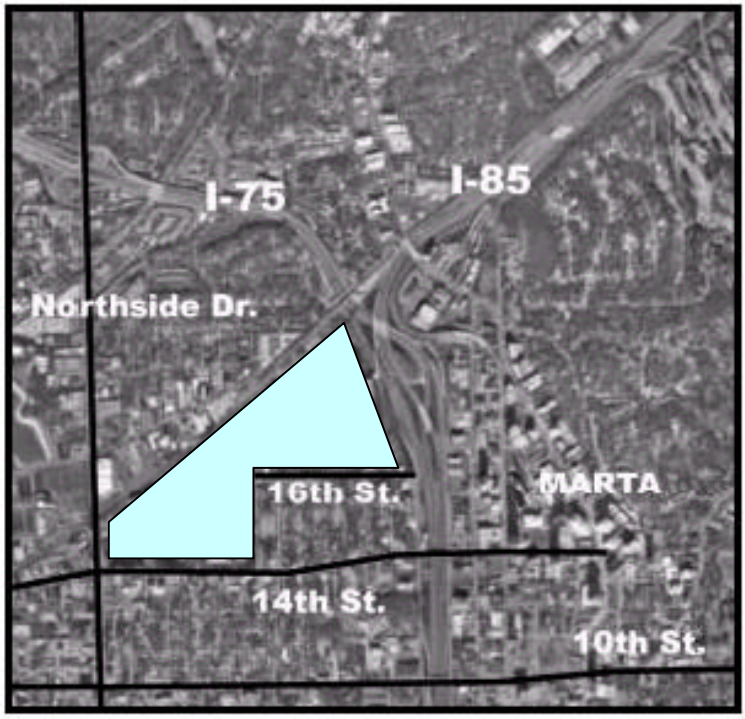


Figure 1: The Atlantic Steel site (North ⮝) The site is bounded by railroad tracks to the north, and by I-75/85 to the east, cutting it off from Midtown Atlanta.

Figure 2: The proposed bridge and ramps. From developer Project XL proposal. The feasibility of the HOV ramp is being examined.

With this reasoning, Jacoby presented the United States Environmental Protection Agency (EPA) with a straightforward proposition: Atlanta would be a healthier place with the project than without it. Because the development would be centrally located in the region and accessible without a car, it would produce less driving and less air pollution than if the same project were built on Atlanta's fringe.

Empirical data show that compact, mixed-use, transit- and pedestrian-accessible infill development does lead to less driving than the development typical in Atlanta.[1] Based on that data, EPA accepted the Atlantic Steel project as a candidate for its Project XL program. Project XL works with applicants to develop projects that promise superior environmental performance and economic efficiency in exchange for regulatory flexibility.

In consultation with stakeholders including the Federal Highway Administration, the Atlanta Regional Commission, and local citizen's groups, EPA undertook three analyses of the impacts of the Atlantic Steel proposal:

1. Regional transportation and air emissions impacts;

2. Site level travel and air, open space, brownfields, and impervious surface impacts; and

3. Local emissions hot spot impacts.

ANALYSIS 1: THE EFFECT OF LOCATION ON TRANSPORTATION AND AIR EMISSIONS

In evaluating the impact of developing the Atlantic Steel site, EPA started from two important premises. First, Atlanta will continue to grow over the next 20 years. Second, if the 138-acre Atlantic Steel site is not redeveloped, more of this growth will go to outlying areas. To analyze the transportation and emissions impacts of new development at the Atlantic Steel site, EPA compared the site with three other Atlanta area sites able to absorb projects of similar size.

EPA worked with regional stakeholders to select the following sites: Sandy Springs in the Perimeter Center area, a site near the border of Cobb and Fulton counties, and a site in south Henry County. These three sites, and the Atlantic Steel site, are shown in Figure 3.

Together, the sites capture important variables that help determine travel behavior:

Location	Development density	Regional location	MARTA rail served?
Atlantic Steel	Urban	Central	Yes
Cobb/Fulton	Suburban	Suburban	No
South Henry County	Suburban	Exurban/Rural	No
Sandy Springs	Urban	Just past the perimeter	Yes

[1] Hagler Bailly Inc., "The Transportation and Environmental Impacts of Infill versus Greenfield Development: A Comparative Case Study Analysis," prepared for US EPA, April 1998.

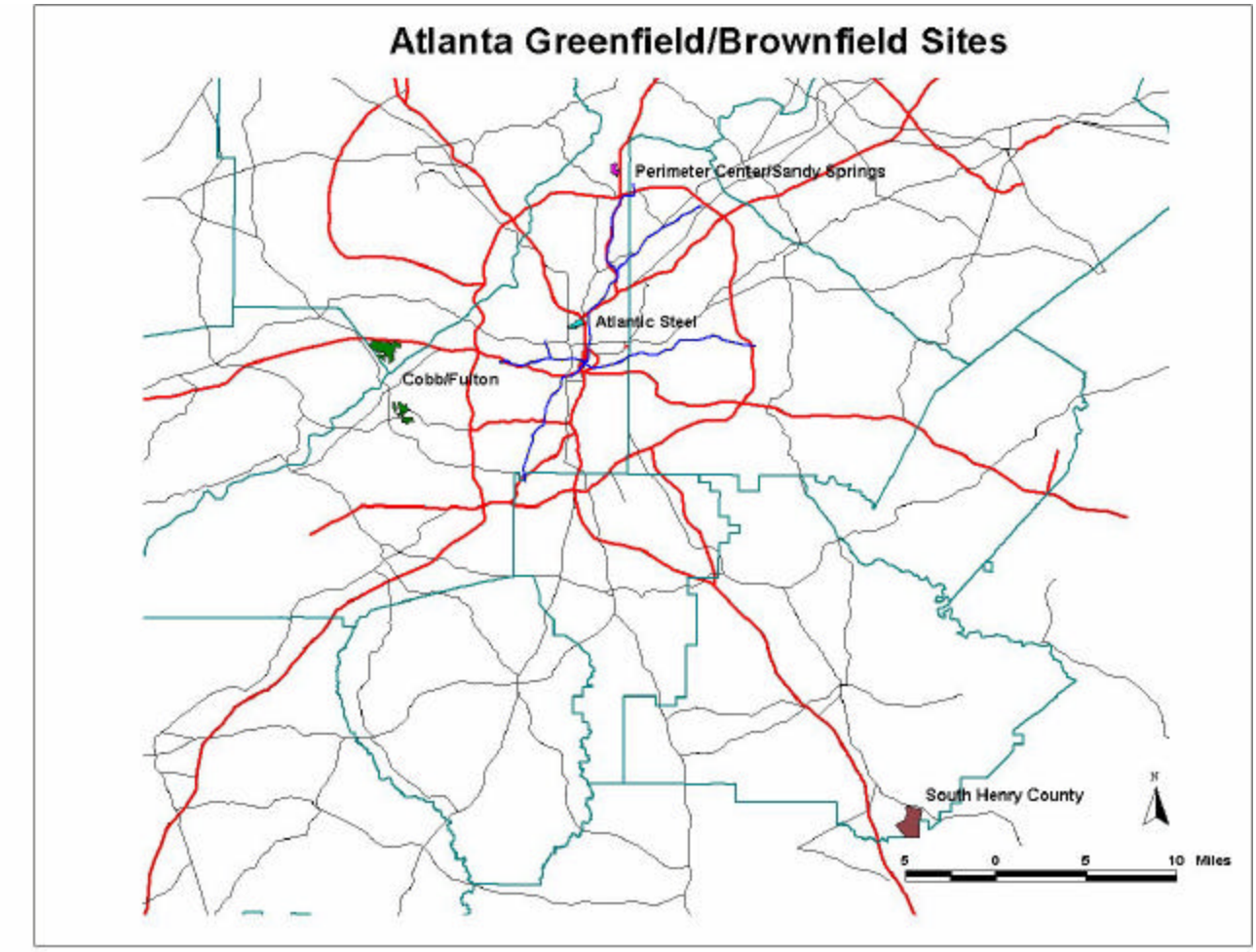
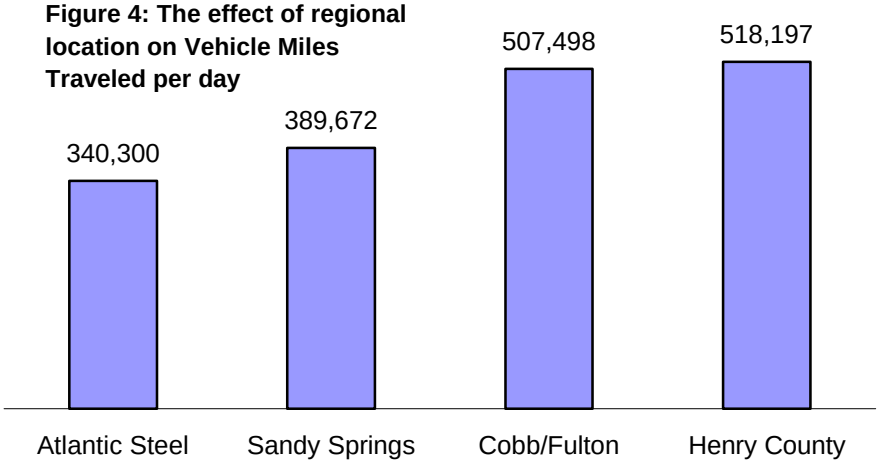


Figure 3: The four sites analyzed. The four sites represent a wide set of development options.

Although these sites do not cover all possible locational variations, they represent the available options. The South Henry and Cobb/Fulton sites were chosen because their development would be consistent with the region's projected suburban and exurban growth. The Perimeter Center/Sandy Springs site was chosen because its development would illustrate the impact of Atlantic Steel shifting growth from more unlikely locations. Thus, this site was considered a conservative point of comparison.

EPA used Atlanta's regional travel model and EPA's MOBILE 5 emissions model to analyze the likely effects of developing each site with the same amount and mix of development. Figures 4 and 5 show the results of the regional location analysis.

Figure 4: The effect of regional location on Vehicle Miles Traveled per day



Regional Vehicle Miles Traveled

Site	Regional total (VMT/day)	Associated with site (VMT/day)	Site VMT difference from AS
Atlantic Steel	139,172,200	340,300	
Sandy Springs	139,221,572	389,672	14.5%
Cobb/Fulton	139,339,398	507,498	49.1%
Henry County	139,350,097	518,197	52.3%

Using MOBILE 5, vehicle miles traveled lead to…

Regional Emissions

	NOx			VOC		
Site	Regional total (tons/day)	Associated with site (tons/day)	Site NOx difference from AS	Regional total (tons/day)	Associated with site (tons/day)	Site VOC difference from AS
Atlantic Steel	191.95	0.400		153.230	-0.390	
Sandy Springs	192.10	0.548	37.00%	154.374	0.754	293.33%
Cobb/Fulton	192.24	0.690	72.50%	154.312	0.692	277.44%
Henry County	192.27	0.724	81.00%	154.464	0.844	316.41%

Figure 5: Driving and emissions impacts of regional location

The Atlantic Steel location reduces driving and emissions substantially compared to the alternatives. The Sandy Springs location on the perimeter would produce 14% more driving. The Cobb/Fulton and Henry County locations would each produce roughly 50% more driving. These differences in driving translate into substantial differences in emissions. Because car and light truck emissions change with speed, and the miles driven in each case would be on a mix of roads with different congestion levels and speeds, the emissions differences exceed the differences in the number of miles driven.[2]

In addition to quantifying Vehicle Miles Traveled, a necessary input to emissions calculation, EPA also quantified other travel-related performance indicators of concern to project stakeholders. Results include:

Measure	Regional Average	Atlantic Steel	Sandy Springs	Cobb/Fulton	Henry County
Transit share of work trips	7.7%	27.1%	12.5%	1.8%	0%
Average work trip time	37.0 minutes	33.8	45.0	33.9	86.1

[2] Atlantic Steel shows a net decrease in VOC emissions because the new interstate ramps relieve local congestion. This emissions decrease is not expected to persist over time, because drivers will likely shift to recongest the area in a phenomenon known as induced demand. Therefore the short-term VOC reduction is not the basis for EPA's decision. Expected continued traffic growth is not likely to change the performance of alternatives relative to each other. It is this *comparative* environmental performance that is the basis for EPA's finding that developing the Atlantic Steel site would produce Superior Environmental Performance.

Accessibility: % of jobs within 30/45 minutes congested travel	n.a.	27.0%/30 min 52.1%/45 min	18.6%/30 47.6%/45	10.7%/30 32.5%/45	1.1%/30 1.6%/45

ANALYSIS 2: THE EFFECT OF SITE DESIGN ON TRAVEL AND EMISSIONS

Location affects environmental performance, but site design is also important. EPA evaluated the original Jacoby site design, and determined that the site design could be improved to reduce driving and emissions. EPA hired planners Duany Plater-Zyberk (DPZ) to help develop a site design that took advantage of those opportunities. EPA hired DPZ not only because of the firm's expertise in mixed-use, infill development, but also because its projects are commercially successful. EPA wanted recommendations that would improve performance while maintaining or enhancing the project's marketability.

EPA and DPZ held a design charette in which government agencies, prospective developers, the community—including representatives of the adjacent Home Park neighborhood—and other Atlanta stakeholders, voiced concerns about and hopes for the site. The DPZ site design responded to this input.

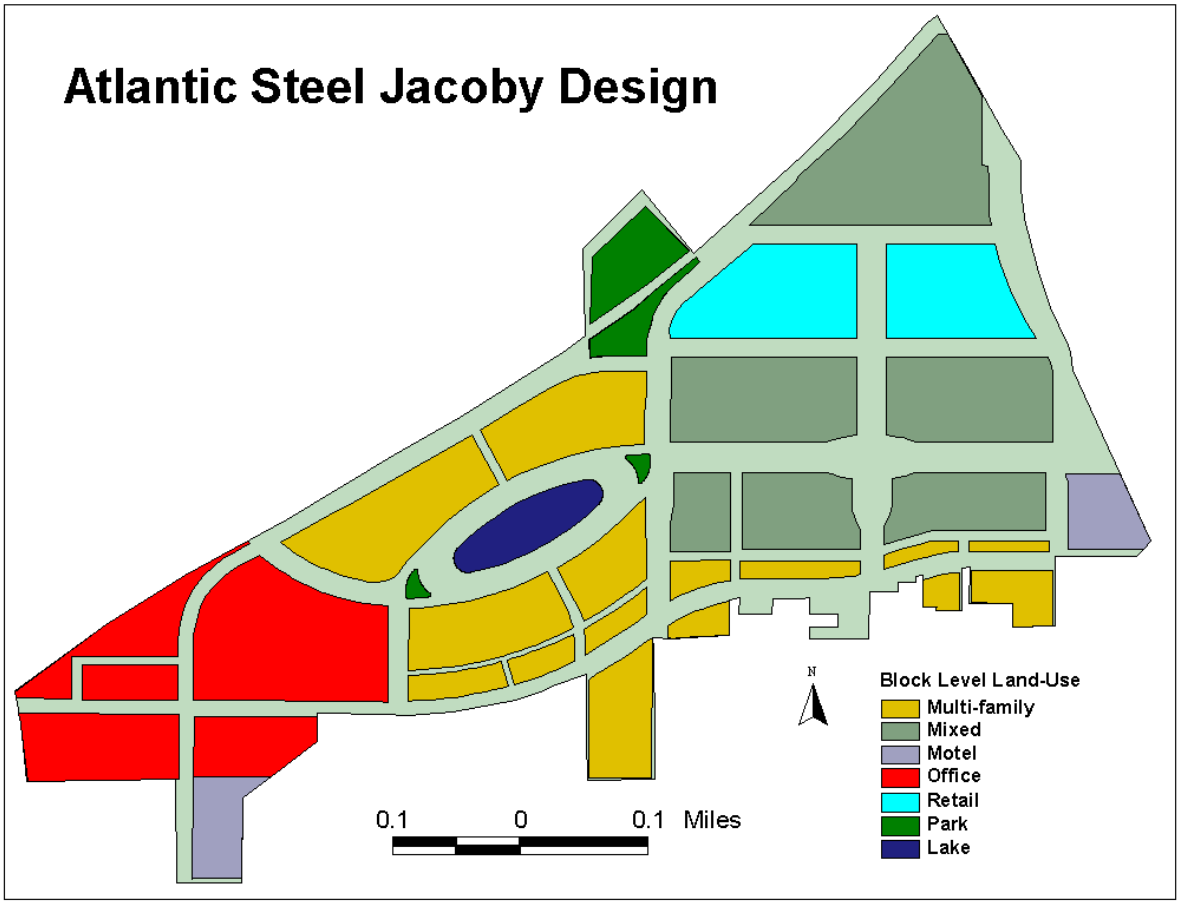


Figure 6: Atlantic Steel site, original Jacoby design

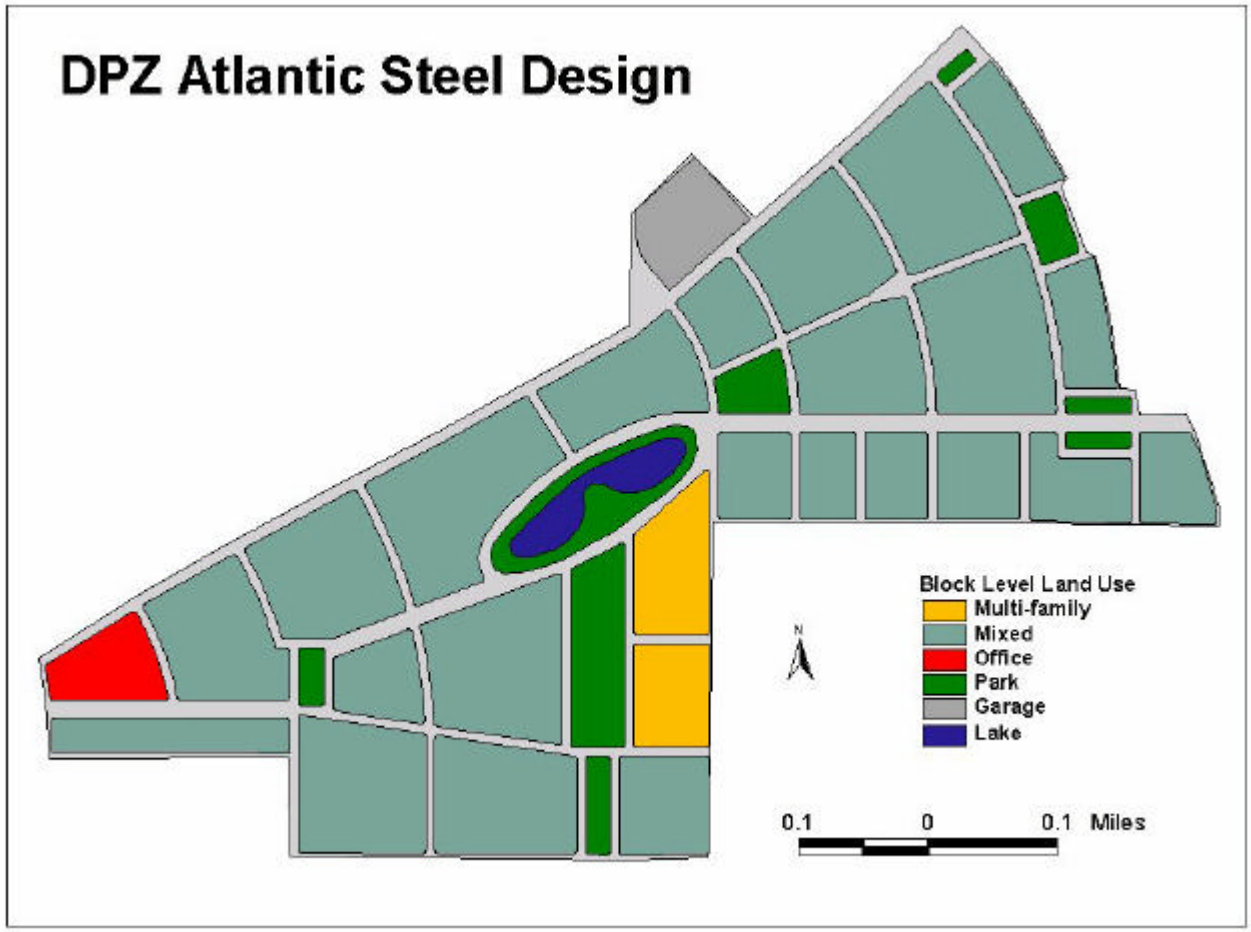


Figure 7: Atlantic Steel site, DPZ design

Jacoby incorporated many of the DPZ design elements and submitted a revised site design to EPA. Figure 6 shows the original Jacoby design, Figure 7 the DPZ design, and Figure 8 the Jacoby redesign.[3]

EPA was most interested in design differences affecting travel choices and subsequent auto emissions. Many land use and transportation planning decisions that drive transportation behavior and thus affect environmental performance are captured by what planners call the three Ds: diversity, design, and density.[4] Improvements in each have been observed to reduce auto travel.

Diversity refers to the mix of land uses: whether stores, residences, and businesses are mixed together, or far apart. Use mixing reduces auto trips by allowing trips to be made, chained, or combined without using an auto. For use mixing to be effective, destinations must be within easy walking distances of each other. *Design* refers to the choices that affect the physical and aesthetic experience of being in an area. How far are most people from transit stops? How direct is the route? Do sidewalks pass by parking lots, or are storefronts continuous along a sidewalk? *Density* refers to the concentration of housing, shops, and offices. Location of dense areas on the site is important. Concentration around transit stops, for example, is likely to reduce auto use.

[3] The three figures show slightly different site boundaries because the land anticipated to participate in the plan changed during the course of the project.

[4] See Robert Cervero and Kara Kockelman, "Travel Demand and the 3 Ds: Density, Diversity, and Design," *Transportation Research D: Transportation and Environment*, 1997.

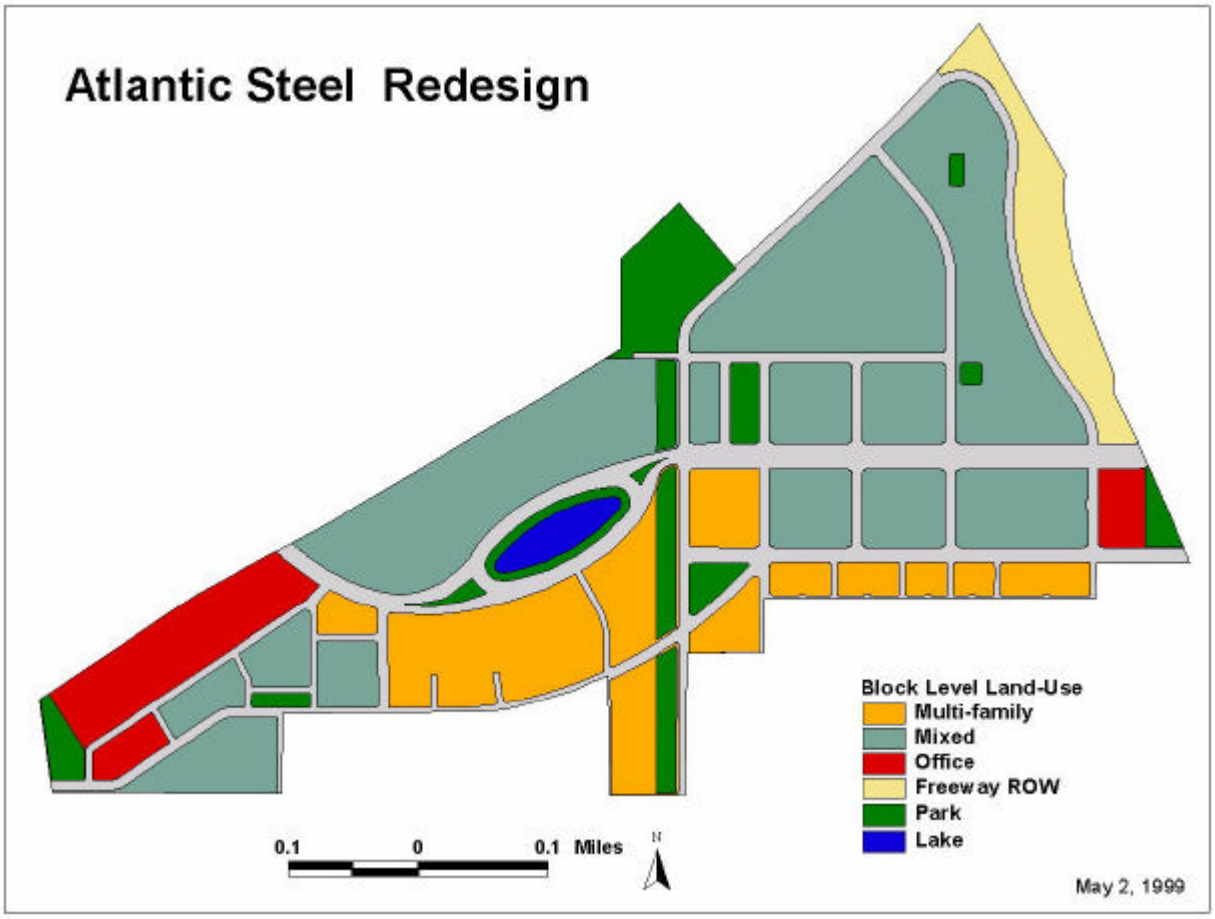


Figure 8: Atlantic Steel site, Jacoby redesign

Diversity, design, and density interact with each other, and with the transportation network. Data from around the country shows that travel choices reflect such design differences. A mixed-use, walkable development will make it likely that many people will walk to lunch and shopping during the day. But if such a development is not transit accessible, or is far from other destinations, auto use will be higher both to and from the development and within the development.

Each of the three Atlantic Steel site designs differs in important ways that affect travel and thus emissions. Compared to Jacoby's original design, the DPZ design and Jacoby redesign excel in three areas. First, they improve the mix of uses on-site by integrating them more closely. Second, they provide better connectivity on- and off-site. Third, they enhance the pedestrian environment through street design and slower traffic.

As with the regional locational analysis, EPA needed to quantitatively analyze performance differences between the site designs. To judge the effect of site design, EPA used a two-step analytic approach.

First, EPA quantified the differences among designs with INDEX® [5], a Geographic Information Systems (GIS) tool. By evaluating a detailed GIS project map, INDEX® measures spatial characteristics such as residential or employment density. These measures permit quantitative comparison of design differences.

[5] From EPA contractor Criterion Planners/Engineers, Inc.

Using data on travelers' responses to site design, EPA adjusted predictions of travel choices for each of the three Atlantic Steel site designs. As a baseline for its adjustments, EPA used the travel predictions from the earlier analysis of the original Jacoby design using TRANPLAN, the regional transportation model. TRANPLAN assumed that the Atlantic Steel site would be developed like a typical Atlanta area project. For example, when EPA calculated the "Intensity Factor" (a measure of the degree to which activity is focused on site) for Jacoby's original design it was found to be 24% greater than TRANPLAN predicted. Data show that for each 10% increase in the intensity factor, vehicle trips for work decrease by 1.2%. This means that the model overestimated the work trips by single-occupant vehicles for the original Jacoby design, so we adjusted travel accordingly.

Together, the quantification of the three Ds and adjustments to the Jacoby baseline produced the site travel estimates shown in Figure 9.

Regional Vehicle Miles Traveled

Site, design	Regional total (VMT/day)	Associated with site (VMT/day)	Site difference from generic development
Atlantic Steel, not design-adjusted	139,172,200	340,300	
AS, Jacoby	139,159,289	327,389	-3.8%
AS, DPZ	139,152,340	320,440	-5.8%
AS, Jacoby redesign	139,154,690	322,790	-5.1%

Using MOBILE 5, vehicle miles traveled lead to…

Regional Emissions

	NOx			VOC		
Site, design	Regional total (tons/day)	Associated with site (tons/day)	Site difference from generic development	Regional total (tons/day)	Associated with site (tons/day)	Site difference from generic development
Atlantic Steel, not design-adjusted	191.95	0.400		153.230	-0.390	
AS, Jacoby	191.94	0.386	-3.5%	153.216	-0.404	-3.6%
AS, DPZ	191.93	0.376	-6.0%	153.206	-0.414	-6.2%
AS, Jacoby redesign	191.93	0.381	-4.7%	153.208	-0.412	-5.8%

Figure 9: Travel and emissions impacts of site design. Jacoby's original design would have produced 327,389 miles of vehicle travel per day. The DPZ design and the Jacoby redesign would reduce VMT, with the latter producing 322,790 miles of travel per day.

ANALYSIS 3: POTENTIAL LOCAL HOTSPOT IMPACTS

Finally, EPA analyzed whether additional traffic resulting from the redevelopment of Atlantic Steel would cause Carbon Monoxide (CO) hotspots — levels of CO exceeding national environmental and safety standards. Analysis indicates that development would create no violations of EPA standards. Areas where analysis shows CO would increase tend to be those that currently report a low CO concentration.

CONCLUSION

The three analyses show that by shifting growth away from Atlanta's developing fringe and locating it downtown with access to transit, the Atlantic Steel development remediates a brownfield, reduces long term growth in vehicle miles traveled, reduces air emissions, and saves open space. In addition, no CO hot spots are created in Atlanta's Midtown neighborhoods. On the basis of these environmental outcomes, EPA is able to accept the proposal as an XL project, and exercise regulatory flexibility to allow the Atlantic Steel development to proceed. Atlantic Steel's benefits are not limited to environmental outcomes. It offers economic opportunity, improves neighborhood amenities, and creates new housing opportunities.

ATLANTIC STEEL: SMART GROWTH IN ACTION

Traffic congestion and air pollution recently cost Atlanta access to its federal highway funds and caused Hewlett-Packard to scrap plans for a second office tower. *Emerging Trends in Real Estate,* a real estate investment journal, reports: "…how the region addresses traffic congestion; inadequate infrastructure, including water/ sewer capacities; and extension of its subway system will determine whether it expands into suburban oblivion or takes on a healthy urban dynamic. The jury is out." Atlanta is responding to these challenges. Atlantic Steel may signify a broader change in Atlanta's development patterns: a change to a smarter pattern of growth, with more infill, more transportation choices, more mixed-use projects, and more accessibility and convenience.

Evidence of such a change is emerging. Governor Roy Barnes and Atlanta businesses pushed through legislation consolidating broad land use and transportation power in the new Georgia Regional Transportation Authority. BellSouth, the area's second largest employer, recently decided to relocate 13,000 employees from its 75 suburban offices to three new centers inside the perimeter and adjacent to rail transit. And Atlantic Steel is part of a wave of downtown and infill development. Mayor Bill Campbell notes that Atlanta "issued more construction building permits in the last three years than any other time in our history."

While Atlantic Steel demonstrates Atlanta's new direction, it also indicates a still broader trend. Suburbs, cities, states, and communities across the country are facing the basic question, not of *whether* to grow, but of *how*. And they are finding that to pursue smart growth, partnerships are essential. To build with a mix of uses, a developer needs the cooperation of the local government and citizen groups. To focus development in desired areas, local governments need state programs that reinforce their goals. And, in cases like Atlantic Steel, a developer and city may be in agreement and *still* need cooperation from the federal government.

THE FEDERAL ROLE IN SMART GROWTH

EPA is committed to being an effective partner for communities in their pursuit of smart growth. Atlantic Steel is an example of how EPA supports community smart growth efforts by:

- removing barriers to smart growth;
- helping communities get the information and tools to build the communities they want; and
- creating new incentives and resources for communities to successfully carry out their vision.

Clearly, development decisions are the province of state and local governments. Equally clear, as Atlantic Steel demonstrates, is the fact that the federal government directly and indirectly affects these decisions. EPA is learning from these experiences to make its policies and programs supportive of communities in new ways.