APPENDIX F

HISTORIC RESOURCES/PROGRAMMATIC AGREEMENT

APPENDIX F
HISTORIC RESOURCES

ATLANTIC STEEL INDUSTRIES, INC. (IDENTIFIED ELIGIBLE)

The former steel mill owned by Atlantic Steel Industries, Inc., had not been evaluated regarding National Register eligibility prior to Section 106 compliance for the proposed 17" Street Extension and the Atlantic Steel Redevelopment Project. The site, composed of approximately 135 acres, extends from the Norfolk Southern Railroad line south to approximately 14th Street. Originally founded in 1901 as the Atlanta Steel Hoop Company, the property remained in continuous operation until its closure in December 1998. During its peak years of operation, the mill produced more than 750,000 tons of steel annually. The site contained a mixture of large steel frame production mills, warehouses, and industrial buildings, as well as smaller frame and brick structures that accommodated mechanical and service-oriented functions. Collectively, these buildings reflected changing steel making technology during the 20th century, including the change from open hearth furnaces to electric arc furnaces in the mid-l 950s. Atlantic Steel is significant under Criterion A for its contribution to the development of the steel industry in Atlanta and the Southeast region. The property is also significant under Criterion C for architectural and engineering significance. Its various buildings reflected the evolution of the steel making process throughout nearly a century of operation.

NORFOLK SOUTHERN RAILROAD (IDENTIFIED ELIGIBLE)

The Norfolk Southern Railroad originated as the Atlanta & Charlotte Air Line Railroad that was built from 1869 to 1873. By the time the line was consolidated into the Southern Railroad in 1894, Atlanta was the strategic center of the largest railroad system in the South. The railroad tracks abutting the Atlantic Steel parcel are a portion of the Southern Railway System's main line to the Northeast (Washington). The spur line bordering the Atlantic Steel property was created as a "runaround" (bypass) in case the Brooklandville Bridge to the northeast failed. In 1982, Southern merged into the Norfolk Southern Corporation. The rail route possesses local and state significance in the areas of engineering and transportation. Under Criterion A, the Norfolk Southern Railroad line is significant because of its dominant role in the shaping of the economic and transportationhistory of the state, region, and local community. Furthermore, under Criterion C, the Norfolk Southern Railroad is significant as an example of rail transportation engineering in Georgia.

SIEMENS (IDENTIFIED ELIGIBLE)

Siemens, which occupies the southeast comer of Northside Drive and Bishop Street, is located at 1299 Northside Drive. Constructed for the Westinghouse Electric & Manufacturing Company in 1941 by the Atlanta design firm of Robert & Co., Inc., the complex originally served as a distribution facility for the power generation department, a division of Westinghouse Electric & Supply Company. Strategically located along the Southern Railroad (Norfolk Southern) line, the

2-story, brick office and warehouse complex served as the company's Southeast region headquarters, as well as housed approximately 240 employees involved in the distribution and sales of lighting and electrical control products (i.e., lamps and elevators). Constructed in the Art Moderne style, a popular style for commercial design prior to World War II, the building retains such characteristic traits as an asymmetrical streamlined form, smooth wall surfaces of brick and stone, continuous horizontal bands of windows, curved comers, and a flat roof. Siemens is significant under National Register Criterion A for its contribution to the development of the Westinghouse Electric Company as a regional corporate center in Atlanta. The property is also significant under National Register Criterion C as a notable example of the Art Moderne style both designed and located in Atlanta.

KOOL KORNER GROCERY (IDENTIFIED ELIGIBLE)

The Kool Komer Grocery, situated at the northeastern comer of 14" and State Streets, is located at 349 14" Street amidst the community of Home Park. Constructed sometime between 1927 and 1935, the 1 -story, clapboard-sided, commercial building continues to serve as a comer grocery store with a residential extension at the rear. The Kool Komer Grocery is significant under National Register Criterion A for its role as a local community landmark, as well as the various commercial and social functions it continues to fulfill within the surrounding neighborhood. The property is also significant under National Register Criterion C as an example of a historic comer store building that retains such characteristic features as exterior wood siding, a stepped parapet roofline, and period light fixtures and interior elements.

EWELL JETT HOUSE (PREVIOUSLY IDENTIFIED ELIGIBLE)

The Ewe11 Jett House is located at 1385 Spring Street, NE. Constructed some time between 1915 and 1917 for Ewe11 Jett, Atlanta's assistant chief of police and a descendant of the original settlers of Fulton County, the resource is a 2-story, frame American four-square type. Notable features include the 12-over-l double-hung sash windows, beveled siding, four large exterior end chimneys, a hipped roof with central dormer, and Craftsman-inspired paneled post supports on ashlar piers. The building remained a single-family residence until its conversion to three apartments after 1959. Currently used as commercial office space, the property is situated immediately adjacent to a large asphalt parking lot and along a highly traveled commercial thoroughfare. The Ewell-Jett House is significant under National Register Criterion C as an excellent early-20th century example of the residential American four-square type surviving in a modem commercial area. The property was previously determined eligible by the Atlanta Urban Design Commission.

THE GRANADA (PREVIOUSLY IDENTIFIED ELIGIBLE)

The Granada (or Spanish Court) Apartments, located at 1302 West Peachtree Street, are situated at the northwestern comer of 16th and West Peachtree streets. The property was originally constructed as a garden apartment complex in 1924, with design by architects Barney Havis and Augustus Constantine. The complex features three stucco Spanish Revival-style buildings enclosing a central courtyard. While the multi-paned glass double-entrance doors are adorned with twisted colonettes and decorative finials, the fenestration consists of paired and arched multi-paned windows. The flat roofs feature an elaborate cornice, mission-style parapets, and finials. Converted to the Granada Best Western Suite Hotel in 1984, the rehabilitation received an Urban Design Commission Award of Excellence in 1986. The Granada Apartments are significant under two

National Register criteria: A (for contributions to the development of middle class multi-family housing in urban Midtown in the early-20th century) and C (as an outstanding example of the Spanish Revival style). The property was previously determined eligible by the Atlanta Urban Design Commission.

THE BELVEDERE (PREVIOUSLY IDENTIFIED ELIGIBLE)

The Belvedere, located at 1384 West Peachtree Street, is situated on the western side of the street just north of the 17th Street intersection. Originally constructed as a residential hotel in 1922 by G. Lloyd Preacher, a prominent Atlanta architect, the resource is a three-story, brick, hotel-style apartment building with a rectangular plan. The principal facade is divided into three bays. A double-door entrance (topped with a stone nameplate inscribed "Belvedere") and series of triple windows are located in the central bay. The outer bays contain balconies with iron railings. The tile covered pent roof features extended eaves supported by paired brackets. Still in operation as an apartment building, The Belvedere is significant under two National Register criteria: A (for contributions to the development of middle class multi-family housing in urban Midtown in the early-20th century) and C (as a notable example of the Chicago-influenced Commercial style). The property was previously determined eligible by the Atlanta Urban Design Commission.

WINWOOD APARTMENTS (PREVIOUSLY IDENTIFIED ELIGIBLE)

The Winwood Apartments, located at 1460 West Peachtree Street, are situated on the western side of the street just south of the 19th Street intersection. Constructed in 1931, the resource is a 2-story, brick U-shaped apartment building that encloses a central courtyard. The two end entrances facing West Peachtree Street each feature a 2-story portico with elongated Neoclassical columns. The fenestrationconsists primarily of single and paired 6-over-6 light double-hung sash. The hipped roof is clad in tile and pierced with end chimneys (Photographs 26-1 and 26-2). The Winwood Apartments are significant under two National Register criteria: A (for contributions to the development of middle class multi-family housing in urban Midtown in the early-20th century) and C (as a good example of the Neoclassical style). The property was previously determined eligible by the Atlanta Urban Design Commission.

FIRST PRESBYTERIAN CHURCH (PREVIOUSLY IDENTIFIED ELIGIBLE)

The First Presbyterian Church, located at 1328 Peachtree Street, NW, is situated at the northwestern comer of 16th and Peachtree Streets. Constructed of sandstone by architect W.T. Downing, the Gothic building was completed in 1919 and replaced an earlier structure on Marietta Street. In addition to a bell tower and an adjacent rectory, the resource incorporates several prominent rear additions that extend west to the intersection of Lombardy Way and 16th Street. These additions clearly express the expanding needs and size of the congregation. The interior of the church features remarkable stained glass windows illustrating Biblical themes and designed by the Tiffany Studio of New York and the D'Ascenzo and Willett Studios of Philadelphia. Also of note is the baptismal font from the ruins of the Double Church of St. John at Ephesus in Greece. In 1922, the resource was the first church in the South to broadcast religious services in conjunction with WSB radio. The First Presbyterian Church is significant under two National Register criteria: A (for historical contributions in introducing broadcasts of services throughout the Southeast in the

early-20th century) and C (as a notable example of the Gothic style). The property was previously determined eligible by the Atlanta Urban Design Commission.

MITCHELL KING HOUSE (PREVIOUSLY IDENTIFIED ELIGIBLE)

The Mitchell King House, located at 1382 Peachtree Street, NW, is situated at the southwestern comer of 17th and Peachtree Streets in the Pershing Point neighborhood. Built for the King family in 1912 by J.L. Hiers, the building is regarded as "the last house on Peachtree Street." The two-story, brick resource features elements of the Craftsman style (e.g., 6-over-l light double-hung sash windows, exposed rafter tails, bracketed overhangs) and the Tudor Revival style (e.g., crenellated bay tower and ornament, multi-pane windows). A private residence until Spring 1980, the architectural firm of Nix, Mann & Associates renovated the building for conversion to office space. The firm, which received an Urban Design Commission Award of Excellence in 1982 for its rehabilitation efforts, still occupies the building. The Mitchell King House is significant under National Register Criterion C as a notable early-20th century example of a Craftsman- and Tudor Revival-inspired residence surviving in a modem commercial area. The property was previously determined eligible by the Atlanta Urban Design Commission.

THE CASTLE (PREVIOUSLY IDENTIFIED ELIGIBLE)

The Castle, also known as "Fort Peace," is located at 87 15th Street NW between Lombardy Way and Peachtree Street. Designed and constructed as a single-family residence in 1910 by its original owner Ferdinand McMillan, the property is an eclectic mixture of architectural styles and building materials. Resting on a massive, medieval-inspired, 2-story granite foundation, the frame cross-gable dwelling rises an additional 2 ½ stories in height. Unique features of the building include its Victorian fish-scale shingle wall treatment and decorative wooden brackets and balustrades, Corinthian column and brick pillar porch supports, Asian-influenced turret, and ornamental plaster and stone interior finishes and detailing. Following McMillan's death in 1925, the property subsequently served as a boarding house, the headquarters of the Atlanta Theater Guild, as well as the host of various art- and theater-related groups in Atlanta until the 1970s. The Castle underwent renovations in 1990 after a period of neglect, and is currently undergoing redevelopment efforts sponsored by AT&T. The Castle is significant under two National Register Criteria: A (for cultural contributions to the Atlanta arts community) and C (as an unusual example of numerous architectural styles). The property previously was determined eligible by the Atlanta Urban Design Commission.

RHODES HALL (LISTED IN NATIONAL REGISTER)

Rhodes Hall, which currently serves as the headquarters of the Georgia Trust for Historic Preservation, is located at 1516 Peachtree Street NW. Architect Willis F. Denny designed the Richardsonian Romanesque building in 1904 as the residence of Amos Giles Rhodes. Constructed entirely of rough-faced Stone Mountain granite, the asymmetrical castle-like structure features an arcaded portico, 4-story tower, and a turret. Deeded to the state of Georgia in 1929, Rhodes Hall was listed in the National Register of Historic Places in 1974.

GARRISON APARTMENTS (LISTED IN NATIONAL REGISTER)

Garrison Apartments, now known as Reid House, are located at 1325-1327 Peachtree Street, NE. Constructed in 1924 and designed by classical architect Philip Trammell Shutze, the 9-story, brick building was Atlanta's third luxury apartment building. The Garrison Apartments underwent a $2 million renovation and conversion to condominiums in 1974. The property was listed in the National Register of Historic Places in 1979.

ANSLEY PARK HISTORIC DISTRICT (LISTED IN NATIONAL REGISTER)

The Ansley Park Historic District, located east of commercial Peachtree Street, is an early-20th century residential neighborhood comprised of approximately 275 acres and nearly 600 homes, several apartment buildings, and the First Church of Christ Scientist. Developed in four stages between 1904 and 19 13, the neighborhood was largely completed by 1930. The rolling terrain, open parks, and curvilinear streets inspired by the landscape tradition of Frederick Law Olmsted provide the setting for this planned suburban community. Houses display a range of architectural styles, including Colonial Revival, Federal, Neoclassical, Tudor, Victorian, Prairie, and Craftsman. Ansley Park was listed in the National Register of Historic Places in 1979.

ATLANTA WATERWORKS HEMPHILL AVENUE STATION (LISTED IN NATIONAL REGISTER)

The Atlanta Waterworks Hemphill Avenue Station is located at 1210 Hemphill Avenue NW. As Atlanta's second waterworks complex constructed between January 1892 and July 1893, the brick pumping station was designed by Robert M. Clayton and William G. Richards. In addition to providing the city with a permanent water supply, the resource is a notable example of the late-Victorian style as applied to an industrial complex. The Atlanta Waterworks Hemphill Avenue Station was listed in the National Register of Historic Places in 1978.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTAFEDERALCENTER
61 FORSYTH STREET
ATLANTA. GEORGIA 30303-8960

JAN 0 3 2000

4EAD/OEA

Dr. Richard Cloues
Deputy State Historic Preservation Officer
Georgia Department of Natural Resources
Historic Preservation Division
500 The Healey Building
57 Forsyth Street, N.W.
Atlanta, Georgia 30303

SUBJECT: Atlantic Steel Redevelopment Project - Project No. HP9908 1 O-O 10
Final Programmatic Agreement

Dear Dr. Cloues:

Enclosed is an original of the final executed Programmatic Agreement for the Atlantic Steel Redevelopment Project in Atlanta, Georgia. Thank you for your help in finalizing and expediting signature of the Agreement. EPA looks forward to working with you on the remaining issues related to completion of the Section 106 process for this project. If you have questions about anything related to the Agreement, please call Ben West of my staff at (404) 562-9643.

Sincerely,

Heinz Mueller

Heinz J. Mueller, Chief
Office of Environmental Assessment
Environmental Accountability Division

Enclosure

cc: Douglas Young -Atlanta Urban Design Commission
Michael Rose – Atlanta History Center
Hilbum Hillestad – Jacoby Development, Inc.
Neil Harmon-Atlantic Steel Industries, Inc.
Chris Martin-Parsons Engineering Science

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTAFEDERALCENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

PROGRAMMATIC AGREEMENT AMONG THE U.S. ENVIRONMENTAL PROTECTION AGENCY AND THE GEORGIA STATE HISTORIC PRESERVATION OFFICER REGARDING IMPLEMENTATION OF THE ATLANTIC STEEL REDEVELOPMENT PROJECT N ATLANTA, GEORGIA

WHEREAS, the U.S. Environmental Protection Agency (EPA) is involved in the undertaking known as the Atlantic Steel Redevelopment Project (hereafter Project), consisting of proposed remediatioo and redevelopment of an approximately 138-acre former steel mill site currently owned by Atlantic Steel Industries, Inc. in Atlanta, Georgia; the proposed redevelopment includes high and mid-rise residential areas, retail areas, hotels, office space, and parking; project plans include a new 17" Street Bridge that would cross Interstate 75/85 and other related road improvements as shown in the conceptual development plan provided in Appendix A; and

WHEREAS, the EPA is preparing an Environmental Assessment (EA) for the Atlantic Steel Redevelopment Project, in accordance with the National Environmental Policy Act of 1969 (NEPA); EPA is involved with this project through its Project XL Program which stands for "excellence and Leadership" and encourages companies and communities to come forward with new approaches that have the potential to advance environmental goals more effectively and efficiently than have been achieved using traditional regulatory tools (see Appendix A); and

WHEREAS, At!aotis 16th, L.L.C., a developer in Atlanta, is participating with EPA in its Project XL and is the primary developer responsible for implementation of the redevelopment plan; and

WHEREAS, the EPA has the responsibility to ensure that the conditions of this Agreement will be implemented; and

WHEREAS, the EPA has identified the former steel mill (hereafter Atlantic Steel) currently occupied by Atlantic Steel Industries, Inc., as a property eligible for listing in the National Register; and

WHEREAS, Atlantic Steel Industries, Inc., Atlantis 16th, L.L.C., the Georgia Department of Natural Resources, Environmental Protection Division, and EPA have determined, after consideration of avoidance and other minimization alternatives, that demolition of the former steel mill is a necessary component of environmental remediation and redevelopment of the site; and

WHEREAS, the EPA has determined that demolition of buildings associated with the remediatioo of Atlantic Steel constitutes an adverse effect on this historic property; however, until final project plans are developed, primarily those related to off-site aspects of the redevelopment project, it is

not possible at this time to fully assess the affects to historic properties not contained within the Atlantic Steel site, but within the area of potential effects; and

WHEREAS, the EPA has consulted ith the Georgia State Historic Preservation Officer (SHPO) and the Advisory Council on Historic Preservation (Council) pursuant to 36 CFR Part 800.14(b) of the regulations implementing Section 106 of the NHPA; and

WHEREAS, the EPA has identified the Atlanta History Center (AHC) and the Atlanta Urban Design Commission (AUDC) as potential consulting parties in accordance with 36 CFR 800.2(a)(4) which have been invited to concur in this Agreement; and

WHEREAS, the EPA has conducted public notification and public involvement about the Project, including planned efforts to identify historic properties, through its Project XL and NEPA scoping and environmental analysis process for the Project, as encouraged by 36 CFR 800.2(a)(4); and

WHEREAS, consultation revealed that Atlantic Steel Industries, Inc., has, over a period of several years, taken several measures to preserve its heritage at various off-site locations (see Appendix B), including: preservation of selected structures, machinery, and buildings by transfer or sale to various museums, including the Atlanta History Center, The Railroad Museum in Savannah, the Southeastern Railway Museum in Duluth, Georgia, and the Carter Machine Company in Toccoa, Georgia; preservation of company documentary records, photographs, engineering drawings, and other related documents through transfer to the Atlanta History Center for storage and display; support of other interpretive efforts including two books documenting the company's history and a professional photographic exhibit at Georgia Institute of Technology in 1999; plans for creation of a permanent exhibition space celebrating the company's history in the redevelopment plan; and plans for the integration of selected tools and pieces of machinery in the redevelopment plan (see Appendix B); and

WHEREAS, the agencies and organizations listed in Appendix C have been identified as poteotiahy interested parties and either have been contacted by the EPA as part of its scoping process under NEPA or will be contacted shortly in accordance with 36 CFR 800.3(f) in order to identify potential consulting parties and invite their participation in the Section 106 process; specific coordination with Indian tribes and additional public involvement are discussed in tbe Stipulations below; and

WHEREAS, for the purposes of this Agreement, the definitions found at 36 CFR 800.16 are applicable; and

NOW, THEREFORE, the EPA, the SHPO, and the Council agree that the Project will be implemented in accordance with the following stipulations:

STIPULATIONS

The EPA will ensure that the following measures are carried out:

I. ADMINISTRATIVE STIPULATIONS

A. Professional Qualifications: AU studies conducted under the terms of this Agreement will be carried out or directly supervised by appropriately trained persons who meet the Secretaty of the Interior's Professional Qualification Standards (48 Fed. Reg. 44738) for the particular field of study in which they are working. Should the EPA hire new personnel for the purposes of implementing the terms of this Agreement, the EPA shall forward copies of the professional qualifications of such persons to the SHPO for its review. The SHPO shall provide written comments within ten days.

B. The signing and concurring parties to this Agreement agree to perform their respective obligations, including the execution and delivery of any documents or approvals as may be necessary or appropriate, in a timely fashion consistent with the terms and provisions of this Agreement.

Where a specific number of days is specified for review and comment and/or approval, comments shall be provided in written form within the specified number of days following receipt of the documents. Failure to respond within this time frame will constitute concurrence on the part of the reviewing oartv.

II. TREATMENT OF HISTORIC PROPERTIES

A. Treatment of Atlantic Steel Site (On-Site Properties)

1. Photographic Recordation Plan

The EPA, in consultation with the SHPO, AHC, and AUDC staff, will develop and implement a photographic recordatidn plan for Atlantic Steel prior to demolition and site remediation activities. The plan shall include large-format photographic recordation that will be performed by a professional photographer experienced in performing Historic American Building Survey (HABS)/Historic American Engineering Record (HAER) photographic documentation to National Park Service standards. The photographic recordation plan will be developed by the EPA and submitted to the SHPO for review and approval, and to the AHC and AUDC staff for review and comment. AU reviewing parties shall provide written comments or acceptance of the photographic recordation plan within ten days after receipt. Demolition of any part of Atlantic Steel will not begin until the

recordation plan has been approved by the SHPO. It is anticipated that *the* recordation plan will include a phased approach of photographic documentation to allow Atlantic Steel Industries, Inc. and Atlantis 16th, L.L.C. to demolish certain buildings, while others are still being recorded and documented. AU photographic products for a specific building or group of buildings will be presented to the SHPO for review and approval prior to the demolition of such building or group of buildiigs. SHPO shall provide comments or acceptance of the photographs within five days after receipt.

2. Outreach and Public Education

The EPA and Atlantis 16th, L.L.C. shall ensure that information gathered in accordance with stipulations contained in this Agreement and related to the history of the Atlantic Steel site is used to produce public information materials. EPA and Atlantis 16th, L.L.C., in consultation with the SHPO, AHC, and AUDC staff, will develop and implement an outreach and public education plan for the Atlantic Steel Redevelopment project. The plan will focus on public education approaches that benefit preservation in a larger context and the community as a whole. At a minimum the following will be considered:

– Development of oral history of Atlantic Steel site
– Development of a visitor's center/interpretive center as part of the redevelopment plan
– Educational video and other publications documenting various aspects of Atlantic Steel and/or its changes through history
– Reuse and/or relocation of either historic buildings, machinery, or steel making products to be part of either on-site or off-site exhibits
– Publication of appropriate research material

B. Treatment of Other Historic Properties (Off-Site Properties) Identified During the Section 106 Process

Any other historic properties, not located on the Atlantic Steel site, determined to experience an adverse effect from the Project will be addressed in accordance with 36 CFR 800 and as stated below in Item III (Continuation of the Section 106 Process for the Project).

III. CONTINUATION OF THE SECTION 106 PROCESS FOR THE PROJECT

The EPA will comply with the requirements of 36 CFR 800 regarding public involvement, identification of historic properties, effects assessment, and treatment of properties that

may experience an adverse effect from the Project

A. Historic Architectural Resources

"Historic architectural resources" include buildings, structures, objects, districts and landscapes listed in, or eligible for listing in, the National Register of Historic Places. The EPA will assess the potential for historic architectural resources within the Project's area of potential effects in accordance with 36 CFR 800. This will include on-site examination by a professional architectural historian meeting the qualification standards contained in 36 CFR 61, Appendix A, review of existing historic maps, previous historic investigations in the Project vicinity, and other pertinent documentary data. The EPA shall submit to the SHPO and AUDC staff, for review and comment, an Identification/Effects Assessment Report for the Project. The report will include discussions of: Description of the Undertaking; Area of Potential Effect (APE); Efforts to Identify Historic Properties; Affected Historic Properties; and Adverse Effects. AU reviewing parties shall provide written comments within ten days after receipt. The EPA shall consult with the SHPO, the concurring parties, and any other consulting parties to develop treatment strategies for historic architectural resources that will be adversely affected by the Project. Resolution of any adverse effects will follow 36 CFR 800.6. EPA anticipates development of specific Memorandum of Understanding (MOU) to document how the adverse effects will be resolved. The MOU will be developed within the context of this Agreement and will serve as the instrument by which all parties will agree to final resolution of any adverse effects.

B. Archeological Resources

"Archeological resources" include prehistoric or historic archeological resources listed in, or eligible for listing in, the National Register of Historic Places. The EPA will assess the potential for archeological resources within the Project's area of physical disturbance in accordance with 36 CFR 800. This will include on-site examination by a professional archeologist meeting the qualification standards contained in 36 CFR 61, Appendix A and review of existing geophysical data, historic maps, previous archeological investigations in the Project vicinity, and other pertinent documentary data. Results will be submitted to the SHPO and pertinent consulting parties for review and comment. The SHPO shall provide written comments within ten days after receipt. Any potential subsurface testing and evaluation of significance will be determined through subsequent consultation in accordance with 36 CFR 800. The EPA shall consult with the SHPO and any identified consulting parties to develop treatment strategies for any archeological resources that will be adversely affected by the Project. Resolution of any adverse effects will follow 36 CFR 800.6. EPA anticipates development of specific Memorandum of Understanding (MOU) to document how the adverse effects will

be resolved. The MOU will be developed within the context of this Agreement and will serve as the instrument by which all parties will agree to final resolution of any adverse effects.

Iv. TRIBAL COORDINATION

EPA has identified the Indian tribes listed in Appendix C as groups that might attach religious and cultural significance to historic properties in the area of potential effects. In accordance with 36 CFR 800.4(a)(4), EPA will solicit any information from these tnbes to assist the agency in identifying properties which may be of *religious* and cultural significance to them and may be eligible for the National Register. Based on the results of this coordination, EPA will complete an effects assessment and identify treatment of these properties to determine if they may experience an adverse effect from the Project. Further coordination with the Indian tribes will follow 36 CFR 800.4 through 36 CFR 800.6. Should any issues of concern be raised by Indian tribes about the identification of, evaluation of or assessment of effects on these historic properties, EPA will notify the Council of these concerns and invite their participation in the 106 process.

V. PUBLIC PARTICIPATION

A. Continuation of Public Outreach

EPA and Atlantis 16th, L.L.C. have participated in a number of public stakeholder meetings to discuss the project. EPA and Atlantis 16th, L.L.C. have also participated in meetings with an Environmental Justice Focus Group and several meetings regarding the proposed bridge at the invitation of the City of Atlanta and/or the Georgia Department of Transportation and the Atlanta Regional Commission. EPA received valuable feedback on the project from national and local environmental and transportation groups and other interested organizations and individuals, as part of its Project XL and NEPA scoping processes.

The EPA will integrate consideration of Project effects on historic properties into its NEPA environmental analysis process. The EPA will hold public meetings for purposes of fulfilling requirements of NEPA and NHPA and will include updates on the status of the identification and evaluation process for historic properties. Future public notices shall inform the public of their opportunity to comment pursuant to Section 106 of the NHPA.

B. Review of Public Objections

At any time during implementation of the measures stipulated in this Agreement should a member of the public raise an objection to any such measure or its manner of implementation, the EPA shall take the objection into account and consult as

needed with the objecting party, pertinent consulting parties, and the SHPO to resolve the objection.

VI. AMENDMENTS

Any party to this Agreement may request that it be amended, whereupon the parties will consult in accordance with 36 CFR Part 800.13 to consider such amendment.

VII. DISPUTE RESOLUTION

Should the SHPO object within 20 days to any plans/specifications provided for review or any actions proposed pursuant to this Agreement, the EPA shall consult with the SHPO to resolve the objection. If the EPA determines that the objection cannot be resolved, the EPA shall forward all documentation relevant to the dispute to the Council. Within 30 days after receipt of all pertinent documentation, the Council will provide the EPA with recommendations which the EPA will take into account, in accordance with 36 CFR 800.6(c)(2), in reaching a final decision regarding the dispute. The EPA shall report its final decision to the Council within 15 days.

Any recommendation or comment provided by the Council will be understood to pertain only to the subject of the dispute; the EPA's responsibility to carry out all actions under this agreement that are not the subject of the dispute will remain unchanged.

VIII. FAILURE TO CARRY OUT THE TERMS OF THIS AGREEMENT

In the event that the EPA does not carry out the terms of this agreement, the EPA will comply with 36 CFR 800.4 through 36 CFR 800.6 with regard to the Project.

IX. SIGNATORIES

Execution and implementation of this Programmatic Agreement evidences that the EPA has afforded the Council a reasonable opportunity to comment on the Atlantic Steel Redevelopment Project and that the EPA has taken into account the Project's effects to historic properties.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, REGION IV

By: _____ Date: 12/13/99
Name: Heinz Mueller
Title: Chief, Office of Environmental Assessment

GEORGIA STATE HISTORIC PRESERVATION OFFICER

By: _____ Date: 12/13/99
Name: W. Ray Luce
Title: Division Director and Deputy State HistoricPreservation Officer

CONCUR:

~~JACOBY DEVELOPMENT, INC.~~ ATLANTIS 16th L.L.C.

By: _____ Date: 12-17-99
Name: James J. Jacoby
Title: President

ATLANTA HISTORY CENTER

By: _____ Date: 12/30/99
Name: Michael Rose
Title: Interim Director, Atlanta History Center Archives

ATLANTA URBAN DESIGN COMMISSION

By: _____ Date: 12/16/99
Name: Karen Huebner
Title: Executive Director

LIST OF APPENDICES

Appendix A: Notice of Initiation of Environmental Assessment Process for the Atlantic Steel Redevelopment Project (with project map attached)

Appendix B: Letter from Atlantic Steel Industries, Inc. to EPA

Appendix C: List of Interested Parties

APPENDIX A

Notice of the Environmental Assessment Process

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

AUG 0 [illegible] 1999

NOTICE OF INITIATION OF ENVIRONMENTAL ASSESSMENT PROCESS for the ATLANTIC STEEL REDEVELOPMENT PROJECT

To Interested Agencies, Officials, Public Groups and Individuals:

Jacoby Development, Inc., a developer in Atlanta, Georgia, has proposed redevelopment of a 138-acre former steel mill site currently owned by Atlantic Steel Corporation in Atlanta's Midtown district. The proposed redevelopment includes high and mid-rise residential areas, retail center areas, hotels, general and high tech office space, and parking. Project plans include construction of a multi-modal (cars, pedestrians, bicycles, mass transit) bridge at 17th Street that would cross Interstate 75/85 and provide access to the site as well as connecting the site to the nearby Arts Center Metropolitan Atlanta Rapid Transit Authority (MARTA) rail station. In addition to the bridge, there would be new access ramps for I-75185 northbound traffic for 17th Street, reconstruction of existing southbound exits on I-75 and I-85 for 10th/14th Street to provide access to 17th Street, and other surface street roadway improvements adjacent to the project area. Figure 1 shows the location of the project and a conceptual development plan. Figure 2 shows a generalized cross-section of the proposed 17" Street bridge. The proposed Atlantic Steel development is projected to add approximately 2 1,000 jobs and 7,500 residents to the Midtown area,

The Environmental Protection Agency (EPA) is involved with this project through its Project XL Program Project XL, which stands for "excellence and Leadership," encourages companies and communities to come forward with new approaches that have the potential to advance environmental goals more effectively and efficiently than have been achieved using traditional regulatory tools. Jacoby is participating in Project XL. for the redevelopment project because neither the 17th Street Bridge nor the associated I-75185 access ramps would be able to proceed without the regulatory flexibility allowed by EPA under its XL Program. The specific regulatory flexibility includes the consideration of the entire redevelopment project, including the bridge, as a Transportation Control Measure (TCM). To be considered a TCM, the site's location, infrastructure and building design, in combination with transit and other transportation elements, (i.e. bicycle lanes) must demonstrate an air quality benefit.

The EPA, in cooperation with the Federal Highway Administration, the Federal Transit Administration, the Georgia Department of Transportation, MARTA and the City of Atlanta, is preparing an Environmental Assessment (EA) for the Atlantic Steel Redevelopment Project, in accordance with the National Environmental Policy Act of 1969 (NEPA). The EA will provide a summary of planning efforts associated with the development of concept alternatives, design traffic study, preliminary engineering analysis, and environmental impacts assessment, including all public comments and agency coordination. Several alternatives are being considered as part of

this project. These include alternative site designs, bridge and access ramp locations and configurations, and transit connections. The no action alternative will also be considered. For the purposes of the EA, no action is defined to mean the TCM is not approved and the new 17th Street bridge and related transit improvements are not built. The study area will be assessed for impacts to archeological and historic resources, any protected plant or animal species, jurisdictional wetlands, and water quality. The transportation aspects of the project will be assessed, including noise and air quality impacts, as well as impacts to the surrounding community.

Many of the recipients of this letter have been participating with EPA as part of its XL Program There have been numerous public meetings with stakeholders throughout this process. In fact, a number of letters and comments about the project have already been received by EPA via its public outreach campaign as part of Project XL. These will be duly noted and included as part of the identification of issues to be addressed in the EA process. If you have submitted written comments or have previously been listed on the Atlantic Steel stakeholder list, you will continue to be considered a stakeholder for the Atlantic Steel Redevelopment Project. If you have not already provided specific comments on this project, we are requesting that you provide written comments (by letter or e-mail) outlining your concerns or issues for consideration in the EA. A timely response is needed to ensure that all comments can be addressed in the scope of work for the EA. Please send your written comments to my attention at the above address within the next 30 days.

The next opportunity for formal public comment on this project, as part of the NEPA process, will include a public hearing on the results of the EA sometime this fall. If you have any questions or would like additional information about the project, please contact Mr. Ben West of my staff at (404) 562-9643, E-mail: west.ben@epa.gov. More information on Project XL. and the Atlantic Steel project can be found at: http://www.epa.gov/projectxl. Thank you in advance for your assistance.

Sincerely,

Heinz Mueller

Heinz J. Mueller, Chief
Office of Environmental Assessment
Environmental Accountability Division

cc: Robert Chaapel, Federal Highway Administration
Len Lacour, Federal Transit Administration
Joe Palladi, Georgia Department of Transportation
Tom Queen, Georgia Department of Transportation
Joe McCannon, Metropolitan Atlanta Rapid Transit Authority
Dan Cohen, City of Atlanta
Charles Brown, CRB Realty

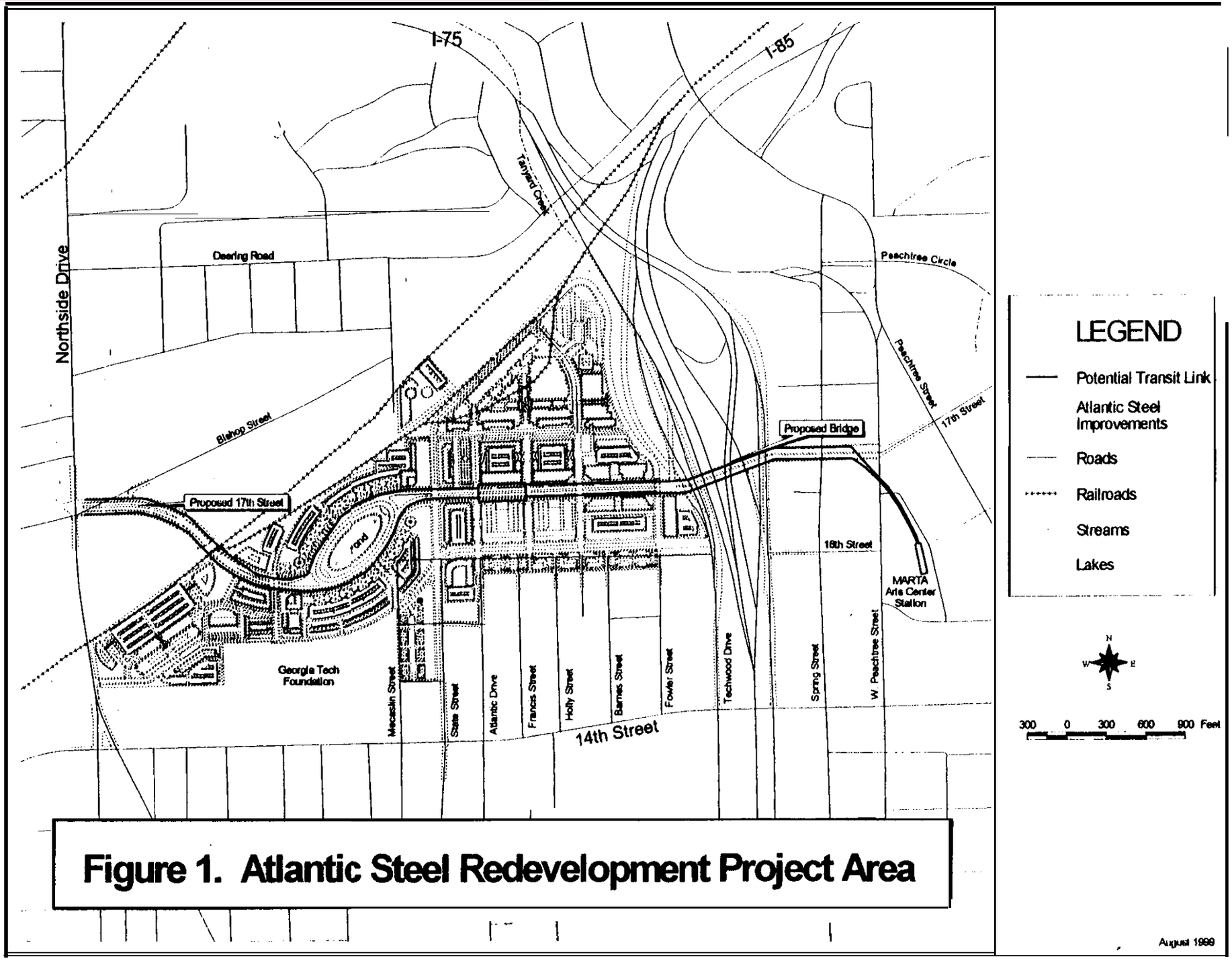
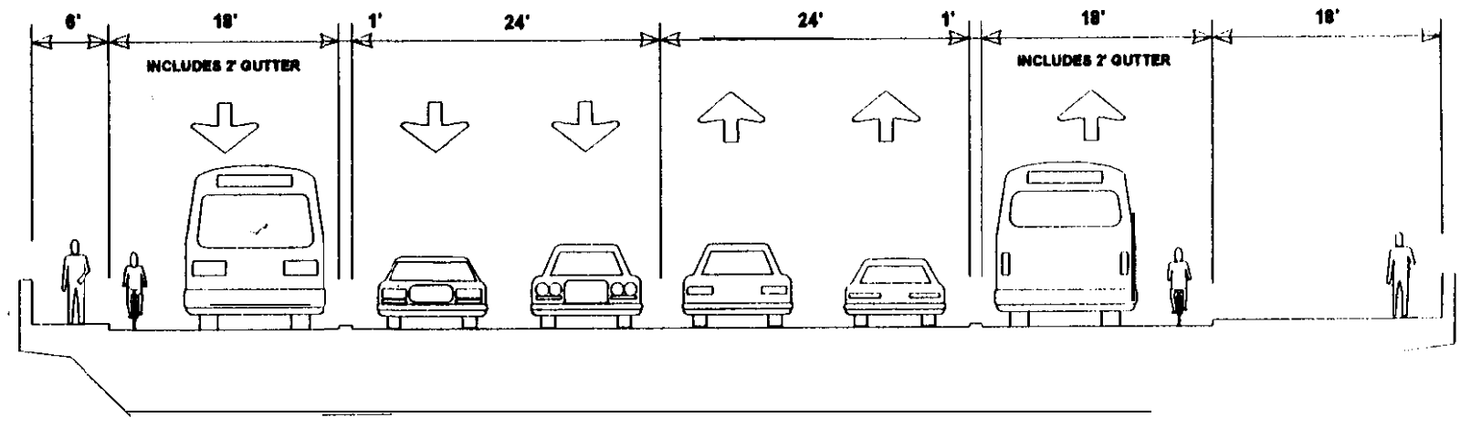


Figure 1. Atlantic Steel Redevelopment Project Area

TOTAL WIDTH

17TH STREET BRIDGE

110'



Not to Scale

Figure 2. Typical Cross Section for Proposed 17th Street Bridge

APPENDIX B

Letter from Atlantic Steel Industries, Inc.

Atlantic Steel
INDUSTRIES, INC.

August 3 I, 1999

USEPA, Region IV
Atlanta Federal Center
6 I Forsyth Street
Atlanta, GA 30303

Attention: Mr. Ben West

Dear Ben,

As a means of supplement to the Preliminary Assessment of Historic Resources - Atlantic Steel Redevelopment Project Report, Atlantic Steel offers the following summary of the efforts we have made to identify and preserve historically significant documents and assets of the Company.

As one of the oldest industries in Atlanta, Atlantic Steel has always been proud of its history Throughout its operation the Company has meticulously preserved the records of the plant facilities and its related operation. As a result, the Company possesses a massive archive of records, publications and photos which document the Company's history

The formal documented history of Atlantic Steel began with a book, *The Story* of *Dixie Steel.* written by Charles F. Stone, President of Atlantic Steel, and was published in 195 1. A second publication, *A Business History of Atlantic Steel Company, 1901-1968,* by Harry Richard Kuniansky, was published in 1970.

Atlantic Steel has made numerous contributions of historic items to various history centers and museums over the years. The earliest known contribution consisted of a Buckeye steam operated generator which the Company gave to a museum in Ohio in about 1979. Later, in about 1987, the Company donated two of the original Hoop Mill roll stand housings to the Atlanta History Center.

At about the same time, we gave the Company's Power House steam whistle which signaled the shift changes over the years to the Atlanta History Center. These items are currently on display at the museum. In 1995, we donated "Old No. One", one of the Company's original steam locomotives, to The Railroad Museum in Savannah, Georgia. We are proud of each of these contributions

As early as 1996 when interest in the purchase of the Atlantic Steel property became serious, the Company developed plans for the preservation and transfer of historically significant documents to appropriate history centers. We held several meetings with the staff of the Atlanta History Center in 1998 to discuss an orderly manner of transferring the Company documents to the

Center's archives. We gave many photos, records and in-house publications to the History Center at those meetings. In the last quarter of 1998, plant operations were coming to a close. At that time, the Company transferred hundreds of Engineering drawings of the facility, buildings and machinery to the Atlanta History Center for permanent storage and display. Among these drawings are Property Surveys, Topographic Maps, Architectural plans, and infrastructure maps. Some of these drawings date back to 1904. Atlantic Steel also provided storage cabinets necessary to house the drawings.

Following the plant closure in December, 1998, we held numerous meetings with the property purchaser, Jacoby Development, Inc., to discuss plans for the ownership transition. During these meetings, Atlantic Steel agreed to save certain items of historical significance for incorporation into Jacoby's development plan Among these items are: rolling mill stands, the Company flag pole, old mill tools, and miscellaneous pieces of machinery. Furthermore, Jacoby plans to provide a permanent exhibition space on the property for historic Atlantic Steel items.

In February of 1999, Atlantic Steel welcomed Ruth Dusseault, a professional photographer operating under a City of Atlanta Bureau of Cultural Affairs grant, to photograph the various buildings on the property. During August, 1999, Ms. Dusseault's photos were placed on display as a special exhibit at the Georgia Tech School of Architecture.

Throughout 1999, Atlantic Steel has been planning the demolition of the facility in preparation for development. In doing so, significant efforts have been made to preserve and find a reuse for many parts of the facility. In April, we held a public auction which enabled other businesses to reuse a substantial amount of the plant machinery and spare parts. The most pleasing purchase was that of David Carter, of Carter Machine Company. He purchased the Machine Shop building, constructed in 1912, which he intends to relocate to Toccoa, Georgia for use as a machine shop museum. Mr. Carter also purchased several of the old machine tools to be placed in the museum. A 40,000 sq. ft. warehouse building has also been sold for reuse at another steel mill in Kansas.

Furthermore, we have just donated a number of maintenance shop appliances including a 1919 model forge hammer to the Southeastern Railway Museum in Duluth, Georgia.

In summary, Atlantic Steel has done a great deal over the years on it's own initiative to preserve the historical value of it's Company and certain assets. We trust that these efforts are compatible with EPA's endeavor to assess the historic resources of the property. If we can be of further assistance in obtaining EPA's assessment objective, we would be delighted to do so.

Cordially,

Neil Harmon

C. A. (Neil) Harmon
Environmental Engineer

APPENDIX C

List of Interested Parties

Elected Officials

U.S. Senator Max Cleland
U.S. Senator Paul Coverdell
U.S. Representative John Lewis
U.S. Representative John Linder
U.S. Representative Johnny Isakson
Georgia Governor Roy Barnes
City of Atlanta Mayor Bill Campbell

Federal Agencies

Advisory Council on Historic Preservation
Federal Highway Administration
Federal Transit Administration
U.S. Army Corps of Engineers
U.S. Environmental Protection Agency

State of Georgia

Georgia Department of Community Affairs
Georgia Department of Natural Resources, Environmental Protection Division
Georgia Department of Natural Resources, Historic Preservation Division (State Historic Preservation Office)
Georgia Department of Transportation
Georgia Institute of Technology

Local Atlanta Agencies/Organizations

Atlanta Chamber of Commerce
Atlanta City Council
Atlanta History Center
Atlanta Planning Department
Atlanta Regional Commission
Atlanta Urban Design Commission
Metropolitan Atlanta Rapid Transit Authority

Native American Groups

Muscogee (Creek) Nation of Oklahoma
Thlopthlocco Tribal Town
Alabama Quassarte Tribal Town
Kialegee Tribal Town
Seminole Triie of Florida
Poarch Band of Creek Indians of Alabama
Miccosuki Tribe of Indians of Florida
Absentee Shawnee Tribe *of* Oklahoma
Cherokee Nation of Oklahoma
United Keetoowab Band
The Eastern Band of the Cherokee Indians
Alabama-Quasatte Tribe of Texas
Cousharta Tribe
Seminole Nation of Oklahoma

Other Stakeholders/Interested Parties

Ansley Park Neighborhood
Environmental Defense Fund
Georgia Conservancy
Georgia Tmst for Historic Preservation
Home Park Neighborhood
Loring Heights Neighborhood
Midtown Alliance
National Trust for Historic Preservation
Railroad Museum in Savannah, Georgia
Sierra Club
Southeastern Railway Museum
Urban Land Institute

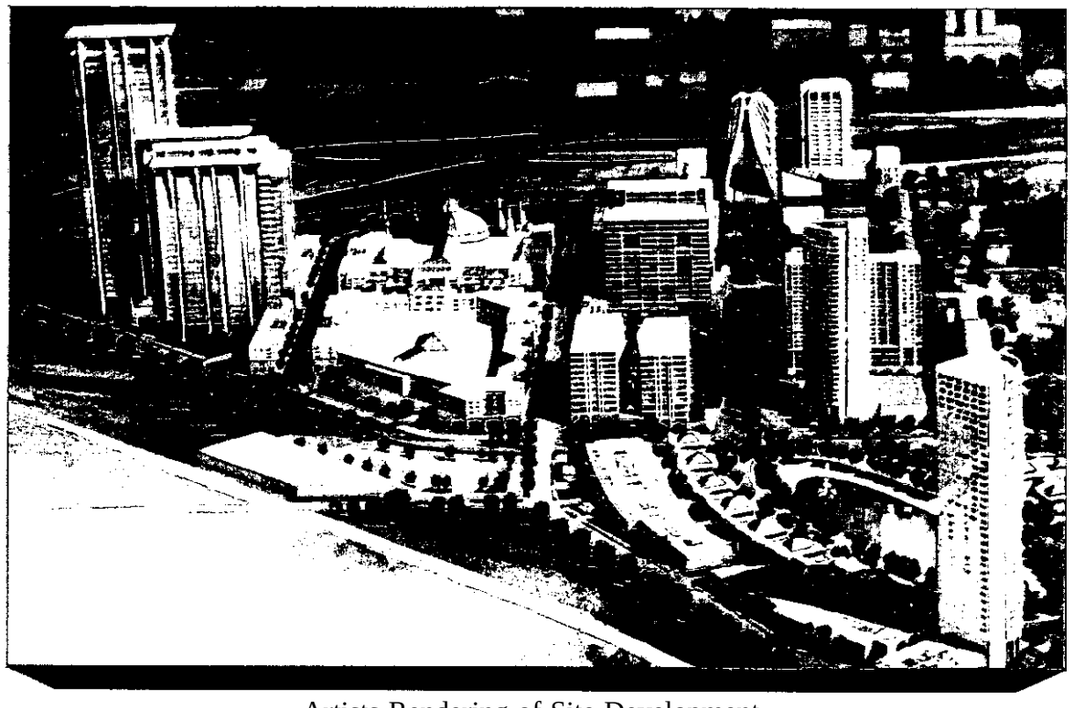
APPENDIX G

VISUAL RESOURCES AND ARTISTIC RENDERINGS

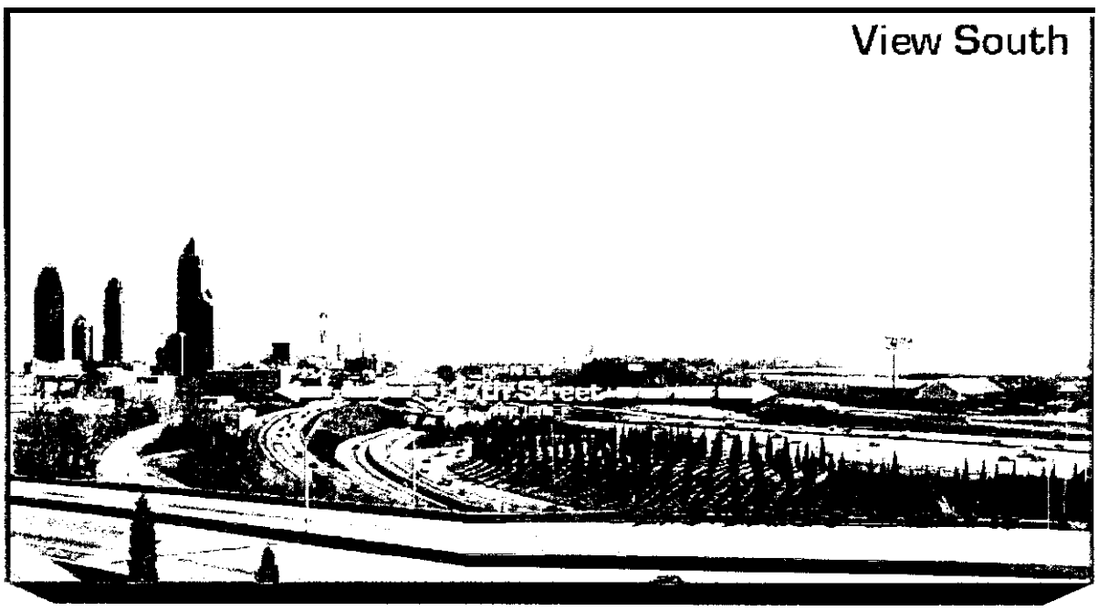
Artists Rendering of 16th Street

Artists Rendering of 17th Street

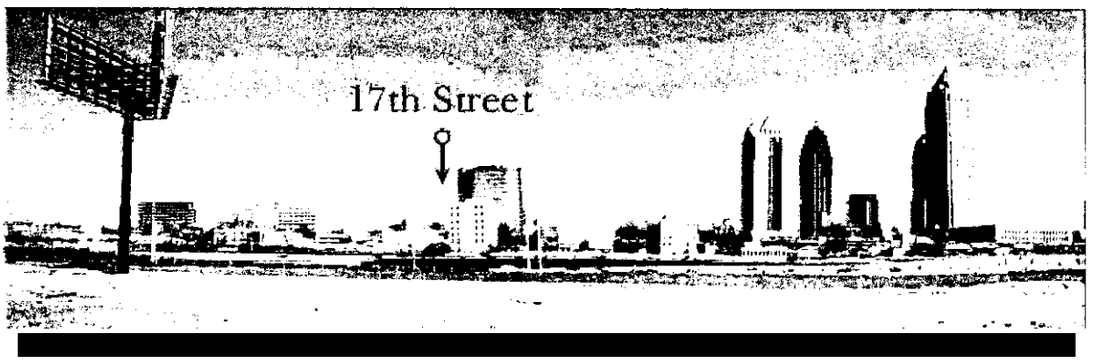
Artist's Rendering of Mixed Use Development



Artists Rendering of Site Development



View South from Former Equifax Building



View East to Midtown

APPENDIX H

CITY OF ATLANTA WATER AND SANITARY SEWER CAPACITY CERTIFICATIONS AND STORM SEWER ALIGNMENT VERIFICATION

JDI

JACOBY DEVELOPMENT, INC.

May 24, 2000

MEMORANDUM

TO: Mr. Ben West, *EPA*
Ms. Alyce Getty, *Parsons*
Mr. Scott Condra, *Law*
Mr. Gerald Pouncey, *Morris, Manning &Martin*

FROM: Hilburn 0. Hillestad HOH

RE: CITY'S WATER SYSTEM CAPACITY & CONVEYANCE LETTER

Pursuant to our discussions, please fmd attached the above referenced letter from the City. This confirmation of water availability for the Jacoby, Atlantic Redevelopment, LLC should be included in the EA.

I hope to receive the City's Confirmation of sewer capacity shortly. I will forward that letter to you as well for inclusion in the EA.

Please do not hesitate to call me if you have any questions,

HOH/ks
Enclosure

cc: Mr. James F. Jacoby
Mr. Charles R. Brown

1000 Abernathy Road, NE, Suite 1250, Atlanta, Georgia 30328
(770) 399-9930 Fax (770) 206-9150

CITY OF ATLANTA

BILL CAMPBELL
MAYOR

68 MITCHELL STREET, SUITE 5700, SOUTH BLDG.
ATLANTA. GEORGIA 30330-0330
OFFICE • 404-330-6075
FAX • 404-658-7194

DEPARTMENT OF WATER
REMEDIOS K. DEL ROSARIO
Commissioner

May 22, 2000

Hilbum Hillestad, Ph D.
Senior Vice President
Jacoby Development, Inc.
1000 Abernathy Road, N.E., Suite 1250
Atlanta, Georgia 30328

RE: Atlantic Steel *Site* Redevelopment
Water System Capacity and Conveyance Verification

Dear Mr. Hillestad:

In response to a request from your design Engineers on the subject Development, this is a letter of confirmation of available capacity to provide appropriate water flows for domestic and fire protection purposes for the proposed redevelopment of the Atlantic Steel property located between Northside Drive and the IH 75/85 Connector, and south of the Norfolk Southern Railway lines and north of 14" Street.

The City's primary water treatment facility, the Hemphill Water Treatment Plant is located immediately west of the proposed project.

Within the immediate proximity of this development, the City currently has a 36-inch diameter transmission main in 14th Street, a 36-inch diameter water transmission main in Northside Drive, and a 16-inch diameter water main in Bishop Street. Any of these mains can utilized to provide service to the proposed project.

As requested, the City has sufficient water treatment capacity and a water distribution system available to allow development of the proposed Atlantic Station project at the following estimated water flows:

- Domestic water flows projected at 3,000GPM to 5,000GPM
- Fire flows in the range of 3,000GPM to 10,000GPM

These capacities were verified by utilizing a computer based hydraulic model of our water distribution system, with the assumption that two feeds into the development would be made, one from 14th Street and one from Bishop Street

I trust that this information will satisfy any needs for confirmation of the water system capacity to serve this important development

Sincerely,

Remedios K. del Rosario

Remedios K. Del Rosario
Commissioner, Department of Water

cc: Chris New
Lee Hunt, P.E.

CITY OF ATLANTA

BILL CAMPBELL
MAYOR

55 TRINITY AVENUE / ATLANTA, GEORGIA 30335-3029
SUITE 4700, CITY HALL SOUTH
(404) 330-6073 / FAX: (404) 658-7631

DEPARTMENT OF PUBLIC WORKS

Norman Koplon, P.E.
Interim Commissioner

David Peters, P.E.
Deputy Commissioner

John W. Griffin, Jr
Deputy Commissioner

Tuesday, August 1, 2000

Hilburn Hillestad, Ph.D
Senior Vice President
Jacoby Development, Inc.
1000 Abernathy Road, NE
Suite 1250
Atlanta, GA 30328

Re: Sewer System Capacity, Storm Water Management and Sewer Alignments for Atlantic Steel Site Redevelopment, 1365 Mecaslin Street, NW

Dear Dr. Hillestad:

This letter is intended to clarify my two referenced letters to you dated July 6, 2000. It is important that we continually update data provided to the public including clarification of any information relevant to the draft Environmental Assessment that EPA released this week.

First, further review reaffirms my conclusion that capacity will be available to convey and treat the wastewater that you predict will be generated by your development between 2002 and 2012. That further review, however, identified a need to clarify some of the underlying facts supporting my previous correspondence. Most pertinent, the upgrades that will soon be completed *at the* R.M. Clayton Water Reclamation Plant should increase treatment capacity substantially to handle maximum month average daily flows of approximately 122 MGD, in contrast to our expectations for the average annual daily flow referenced in the previous letters. I also have confirmed that planning and other work are well underway to reduce flows from the Hemphill Plant to the Orme Street Combined Sewer.

Accordingly, we are in a good position to process your permits when you are able to provide design parameters, including proposed connection location(s), for review by the City staff and consultants.

Second, our additional review indicates that we must work closely to assure that our staffs develop and implement sound alternatives for managing stormwater in the short term, as well as for

the long term. Recent investigations have provided a better understanding of how the complex interrelationship of pipes, valves and storage ponds function to capture and convey the several wastewater and stormwater flows, past and present. We also have some limited experience with the effects of setting the control valves to reduce the use of the process ponds for conveying stormwater and other flows. The recent rehabilitation of the combined and separate sewers on your property will reduce the contribution of flows from Hemphill and upstream dry-weather flows. The city expects your developments plans to incorporate advanced control of both stormwater and wastewater. One example previously discussed is the importance of connecting your wastewater collection system to the trunk sewer below the Tanyard CSO treatment facility at the last manhole just before the trunk crosses under I-75.

We understand that you intend to reconfigure your system of ponds and channels. In that regard, we encourage frequent communication with my staff and me so that we can respond expeditiously on evaluation of details of your plan including the volumes, rates and connection points for wastewater and stormwater flows.

Thank your for your cooperation. Please coordinate with us to assure that current information is incorporated into the Final Environmental Assessment for your project as appropriate.

Sincerely,

Norman A. Koplon, PE

NAK/DWP/sm

CITY OF ATLANTA

BILL CAMPBELL
MAYOR

68 MITCHELL ST. SW. ATLANTA, GEORGIA 30335-0324
SUITE 4700. CITY HALL - SOUTH
(404) 330- 6240
PAX (404) 65%7552
email: publicworks@ci.atlanta.ga.us

DEPARTMENT OF PUBLIC WORKS

Norman A. Koplon, P.E.
Interim Commissioner

David W. Peters, P.E
Acting Deputy Commissioner

July 6, 2000

Hilburn Hillestad, Ph.D.
Senior Vice President
Jacoby Development, Inc.
1000 Abernathy Road, NE
Suite 1250
Atlanta, GA 30328

Subject: Atlantic Steel Site Redevelopment
136.5 Mecaslin Street, NW
Sanitary Sewer System Capacity
And Conveyance Verification

Dear Dr. Hillestad:

This letter is to confirm the availability of wastewater treatment capacity and collection system capabilities to provide appropriate sanitary sewer services for the proposed redevelopment of the Atlantic Steel property located between Northside Drive and the I-75/85 Connector, and south of the Norfolk and Southern Railway lines and north of 14th Street.

The City's primary wastewater treatment facility, the R. M. Clayton Water Reclamation Plant is located downstream some 4 to 5 miles from the proposed project. The R. M. Clayton Facility currently treats an average daily flow of 86MGD+/-, and is currently being expanded to treat an average daily flow of 103MGD and maximum daily flow of 186MGD as noted in the Camp Dresser McKee report to the City dated April, 1997.

Due to the shut-down of the Atlantic Steel operations and current re-circulation of flows at the Hemphill Water Treatment Plant, a reduction of flows estimated between

1.5MGD to 2.5MGD that previously flowed to the Orme Street Combined Sewer and the R. M. Clayton Wastewater Reclamation has resulted. These earlier flows included wastewater released from the City's Hemphill Water Treatment Plant (filter backwash, leakage, washdown, water, etc.).

The City has sufficient wastewater treatment capacity available to allow development of the proposed Atlantic Station project at the following projected average dally sewage flows:

- an estimated 0.6 MGD flow beginning in the year 2002
- an estimated 1.4 MGD total flow by the year 2006
- an estimated 1.8 MGD total flow by the year 2012

There currently exists a 54-inch diameter sewer main, which will be utilized to provide sanitary sewer service to the proposed project. The project will develop a new separated sanitary sewer collection system through the development and make its connection to the City's sanitary sewer system via the existing 54-inch diameter main adjacent to the Tanyard Creek CSO. This 54-inch diameter main extends to a 60-inch diameter main near Atlanta Memorial Park east of Northside Drive and north of Overbrook Drive. Recent flow monitoring performed for the City by ADS Environmental Services, Inc., in this area during February, 2000, provides the following data relative to current flows in, and capacities of, the downstream sanitary sewer system:

- Flow meter #PTC30 on the 60-inch diameter main downstream of Tanyard Creek CSO on the Tanyard Creek Interceptor (formerly known as the Peachtree Creek Interceptor Sewer)
  - Average daily flow - 10.8065 MGD
  - Minimum flow - 5.1387 MGD
  - Peak flow 39.1835 MGD
  - No surcharge periods
  - Flow depths range to 10.76" to 44.58" in the 60.5" diameter pipe

It is my understanding that according to your Consultant, Jordan, Jones, & Goulding that this 60-inch diameter main is at a 0.2% slope which would indicate a theoretical capacity of some 75 MGD flowing full. This would provide an excess capacity of some 64 MGD for average daily flows and some 35 MGD for peak flow events. As evidenced by this flow data and by the specific approval of Form 2 (attached)

entitled City of Atlanta – Department of Public Works Confirmation of Adequate Capacity to Convey New Flows in the Wastewater Collection and Transmissions System dated July 5, 2000, the City's sanitary sewer system has adequate conveyance capacity to service the proposed redevelopment of the Atlantic Steel site.

I trust that this information will satisfy any needs for confirmation of the sewer system capacity to serve this important development.

Sincerely,

Norman A. Koplon, P.E.
Interim Commissioner
Department of Public Works

NAK/bah

Attachments

xc: David Peters

City of Atlanta – Department of Public Work
Confirmation of Adequate Capacity To Convey New Flows in the Wastewater Collection and Transmission System

Building Log Number: BLCN-200000156 Zoning Classification: C-4-C

Sewer Basin: PEACHTREE CREEK Major Trunk: TANYARD CREEK INTERCEPTOR

Street Address: 1365 MECASLIN ST. ATLANTA, GA 30318

Land Lot: 108, 148 & 149 District: 17TH DISTRICT

Misc. Information:

Applicant (Owner or Developer): JACOBY ATLANTIC REDEVELOPMENT, LLC

Project Name: ATLANTIC STATION

Proposed Use: MIXED-USE DEVELOPMENT

Calculated or Estimated Sewage Flow: 1.789 MGD
(Average Daily Flows)

As a condition of authorizing the addition of sewage flow into the City's Sewer System, the Commissioner of Public Works for the City of Atlanta will certify the availability of "Adequate Capacity" to treat, transmit and convey increased sewage flow or require the completion of offsetting sewer improvements to the City's system or assure that the applicant has received all required approvals for alternative sewage disposal techniques where "Adequate Capacity" is not available. The final acceptance of submissions to other City Departments of applications for zoning or for building permits and the approval of those applications are contingent upon the satisfaction of the condition requiring completion of offsetting sewer improvements or the receipt of all approvals for alternative sewage disposal techniques. Securing either the certification of "Adequate Capacity" from the Commissioner of Public Works or of the satisfaction by the Building permit conditions is a requirement of the City Ordinances § 154 –145 entitled "Plans and specifications generally" and is consistent with the relief requested in the federal lawsuit initiated by the U. S. Environmental Protection Division, including Paragraph VIII.B.8 of the Fii Amended Consent Decree between the United TWT). The Consent Decree definitions of terms "Adequate Capacity" and "New Flows" are described below. The Consent Decree provisions are available at the Department of Public Works.

Approvals by other City Departments based on zoning, building permit or other applications submitted to the City after this date shall require a certification of "Adequate Capacity" in accordance with Section 154-145 of the City Ordinance. The Commissioner of Public Works will certify "Adequate Capacity" and issue a finding that no downstream problems exist. The Commissioner of Pubic Works will base this decision on information submitted by the applicant and other information regaiding thb condition of the City's Sewer that is available during the period of consideration of the permit application. The term 'New Flows" is defined to mean new sewer service connections or an increase in flow at existing sewer service connections. The Consent Decree defines the term "Adequate Capacity" to mean a demonstration of the following:

a. Adequate treatment capacity shall be demonstrated by, certification from the Commissioner of Public Works that the wastewater treatment plant which will receive flow from newly authorized sewer service connection(s) will not be in "significant non-compliance" for quarterly reporting as defined in 40 C.F.R. Part 123.45, Appendix A, at the time the wastewater treatment plant receives the flow from the Appendix A, at the time the wastewater treatment plant receives the flow from the newly authorized sewer service connection(s), and the flow predicted to occur from all other authorized sewer service connection(s) which have not begun to discharge into the collection and transmission systems.

b. Adequate transmission capacity shall be demonstrated by a certification from the Commissioner of Public Works that each pump station through which all flow from the newly authorized sewer service connection(s) passes to the wastewater treatment plant receiving such flow can transmit the existing one (1) hour peak flow passing through the pump station plus the addition to existing peak flow predicted to occur from all other authorized sewer service connection(s), and the addition to existing peak flow predicted to occur from all other authorized sewer service connections which have not begun to discharged into the collection system.

c. Adequate collection capacity shall be demonstrated by a certification from the Commissioner of Public Works that each gravity sewer line through which all flow from the newly authorized sewer service connection(s) passes to the wastewater treatment plant receiving such flow can carry the existing one (I) hour peak flow passing through the gravity sewer line plus the addition to existing peak flow predicted to occur from the newly authorized sewer service connections which have not begun to discharge into the collection system, provided as follows:

(i.) The Commissioner may hereby authorize the additional flow upon a. determination that capacity is available to carry existing and new flows in the Wastewater Collection and Transmission System without causing surcharging except as otherwise provided by the CSO permit.

(ii.) The Commissioner determines the additional flow in the Combined Sewer System. upon, a determination. that. capacity is available to carry. existing and new flows in the Wastewater Collection and Transmission System without causing sewage overflows during the one (1) hour peak flow condition. where additional flows to the Combination Sewer System are predicted to cause overflows, the Commissioner may authorize additional flow upon demonstrating that a project or projects will offset the new flow by an amount greater than the estimated additional 'flows.

(iii.) Where. the Commissioner determines that a new sewer connection or addition to an existing sewer service connection will cause the peak flow in a separate gravity sewer line to surcharge, the City will evaluate the affected sewer line(s) and determine whether the potential effect of the proposed flow requires application of the offset provisions described in subparagraph VIII.B.8e. before authorization of the 'New Flows".

(iv.) For any sewershed for which the Commissioner cannot certify that 'New Flows" will not cause overflows, or determines that the degree of surcharging is unacceptable, Commissioner may apply the off set program described in subparagraph VIII.B9e. The offset program will apply immediately to projects in the Nancy Creek sewer basin and to the North Fork and South Fork sewersheds of Peachtree sewer basin until further notice.

The offset program described in subparagraph VIIIB.8.e of the First Amended Consent Decree allows the authorized of New Flows by the Commissioner provided that before connection of all New Flows they are offset by improvements of the affected sewer lines, including added capacity through capital improvements, permanent removal of the sewer service connection, or infiltration/inflow reduction.

Subject to the above conditions, this project is ✓ approved ____ disapproved.

This 5th day of July, 2000

Commissioner of Public Works

Signature of City's Agent (Atlanta Sewer Group)

GEORGIA REGISTERED No. 015563 PROFESSIONAL ENGINEER VALENTINO T. BATES

CAPACITY CERTIFICATION

CITY OF ATLANTA
SEWER CAPACITY LEVEL A and/or B

BASIS OF CERTIFICATION FOR CONNECTIONS 2500 GPD OR LARGER

Building Permit Application No.: BLCI-200000158

Address: 1365 Mecaslin Street

Date of Certification: July 5, 2000

Additional Sewage Flow: 1,791,325.7 GPD

Basis of Certification:

- Capacity Exists in the R.M. Clayton WRC
- Capacity Exists in the _____ Pump Station(s)
- Are any Capacity Related Overflows known along the Sewers between the point of new connection and the above WRC: _____ YES ✓ NO
- Proposed Connection is in a capacity-limited area: _____ YES ✓ NO (If yes, attach back-up)
- Capacity is available in the following trunk sewers from the new connection to the WRC based on observations, survey data or flow data: White Provision OF, Orme St Trk, Orme St Trk Inter, Peachtree Crk Trk Inter, Peachtree Crk Trk Relf.
- Capacity is limited in the following mmk sewers for which observations, survey or flow data is available:

CAPACITY CERTIFICATION

- Connection is in a predominately residential area and the number of lots upstream of this additional flow is less than 500 minus (The New Flow divided by 240 gpd):
  ✓ YES _____NO NA (If answer is no, proceed to spot check of sewers)

- Connection is in a predominately residential area and the number of lots booth upstream and downstream of this additional flow to the first trunk is less than 500 minus (The New Flow divided by 240 gpd):
  ✓ YES _____NO _____NA [If answer is no, proceed to spot check of sewers)

- Spot check of flow depths at the following manholes on the indicated trunks and outfalls for which survey or flow monitoring data is not available indicate that capacity is available (attach field check records):

  _____

  _____

- Other basis of determining that capacity is available in specific sewers as follow.?.:

  _____

  _____

  _____

- Connection is in a CS Area and additional flow is balanced by storm water detention basin: _____ YES _____NO ✓ NA (CS) or (SS)

- Other data and information relevant to certification of capacity not covered above:

  _____

  _____

- Downstream Manhole No. _____

. Available Capacity can not be certified until the following conditions are met:
  0 Available I/I Reduction Credits are allocated by Norman Koplon
  Other: _____

  _____

Certification Reviewed By: _____

Date: 07/05/00

Revision 4 – June 9, 2000

BILL CAMPBELL
MAYOR

CITY OF ATLANTA

68 MITCHELL ST, SW, ATLANTA, GEORGIA 30335-0324
SUITE 4700, CITY HALL - SOUTH
(404) 330- 6240
FAX (404) 658-7552
email: publicworks@ci.atlanta.ga.us

DEPARTMENT OF PUBLIC WORKS

Norman A. Koplon, P.E.
Interim Commissioner

David W. Peters, P.E.
Acting Deputy Commissioner

July 6, 2000

Hilburn 0. Hillestad, Ph.D.
Senior Vice President
Jacoby Development, Inc.
1000 Abernathy Road, NE
Suite 1250
Atlanta, GA 30328

Subject: Atlantic Steel Site Redevelopment
1365 Mecaslin Street. NW
Storm Sewer Outfall Alignment

Dear Dr. Hillestad:

The City of Atlanta has reviewed your conceptual point of connection (Exhibit "A") of the proposed storm sewer bypass system within the Atlantic Steel site. It is our understanding that the proposed bypass storm sewer will be designed to collect all off-site stormwater near the rear of the Institute of Paper Science and Technology (Hemphill and 14" Street), and transport the stormwater to the existing Orme Street Sewer near I-75.

Jacoby Atlantic Redevelopment, LLC will be required to meet all City of Atlanta's codes, ordinances and regulations related to the on-site stormwater systems and in particular, provide detention facilities to reduce the peak runoff from the post-developed site conditions to less than or equal to the pre-developed conditions. Additional stormwater detention capacity must be provided to off-set the net increase in sanitary sewer flow in the downstream combined Orme Street Sewer, according to Short-Term Capacity Certification Protocols.

The proposed sanitary sewer must be extended to connect directly to the Tanyard Creek Interceptor Sewer downstream of the CSO facility.

Your proposed connection to the Orme Street Sewer between the Norfolk and Southern mainline tracks and the Norfolk and Southern siding tracks as shown on Exhibit "A" meets the City's minimum requirements under the condition that this storm drainage bypass system will be properly designed by Jacoby Atlantic Redevelopment, LLC, both horizontally and vertically, to allow for future extension to a connection point downstream of the Tanyard Creek CSO Facility, said alignment and point would be as approved by the City of Atlanta. At this time, funding has not been identified for this extension.

I trust that this information will satisfy any needs for confirmation of the storm sewer system alignment to serve this important development.

Sincerely,

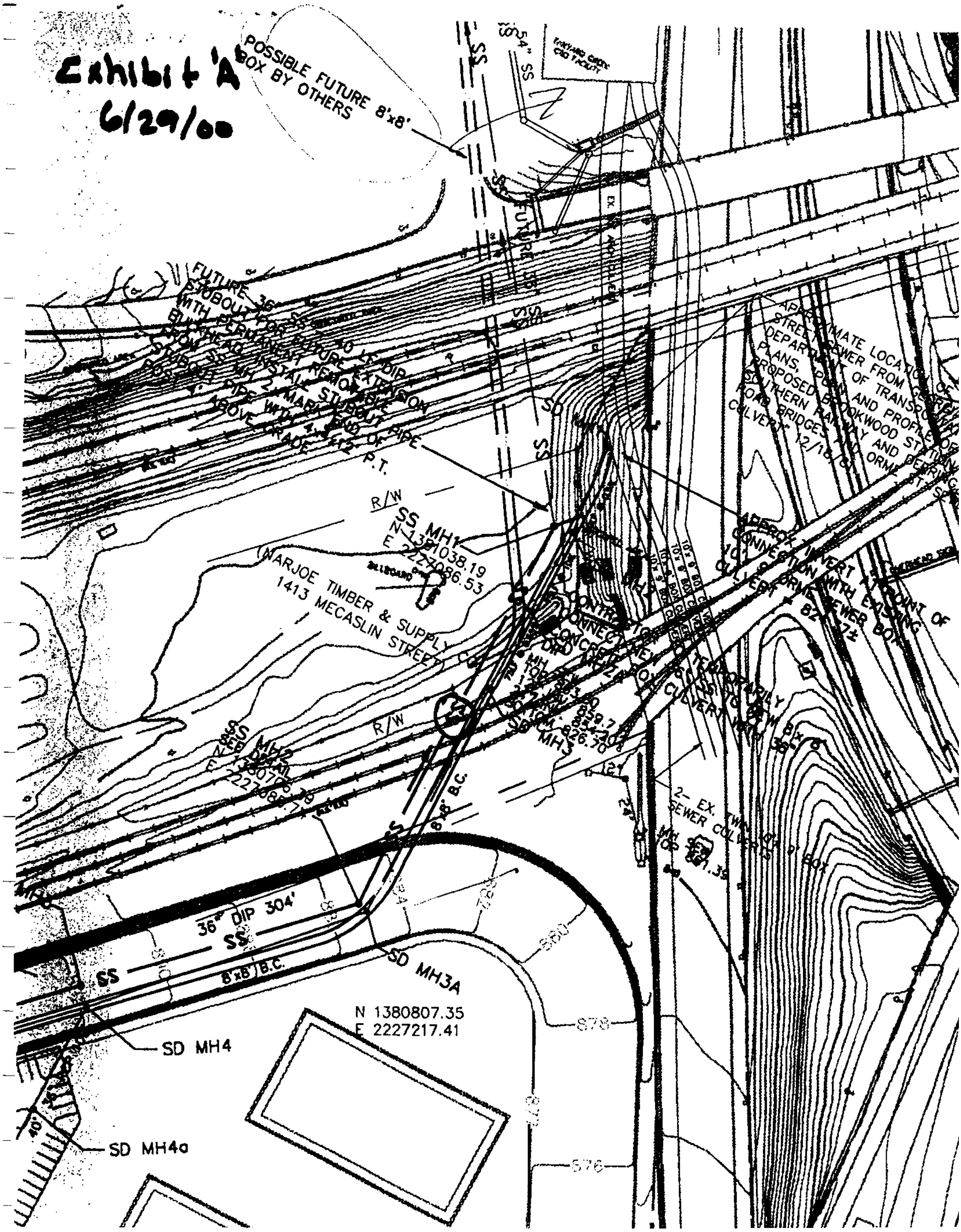
Norman A. Koplon, P.E.
Interim Commissioner
Department of Public Works

NAK/bah

Attachment

xc: David Peters

Exhibit 'A'
6/29/00



APPENDIX I

DRAFT MEMORANDUM OF UNDERSTANDING

MEMORANDUM OF UNDERSTANDING
BETWEEN
THE U.S. ENVIRONMENTAL PROTECTION AGENCY
THE GEORGIA DEPARTMENT OF TRANSPORTATION
THE GEORGIA REGIONAL TRANSPORTATION AUTHORITY
THE CITY OF ATLANTA, AND
JACOBY ATLANTIC REDEVELOPMENT, L.L.C.

TO ESTABLISH A COMMUNITY-BASED PROCESS TO STUDY THE MAGNITUDE AND CUMULATIVE EFFECTS OF ADDITIONAL TRAFFIC IN NEIGHBORHOODS ASSOCIATED WITH DEVELOPMENT IN MIDTOWN ATLANTA, GEORGIA

1. BACKGROUND

The U.S. Environmental Protection Agency, Region IV (EPA), in cooperation with the Georgia Department of Transportation (GDOT), Georgia Regional Transportation Authority (GRTA), City of Atlanta, and Jacoby Atlantic Redevelopment, L.L.C. (JAR), is preparing an Environmental Assessment (EA), in accordance with the National Environmental Policy Act of 1969 (NEPA) for the 17th Street Extension and Atlantic Steel Redevelopment Project. This EA is intended to supplement EPA's regulatory decision on approval of this project as a transportation control measure (TCM) and to fulfill applicable requirements associated with other federal actions on the Project, specifically in order that the transportation components of the project may become eligible for federal funding.

As part of the development of the EA, several neighborhoods in the project area (Ansley Park, Home Park, and Loring Heights) and the Midtown Alliance have raised concerns about traffic impacts to their communities resulting from the 17" Street Extension and Atlantic Steel redevelopment, as well as new development that is either under construction or planned to occur in the area. The communities are concerned about the cumulative impacts of additional traffic resulting from all of this development.

2. PURPOSE

To address these community concerns, this Memorandum of Understanding (MOU) establishes an agreement between the undersigned parties on conditions to be met and procedures to be followed for continued study of traffic impacts to neighborhoods in Midtown Atlanta. The undersigned parties are concerned about the localized impacts of smart growth and urban revitalization projects and seek to conserve the integrity and stability of existing neighborhoods and support overall community improvement goals.

The primary purpose of this MOU is to establish a community-based planning process that will collect specific data on future trips associated with the redevelopment of the Atlantic Steel site

and other projects in Midtown Atlanta in order to study the magnitude and cumulative effects of traffic in the neighborhoods and develop and implement means of minimizing these impacts. Commitments in this MOU consist of: 1) existing commitments in the City of Atlanta zoning for the Atlantic Steel site, 2) proposed commitments in the TCM included in the Georgia State Implementation Plan, and 3) new commitments in this MOU.

3. GENERAL PROVISIONS

The following general provisions shall be conducted or followed in the course of completing commitments in this MOU.

A. The City of Atlanta, as the sponsor of the TCM, shall be the lead agency in the joint agency effort to study the effects of additional traffic in the neighborhoods and develop and implement means of minimizing these impacts. The City of Atlanta, in cooperation with the agencies listed below, shall be responsible for monitoring traflic volumes and characteristics in the project area, developing conceptual traffic calming treatments at all key entry points to the neighborhoods, and securing funding for improvements as their need becomes apparent and their application is agreed upon by all parties.

B. GDOT and GRTA shall be designated as cooperating agencies for purposes of coordinating the proposed action with all current and future federal and state transportation projects in proximity to the project area and overseeing impacts to neighborhoods as a result of the 17th Street Extension project.

C. EPA shall be designated as a cooperating agency and shall be responsible for participation in areas related to Project XL and TCM monitoring and reporting requirements.

D. JAR shall work with the agencies listed above to provide relevant information and funding, as appropriate, in accordance with existing zoning commitments and Project XL and TCM monitoring and reporting requirements.

E. The Ansley Park Civic Association, Home Park Community Improvement Association, Loring Heights Neighborhood Association, and Midtown Alliance shall be designated as concurring parties for the purposes of this MOU. Individuals from these organizations shall serve as the designated representatives for the interests and positions of the entire neighborhood and Midtown Atlanta.

4. SPECIFIC PROVISIONS

The following specific provisions shall be conducted or followed in the course of completing commitments in this MOU. Some of the specific provisions are included in other enforceable

documents (e.g., zoning conditions, TCM document), and these commitments are merely summarized below:

Zoning Commitments

A. When the Atlantic Steel property was rezoned in 1998, a specific condition was included that attempted to address the neighborhood concerns related to future traffic impacts. Condition #23 of the current zoning includes a commitment by JAR to complete a transportation management plan (TMP) for all non-residential components containing strategies and implementation programs for reducing the number of single occupant vehicle trips. This represents an enforceable zoning condition by the City of Atlanta on JAR to reduce trips and better manage off-site traffic. In addition to the current zoning commitment, it is agreed that the TMP for the site will be developed with input from the surrounding neighborhoods, as represented by City of Atlanta Neighborhood Planning Unit E (NPU-E), and the Midtown Alliance.

B. When the Atlantic Steel property was rezoned, another condition was included that attempted to address specific concerns of Home Park and Loring Heights related to future cut-through traffic. Condition 4 of the current zoning states, "The developer will work with the City (of Atlanta) and Home Park to limit cut-through traffic on residential streets perpendicular to and south of 16th Street by means of c&de-sacs, speed humps, gates, control arms, and other traffic calming devices. The developer will work with the City (of Atlanta) and Loring Heights neighborhood to limit cut-through traffic on Bishop Street." This represents an enforceable commitment on behalf of the City of Atlanta and JAR to work with these adjacent neighborhoods to minimize traffic impacts in the future.

TCM Commitments

A. The TCM requires annual monitoring of the build-out and performance of the Atlantic Steel site relative to certain site design and transportation performance measures (see Section 4.2.4). Data will be collected about the nature of trips made to, from and on the site. The City of Atlanta may choose to solicit other transportation information that would be beneficial for devising strategies to reduce single occupancy vehicle trips. In addition to these commitments, it is agreed that the City of Atlanta and JAR will continue to meet with NPU-E and the Midtown Alliance as the Atlantic Steel site builds out to review the latest site plan and discuss prelii results of the monitoring.

B. In order to respond to concerns raised about the TCM and NEPA analyses, the City of Atlanta and EPA recognized the need to better balance the regional air quality ***benefits*** with the localii impacts of additional traffic created by this project. This would require some mechanism to minimize future traffic impacts associated with build-out of the Atlantic Steel site. Therefore, a new transportation performance measure is included

in the TCM that identifies an upper limit for the average daily total number of vehicle trips that would be generated by the project. If this upper limit is exceeded, JAR will participate in a Transportation Management Association that will develop alternative transportation programs to achieve the performance measure. This represents an enforceable commitment on behalf of the City of Atlanta, EPA and JAR to minimize traffic impacts in the future.

Additional Commitments

A. Atlantic Steel Brownfield Area and Tax Allocation District Number Two (BATAD #2) was created to make possible the redevelopment of the Atlantic Steel site and encourage additional development on the perimeter of the redevelopment area. More specifically, BATAD #2 promotes maximum use of alternative transportation modes to minimize congestion and creates a financing tool for transportation and other infrastructure to improve and connect major activity centers. Since certain surface streets in the adjacent neighborhoods of Home Park and Loring Heights are included in the boundary for BATAD #2, it provides a specific process and dedicated funding source for the implementation of future transportation projects, including potential traffic cahning measures, in these areas. Therefore, if cut-through traffic is determined to be excessive in Home Park or Loring Heights attributed to the Atlantic Steel redevelopment or surrounding areas, it is agreed that BATAD #2 funds would be utilized to study and implement measures to limit cut-through traffic. All monies and expenditures would be managed by the Atlanta Development Authority and the City of Atlanta. For any traffic cahning measures that would require changes in traffic ingress and egress at certain intersections, the City of Atlanta commits to providing temporary barricades for an agreed upon trial period to determine the effects of eliiting (or improving) access.

B. Specific to Loring Heights, two proposed transportation improvement projects have been identified as part of discussions with the Loring Heights Neighborhood Association. These are: 1) construction of an elevated pedestrian/bicycle bridge at Mecaslin Street, and 2) widening of Bishop Street between Northside Drive and Howell Mill Road. It is agreed that the City of Atlanta and JAR will continue to work with the Loring Heights neighborhood and the adjacent commercial district to further these projects, as appropriate. As stated above, it is anticipated that BATAD #2 funds would be utilized to study and implement these projects.

C. Similar commitments to that of Home Park and Loring Heights were not made to the Ansley Park neighborhood as part of the Atlantic Steel site rezoning, primarily due to the distance of Ansley Park from the Atlantic Steel site. However, the extension of 17th Street to West Peachtree Street more closely lii the two areas. In addition, since Midtown Atlanta is undergoing significant changes related to new development in the vicinity of the 17th Street Extension, the project team recognized the need to develop similar commitments for the Ansley Park neighborhood. Therefore, it is agreed that the

City of Atlanta, in cooperation with EPA, GDOT, GRTA, and JAR, will work with Ansley Park to study the traffic patterns in the area and develop alternatives to minimize impacts of additional traffic on residential streets east of Peachtree Street.

D. In order to better characterize the cumulative traffic increase that is predicted to occur in Midtown and the Ansley Park neighborhood, it is agreed that JAR, with support from the Midtown Alliance and other developers in the area, will fund a comprehensive traffic study in this area. This study will attempt to determine the distribution of trips related to the Atlantic Steel development, as well as new development that is either under construction or planned to occur in Midtown. Midtown Alliance and Ansley Park will participate in the selection of a traffic consultaut that will conduct the work and will work with the City of Atlanta, GDOT, GRTA, JAR, and other developers to develop the limits of the study area, time-frame and scope of work for the study. It is anticipated that this study would identify future traffic calming measures, such as c&de-sacs, traffic barriers, speed humps, gates, control arms, and other traffic cahning devices.

E. Since BATAD #2 does not extend into the Ansley Park neighborhood, this dedicated funding source for traffic mitigation would not be available for the neighborhood. Therefore, it is agreed that the City of Atlanta and GRTA will take the lead in securing potential funding sources for any traffic calming measures identified as part of the study referenced above. Potential funding sources would be based in large part on the nature of the improvements identified by the study. It is anticipated that funds would be identified and pursued through the Atlanta Regional Commission planning and funding process. Funding for these measures is anticipated to come from a variety of public and private sources. For any traffic cahning measures that would require changes in traffic ingress and egress at certain intersections, the City of Atlanta commits to providing temporary barricades for an agreed upon trial period to determine the effects of eliminating (or improving) access.

F. Five alternatives were. presented to the Ansley Park neighborhood to discourage cut-through traffic on 1 7th Street into the neighborhood. The neighborhood agreed to discuss these alternatives with the adjacent commercial district to identify which of the alternatives would be preferred. It is agreed that GDOT, the City of Atlanta and JAR will continue to work with the Ansley Park neighborhood and the adjacent commercial district to determine a preferred alternative within the context of other potential improvements identified as part of the study referenced above.

G. Several concerns have been raised by the Georgia Historic Preservation Division (HPD), State Historic Preservation Office, the Georgia Trust for Historic Preservation, Atlanta Preservation Center, and citizens of Ansley Park, which is listed in the National Register of Historic Places, related to potential impacts of future transportation improvements to historic properties in Midtown. In recognition of these concerns, the City of Atlanta, in consultation with the Atlanta Urban Design Commission, agrees to

insure that historic properties that might be affected by any proposed transportation improvements are taken into account at the earliest possible opportunity. The City of Atlanta will also consult with HPD, the Georgia Trust for Historic Preservation, Atlanta Preservation Center, and Ansley Park neighborhood in this effort.

5. **DISPUTE RESOLUTION**

Any dispute which arises under or with respect to this MOU will in the first instance be subject to informal negotiations between the undersigned parties. The period of informal negotiations will not exceed twenty (20) calendar days from the time the dispute arises unless that period is extended by a written agreement of the parties to the dispute. The dispute will be considered to have arisen when one party sends to the other parties a written Notice of Dispute. In the event that the parties cannot resolve a dispute by informal negotiations, the parties may invoke non-binding mediation by setting forth the nature of the dispute with a proposal for resolution in a letter submitted to a mutually agreed upon third party mediator.

6. **TERMINATION**

Each party to this Memorandum of Understanding may terminate it for any reason after providing thirty (30) days prior written notice to all other parties. During the intervening thirty (30) days, the parties agree to actively attempt to resolve any outstanding disputes or disagreements.

7. SIGNATORIES

Execution and implementation of this Memorandum of Understanding evidences that the signatories agree to study the magnitude and cumulative effects of cut-through traffic in the neighborhoods and develop and implement means of minimizing these impacts.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, REGION IV

By:_____ Date:_____
Name:
Title:

GEORGIA DEPARTMENT OF TRANSPORTATION

By:_____ Date:_____
Name:
Title:

GEORGIA REGIONAL TRANSPORTATION AUTHORITY

By:_____ Date:_____
Name:
Title:

CITY OF ATLANTA

By:_____ Date:_____
Name:
Title:

JACOBY ATLANTIC REDEVELOPMENT, L.L.C.

By:_____ Date:_____
Name:
Title:

CONCUR:

ANSLEY PARK CIVIC ASSOCIATION

By:_____ Date:_____
Name:
Title:

HOME PARK COMMUNITY IMPROVEMENT ASSOCIATION

By:_____ Date:_____
Name:
Title:

LORING HEIGHTS NEIGHBORHOOD ASSOCIATION

By:_____ Date:_____
Name:
Title:

MIDTOWN ALLIANCE

By:_____ Date:_____
Name:
Title:

APPENDIX J

MICROSCALE CARBON MONOXIDE IMPACT ASSESSMENT FOR THE ATLANTIC STEEL DEVELOPMENT PROJECT

Microscale Carbon Monoxide Impact Assessment for the Atlantic Steel Development Project

Randall Guensler, Ph.D.
Michael 0. Rodgers, Ph.D.
Wiiam H. Bachman, Ph.D.
John D. Leonard II, Ph.D.

March 18, 1999

INTRODUCTION

Hagler Bailly Services, Inc., is under contract to the US Environmental Protection Agency to evaluate the environmental impacts of redeveloping the Atlantic Steel site in Midtown Atlanta. As part of the modeling of the development impacts, EPA required assistance in evaluating whether the proposed development would produce new CO hotspots in the surrounding neighborhood. To provide that support, the contractor assembled a microscale modeling team made up of staff from the Georgia Institute of Technology who served as project subcontractors. Drs. Randall Guensler and Michael Rodgers led the research team and directed the research and modeling tasks summarized in this document.

The Atlantic Steel project is a major urban development located in downtown Atlanta. Freeway access to the area is proposed from I-75 between Howell Mill road and 14th Street. Because the project will yield a significant increase in number of trips generated and attracted to the local area, and vehicle miles of travel on arterial roads and freeways, it is necessary to undertake an analysis of the local air quality impacts expected to result from the development. For federal agency approvals to be issued, the project must not create a violation of the ambient air quality standards for carbon monoxide. Figure 1 illustrates the proposed project location near the Georgia Institute of Technology.

The research team developed the modeling framework using a variety of off-the-shelfmodeling tools. The MOBILE5a emission rate model and CALINE4 line, source dispersion model served as the analytical tools of choice for this project. A geographic information system (GIS) was employed to link standard regional travel demand model results with the line source analyses. PERL scripts and FORTRAN programming was employed to link corridor travel simulation model results with the line source analyses. Data input files were provided by Hagler Bailly Services, Inc., Moreland Altobelli, Inc., the Georgia Department of Transportation, Atlanta Regional Commission, and Georgia Institute of Technology. The GIS graphics for network and model documentation were developed and links and receptor sites were coded for input to the CALINE4 model. The team reviewed aggregate model outputs and developed appropriate volumes and speeds for microscale analyses. The team also developed and documented all required meteorological parameters and emission rates for use in analyses.

The research team developed new program code to feed the outputs of a variety of vehicle activity and emission rate models into CALINE4 analyses. The new model code was non-invasive, in that the standard models were not modified. Instead, the team developed code that would allow standard models and output data tiles to be called and run for any desired conditions. The new code allowed the modeling team to run analyses for hundreds of roadway links and receptor sites, predicting worst-case pollutant concentrations throughout the project region. The model code predicts and displays the worst-case wind angle for each receptor in the region. Standardized graphical output reports were prepared for receptors and links, and vectors illustrate the wind direction for worst-case concentrations at receptors. The team also selected additional receptor sites for modeling based on their familiarity with the local region and their professional judgment.

Figure 1 - Atlantic Steel Project Location and Current Roadway Infrastructure

The microscale analyses were based upon the CORSIM traffic simulation model, run for the years 1998, 2005, and 2025. The CORSIM analyses were prepared by Moreland Altobelli, Inc. using system constraints provided from 4-step travel demand model runs prepared by Hagler Bailly Services, Inc (TRANPLAN model runs for the years 2000 and 2015). The microscale modeling team made no changes to any of the TRANF'LAN or CORSIM runs.

The research team determined that the project is extremely unlikely to create a violation of ambient air quality standards for carbon monoxide in the foreseeable future. Analyses were developed for worst case morning and evening January conditions when traffic volumes are high, temperatures are cold, and meteorological conditions limit pollutant dispersion. All predicted peak one-hour carbon monoxide concentrations were less than 12 ppm under worst-case

conditions. The one-hour carbon monoxide standard is 35 ppm Analyses were conservative, with assumptions designed to over-predict pollutant concentrations. Given the temporal distribution of vehicle activity, decreased traffic volumes, increased travel speeds, lower emission rates, and increased pollutant dispersion after the peak hour, it is also extremely unlikely that the project will create a violation of the 8-hour standard for carbon monoxide (9ppm).

MISCROSCALE EMISSIONS MODELING

Microscale carbon monoxide impact assessment should be performed for worst-case conditions in the area of transportation projects to ensure that an adequate margin of health safety is provided for individuals expected to work or play in the area. Ambient air quality standards are expressed in units of potential personal exposure or concentration over an averaging time (35 parts per million of CO over a one-hour period, and 9 parts per million of CO over au 8-hour average period). Hence, analyses should examine concentrations expected result over l-hour and 8-hour period in areas where the population is expected to work, rest, or play for periods in excess of one hour. For transportation projects, microscale line source dispersion models are used to predict the concentrations of carbon monoxide in areas near the implemented project.

To ensure that potential violations of ambient air quality standards are identified before a highway-related project proceeds, microscale line source dispersion models are used to predict the downwind concentrations from planned projects. To provide a margin of safety in analyses designed to predict maximum concentrations, worst-case- trafficand meteorological conditions are employed. These worst case conditions are designed to provide a margin of safety for individuals who can be expected to live, work, or play in the area. If the analyses do not predict violations of ambient air quality standards under worst case conditions, the transportation system is not expected to yield air quality standard violations under typical operating conditions.

DEVELOPMENT OF TRAFFIC VOLUMES AND AVERAGE VEHICLE SPEEDS

As more and more vehicles use the roadway, traffic volumes (in vehicles/lane/hour) increase rapidly. When traffic volumes begin to approach 2100 to 2300 vehicles/lane/hour on freeways, travel speeds begin to drop rapidly. Roadway capacity (about 2400 vehicles/lane/hour on freeways) is achieved at about 35 mph. If travel demand surpasses roadway capacity, traffic flow enters what is known as congested flow conditions. Traffic densities continue to increase, vehicles begin stop-and-go driving conditions, and travel speeds drop so rapidly that traffic flow cannot be sustained at capacity levels. As congestion worsens, traffic flow drops and emission rates per vehicle-mile of travel increase. Similar relationships also exist on arterial roadways. Traffic volume estimates for roadways in microscale analyses are usually based upon either the outputs of traditional 4-step travel demand models or upon monitored traffic data (with applied growth factors). Average speeds are usually based upon post-processed travel demand model outputs, traffic simulation model outputs, or generalized relationships for au urban area based upon empirical studies.

Downwind concentrations from a roadway source are in direct proportion to the traffic volumes and vehicle emission rates. Doubling the traffic volume or source strength will roughly double the predicted increase in emissions concentrations (relative to background concentrations) under any given set of meteorological conditions. Because the net mass emissions from a roadway are a function of traffic volume and emission rate, it is important that both parameters be represented as accurately as possible.

This section outlines the methods employed to estimate the traffic volumes and average speeds for the roadway links analyzed in each of the present and future Atlantic Steel scenarios analyzed. The prime contractor provided model output results from two different transportation modeling approaches: 1) TRANPLAN, a standard four-step travel demand model used to predict future traffic conditions at the regional level, and 2) CORSIM, a simulation model designed to analyze traffic impacts at the corridor level. Hagler Bailly Services, Inc. prepared TRANPLAN model runs for the years 2000 and 2015. Moreland Altobelli, Inc. used the TRANPLAN outputs to prepare CORSIM traffic simulation model runs for the years 1998, 2005, and 2025. The microscale modeling team was tasked with estimating the carbon monoxide impacts of the future development using the detailed traffic simulation model outputs. The following subsections describe how each data set was handled to prepare input files for microscale analyses.

TRANPLAN Traffic Volumes and Speeds

The microscale modeling team prepared a spatial representation of the TRANPLAN network and developed a vehicle activity data set that could be used to verify the outputs of the traffic simulation model (which would in turn be used in CALINE4 analyses). The team proceeded as follows:

1. The binary loaded-network TRANPLAN files for the years 2000 and 2015 Atlanta were converted to ASCII loaded-networks using the TRANPLAN 'netcard.exe' utility program.
2. The ASCII network files were converted to an ARC/INFO (GIS product by ESRI) file, using custom software developed by Georgia Tech, and subsequently projected to Stateplane coordinates (NAD 1983, Meters, Georgia West).
3. The two network files were joined to create a single GIS flle containing both 2000 and 2015 estimated speeds, capacities, and daily volumes. The network spatial structure was verified (the files were identical in spatial structure except for the addition of links representing proposed post-project infrastructure changes). The 2015 network contained new links that dump project-generated trips on to Nortbside Drive on the west, State Street to the south, and Spring Street to the east.
4. The combined network file was then 'conflated' to a Georgia Department of Transportation spatially-accurate (1:24,000) road database. 'Conflation' is a term used to describe the transferring of attributes from one line file to another. The TRANPLAN network is designed for correct link connectivity, not for accurate spatial representation (shape points were not included between network connections). For accurate CO modeling, it is important to accurately transfer the estimated travel characteristics to an accurate spatial road network.
5. Coordinates for each node were assigned within ARC/INFO and written as attributes to each road segment as 'from' and 'to' coordinates.
6. A custom GIS software routine developed by Georgia Tech assigned roadway widths (traveled way). The 1994 Digital Ortho Quarter Quadrangle aerial photos were analyzed to

provide roadway traveled way data and an additional 3 meters was added to each side of the lane to establish the appropriate CALINE4 mixing zone widths.

7. The final road database containing -200 road segments was written to a DBASE IV file. For each roadway link, the file attributes included x, y coordinates for link origin and destination, link capacity, daily traffic volume, peak hour average speeds, and roadway width. An excel spreadsheet was created from the database tile so that peak-hour traffic volumes could be inserted and an ASCII output file appropriate for CALINE processing could be developed.
8. Daily traffic volumes were converted to peak hour volumes using information obtained from the Atlanta Regional Commission (Bachman, 1997). Peak hour factors for 7am and 7pm were set at 18% and 10% of daily traffic volumes, respectively (see Figure 2). These values should overestimate traffic volumes during these periods. For freeways, arterial?., connectors, and local roads, when demand exceeded capacity, capacity volumes were assigned for the hour (it is impossible to process more traffic through the link than the capacity level). For freeways, the hourly volumes at capacity are probably underestimates. The research team believes that greater traffic volumes than predicted by TRANPLAN can be haudled without significant drops in travel speed (capacityappears underestimated at 35 mph). Furthermore, the average speeds predicted by the TRANPLAN model are significantly lower than actually occur on the freeways. Hence, the microscale modeling team does not believe that the TRANPLAN model outputs should be used directly in the CALINE analyses. The assumed low average speeds significantly overestimate emission rates and will result in much higher predicted downwind concentrations than would occur at this site.
9. Each step was reviewed and verified to identity potential process errors.

TRANPLAN link coordinates, traffic volumes, and average speeds are contained in Appendix 1. An example of the loaded network can be seen in Figures 3 and 4, which provide coded link numbers and relative traffic volumes (by line thickness).

Figure 2 - Temporal Distribution of Onroad Activity

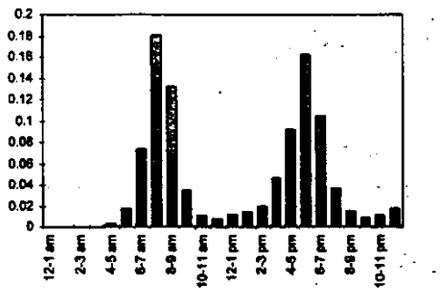


Figure 3 - Loaded TRANPLAN Network

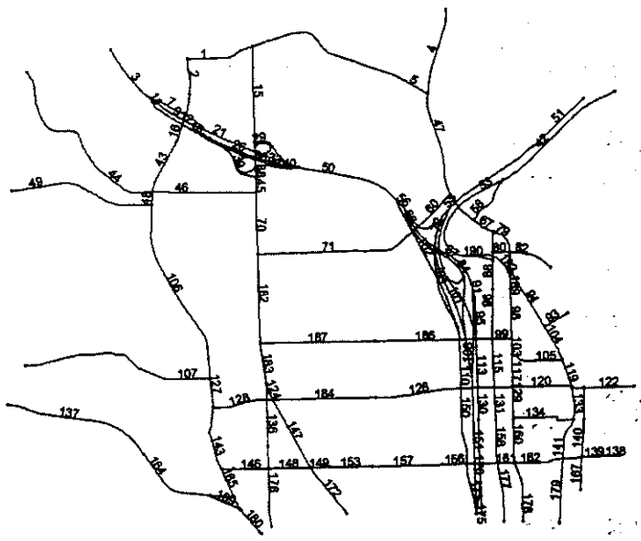


Figure 4 - TRANPLAN Network Loaded with Traffic Volumes (line width indicates relative traffic volume)

TRANPLAN Modeling Limitations

The TRANPLAN network for 2015 post-development suggested that 37,252 trips would be generated over a 24-hour weekday period. The majority of these trips were assigned to a link that heads west to Northside drive. Only 35% were assigned to the link that heads across I-75185 to Spring Street, and 0% were assigned to State Street that heads south. Further, the assigned speed for the new road segment headed towards Northside Drive is greater than 70 mph, while the surrounding links are all in the 30 mph and less range. These coding issues may result in overestimated congestion levels on some links and underestimated congestion levels on other links.

Average travel speeds on most local roads have not been verified with an independent data source. Current conditions could be validated through monitoring of local traffic in the morning and evening peak hours using laser guns.

The TRANF'LAN network shows the freeway overpass at 16th street rather than 17th street as shown in the CORSIM analyses. This will not impact traffic volume and speed predictions, but may impact the spatial allocation of emissions in microscale air quality modeling.

Moreland Altobelli, Inc. used the TRANF'LAN outputs to prepare inputs to the CORSIM traffic simulation model developed for the study area (described in the next section). The TRANPLAN predictions serve as input volumes to simulation sections. The accuracy of the input volume transfer from TRANPLAN to CORSIM was not analyzed on a link-by-link basis by the microscale modeling team. As will be discussed later, there is reason to believe that the total input volumes are low. However, as will also be discussed later, the microscale modeling team does not believe that the lower traffic volumes will result in different conclusions with respect to compliance with CO standards.

CORSIM Traffic Volumes and Speeds

FHWA's CORridor SIMulation (CORSIM) model is a microscopic traffic simulation model used to predict the interaction of traffic on a computerized version of the roadway network. A network of interacting links (or roads) is coded in the model and traffic flows in and out of the network boundaries (typically taken from travel demand model outputs) are provided as input model. The CORSIM model then simulates the interactions of vehicles with network controls (signal timing) and with other vehicles (using driver behavior, car following, and lane changing theory). CORSIM combines the NETSIM model for surface streets and the FRESIM model for freeways. Traffic assignment to various routes through the network is based upon user-optimization assumptions (that users try to minimize their travel time).' CORSIM is typically used to evaluate the potential traffic impacts of geometric design and signal timing improvements. A variety of other transportation strategies (such as rapidaccident detection and response) are analyzed using CORSIM. More information on the CORSIM model can be found at http://www.fhwa-tsis.com/.

Moreland Altobelli, Inc., developed CORSIM modeling runs for the years 1998, 2005, and 2025. The CORSIM model employs a spatial representation of the roadway network. As such, the x, y coordinates of all roadway links are contained in the CORSIM input files provided for the

various scenarios by Moreland Altobelli, Inc. The *TRAFVU* software package allows users to view and print CORSIM network links and model outputs. Figures 5 and 6 are the *TRAFVU* network prints for the baseline (1998) and future development (2005 and 2025) years. Notice that the future development years include the 17th street bridge crossing and coded freeway ramp system.

Initial traffic volumes into the network were based upon travel demand model outputs that were provided to Moreland Altobelli, Inc. by Hagler Bailly Services, Inc. The microscale modeling team double-checked these input files to ensure tbat proper coding was employed. The input data and assumptions were reviewed for accuracy and reasonableness for the existing conditions scenario (1998). Model output was also examined to ensure that the model had been calibrated correctly. Additionally, future scenarios (2005 and 2025) were analyzed for reasonable output.

Figure 5 - CORSIM Year 1998 Network

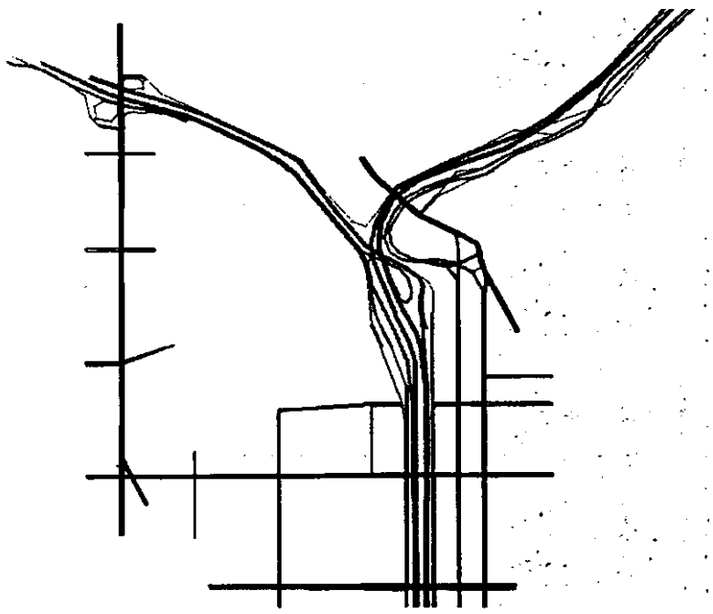
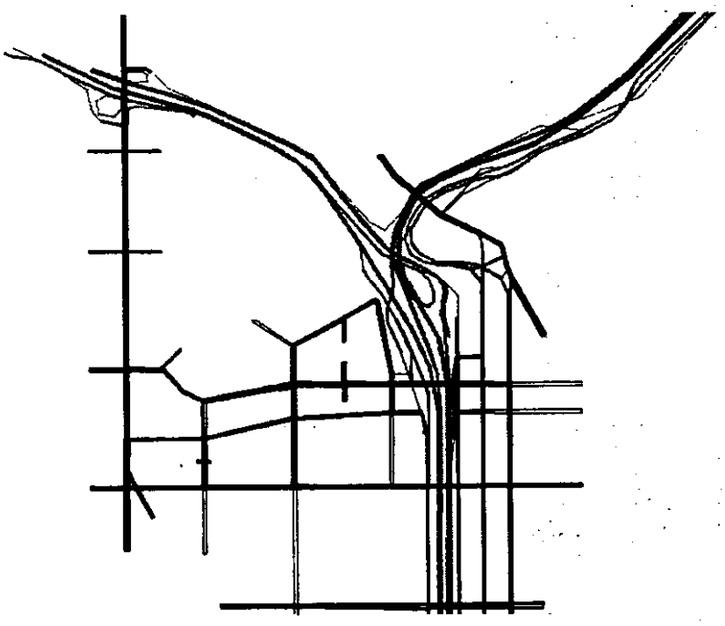


Figure 6 - CORSIM Year 2005 and'2025 Networks



Network Coding

The Atlantic Steel Development CORSIM files were reviewed for network accuracy. The base year transportation network (1998) was compared against a geographic information system (GIS) map for spatial accuracy. The GIS database map is based on a geometrically corrected TIGER tile street database. The network was examined for various spatial details. First, the CORSIM network was compared against the GIS database to ensure that no discrepancies existed between the two. All major and most minor roads were represented in the CORSIM network and no significant deviations from the street database were apparent. The lengths of several non-freeway network links were compared against the street database and all actual and network lengths were found to be in agreement. One-way streets were checked to ensure that they were indeed coded as one-way streets. The only major one-way streets are Spring Street, a major southbound arterial, and West Peachtree, a major northbound arterial Both were coded consistently.

The coded geometry of several intersections in the study network (number of lanes, presence of turning lanes and general intersection geometry) was compared to field data. All of the intersections reviewed were represented correctly in the CORSIM network. The only discrepancy is representation of grades. No grades were noted in the coded network as part of each link's geometry. In reality, a 9% grade is found on the N/S streets along Northside drive between Bishop and Bellemeade. Grades of varying degrees are found on other intersection approaches in the study area but were not accounted for in the model. Grade would affect free-flow speed and capacity. However, it is unlikely that this will have a significant impact on volume or speed outputs.

Although, there was no way to examine the geometric and spatial accuracy of the future scenarios, they were viewed TRAFVU, to make sure no obvious errors in the geometry of the network or unreasonable activity were present. No significant problems were noted and the spatial representation provided by Moreland Altobelli, Inc., is assumed to accurately reflect the project design.

CORSIM defaults were used for vehicle types, lane widths, and various other factors. No evidence suggests that this will negatively impact model output. The network was also viewed in TRAFW and checked to identify potential visible errors, such spillback on links where spillback would not be expected, vehicles traveling the wrong way on one-way links, etc. No visible problems were noted.

Freeflow speeds for non-freeway links appear reasonable. All non-freeway links are coded between 30 and 40 mph. This assumption is reasonable given that higher volumes and short to medium distances between traffic signals characterize all of the links.

A freeflow speed of 55 mph was specified for all freeway segments.' Given the excessive speeds noted in the Atlanta area, the freeflow speed assumption is low. A more reasonable estimate of freeflow speed would be around 70 mph. If traffic were flowing at freeflow speeds, the CO emissions would be underestimated using 55mph maximums (given the nature of speed-emission relationship in MOBILE5a). Fortunately, the conditions of concern in microscale modeling are morning or evening peak hour conditions when traffic flow is high and average speeds are significantly below freeflow values.

Nevertheless, improper coding of freeway link freeflow speeds also affects the CORSIM average speed predictions under more congested conditions. The impact is complex, because CORSIM employs car-following theory. That is, a car attempts to accelerate to freeflow speeds until it encounters a vehicle moving at slower speeds, at which time the car follows the lead vehicle., Hence, impacts of freeflow coding cascade through the system in a nonlinear fashion. The effects of freeflow coding differences will vary from link to link.

Signal timing cycle lengths were examined for several intersections and compared against actual signal timing collected in the field. Field data were collected either in 1997 or 1998. Table 1, below, compares actual and coded network timings. The green time for the major approach is shown as well as the signal cycle. Most of the timing plans are similar except for West Peachtree and 14th street, which has a much shorter green for the. NB movement than that taken in the field. For the PM peak period, the Northbound approach has significant volumes since it is a 5 lane one-way segment. A shorter than actual green time for this result may result in reduced capacity, reducing travel speeds. This assumption will likely increase system emission rates and over-predict emissions from this link.

A potential flaw in the CORSIM network is that no pedestrian activitywas indicated. Pedestrian activity exists in the downtown section including areas east of I-85 around 14th and Spring, 10th and Spring, 14th and West Peachtree, and 10th and West Peachtree. Pedestrian activity may influence capacity and average speeds. Pedestrian activity could be significant for both present conditions and the future development since the development is being designed to encourage

pedestrian activity. Sections of 10" Street near Georgia Tech are also expected to experience pedestrian activity since a number of students park in the Homepark area and then walk to campus across 10th Street. In other portions of the study area, marginal pedestrian activity is expected including segments along 14th Street and Northside Drive.

Table 1: Comparison of Actual and Coded Intersection Timing

Intersection	Time Period	Green Time		Cycle Length	
		Field	CORSIM	Field	CORSIM
Spring & 16th Street SB	AM	40	60	80	90
West Peachtree & 14th NB	AM	70	40	100	120
Spring & 14th Street SB	AM	68	50	100	120
Northside & Deering NB & SB	AM	45	50	90	100
Northside & Deering NB & SB	PM	45	50	90	100

Average Speeds

CORSIM output tiles were examined to determine whether average speed estimates were reasonable. The existing scenario (1998) data were checked and links with speeds lower than 12 mph flagged. Once links with low average speeds were identified, their locations were compared with the network map to determine whether low reported speeds made sense logistically for these locations. All links identified as such, were either in locations were congestion was likely to occur or along links with short distances between traffic signals. These factors would be expected to cause lower than normal speeds.

CORSIM output for the AM and PM periods of the two future scenarios were also examined for excessively low or high speeds. Average speeds for non-freeway and freeway links were calculated by time period and compared across scenarios. Results are presented in Table 2. Average speeds vary only marginally from existing conditions. The only significant change is speed is that the PM average freeway link speed decreases from 39 mph in 1998 to 33 mph in 2005. The average speed then increases to 37 mph for the 2025 scenario (but should probably have decreased).

Table 2: Average Speeds by Link Category and Time Period

Scenario	Freeway Links		Non-Freeway Links	
	AM	PM	AM	PM
1998	40 mph	39 mph	19 mph	17 mph
2005	41 mph	33 mph	19 mph	18 mph
2025	39 mph	37 mph	17 mph	16 mph

The CORSIM analysis results did not depart significantly from expected average speeds. The microscale modeling team analyzed data that were collected by, the Georgia Department of Transportation along the freeway corridor in question for the months of January and February 1999. The data are collected and processed using Autoscope machine vision systems in the Atlanta Traffic Operations center. Average freeway speeds are recorded in five-minute bins for each station along the route between the Brookwood interchange and North Avenue. The

average of the minimum reported freeway speeds (in 5-minute bins) from all I75/85 Stations was calculated from the data. The average of the minimum reported freeway speeds along the northbound route was 50 mph between 6am and 7am, and 43 mph between 7am and 8am. The average of the minimum reported freeway speeds along the southbound route was 50 mph between 6am and 7am, and 3 1 mph between 7am and 8am. Given the serious congestion levels in the Atlanta region, these speeds might appear high to someone living outside the region. It is important to remember, however, that the most serious traffic bottlenecks in the region already restrict traffic flow into these freeway segments. Hence, traffic in this central freeway segment moves fairly smoothly unless there is a freeway incident that spills congestion queues into the study area. The CORSIM average 1998 average speeds may be a few mph higher than expected, but would not significantly impact the resulting microscale analyses.

Arterial Volumes

After checking for input errors, model output was examined to ensure that the model had been calibrated correctly. Actual turning movement counts were available for several intersections in the study area collected during a Georgia Tech research project between 1997 and 1998. After calculating approach arterial volumes from field data, actual versus model output arterial volumes were compared. Details are provided below in Table 3. As shown, volumes are comparable. The differences that exist may be attributed to daily fluctuations in traffic volumes. The only location of concern is West Peachtree at 15th street. A field data count yielded an hourly volume of 336 vehicles/hour (vph) for the morning peak period. The coded link for the same area in the CORSIM network was assigned a volume of 1896, a difference of 464%. West Peachtree is a 5-lane roadway heading north out of the downtown area. A volume of almost 2000 vehicles per hour seems unlikely for morning traffic in the reverse direction of peak traffic flow. With the exception of West Peachtree and 15th, the model appears to be giving reasonable volume outputs. However, the high CORSIM output volumes for West Peachtree represent a very conservative assumption in an air quality analysis which will over-predict emissions and pollutant concentrations.

Table 3: Comparison of Field and Network Coded Traffic Volumes

Location	Time Period	Field Counts	CORSIM	Percent Difference
Northside & Deering NB	AM	756	837	11%
Northside & Deering SB	AM	1446	1452	>1%
Northside & Deering WB	AM	214	198	-7%
Spring & 14th Street SB	AM	2105	2010	-5%
Spring & 16th Street SB	AM	1898	1956	3%
West Peachtree & 15th NB	**AM**	**336**	**1896**	**464%**
Northside & Deering NB	PM	1530	1734	13%
Northside & Deering SB	PM	1116	1068	-4%
Northside & Deering WB	PM	332	321	-3%
West Peachtree & 10th EB	PM	1396	1107	-21%
West Peachtree & 10th NB	PM	2164	2598	20%
West Peachtree & 10th WB	PM	928	1257	35%

Freeway Volumes

The freeway links tend to impact the CO concentration at any receptor site in the project area to a greater extent than arterials and local roads. Hence, the microscale modeling team compared the hourly traffic volumes predicted by CORSIM to those actually experienced in this corridor. To assess the adequacy of freeway traffic volume estimates, the microscale modeling team contacted Mark Demidovich of the Georgia Department of Transportation Traffic Operations Center. Although average speeds for the freeway links of concern were already available to the team via Internet access to a proprietary database, GDOT does not maintain a similar volumes database with public access. Mr. Demidovich provided traffic volumes and average speeds for the North Avenue station for December 8, 1998.

The monitored traffic volumes appear to be much higher than are currently being predicted by the CORSIM model. The maximum predicted CORSIM traffic volume at any station was 7,700 vehicles per hour (at about 22 mph average speed) at North Avenue. Traffic monitoring data indicate that the system handles more than 13,000 vehicles per hour at about 40 mph at this station. This analysis indicates: 1) the CORSIM entry volumes (feeding into the simulation) are currently set too low, and 2) Atlanta drivers are behaving akin to Los Angeles drivers with respect to gap acceptance. For the CORSIM model to predict the volumes and speeds correctly for tbis area, significant model calibration needs to be performed. As indicated earlier, the average speeds predicted by CORSIM are conservative and provide higher emission rates than would the higher speed estimates from monitoring data. However, the CORSIM traffic volume predictions on the freeway may be underestimated by as much as 60%.

CORSIM Model Shortcomings

The calibration findings indicate that the sponsor should undertake improved CORSIM modeling for the project. Improvements should be made to: 1) simulation entry volumes (based upon actual counts), 2) free flow speed settings, 3) pedestrian interactions, and probably 4) driver/vehicle aggressiveness settings (used in car-following equations). The 1998 CORSIM model runs should then be validated using current ground counts and speeds at various stations.

Use of CORSIM Traffic Volumes and Speeds in Microscale Analyses

Because the transportation network is spatially coded into the CORSIM input file, the x, y coordinates of the roadway links can be readily identified. A Perl script, was developed to process the various CORSIM input tiles for each year and pull from the input files all relevant roadway link parameters. The CORSIM output files contain the predicted traffic volumes and average speeds for each network link that result from the simulation run Another Perl script was developed to process the output tiles for these variables. Unfortunately, roadway widths are not employed in CORESIM modeling and are not contained in either the input nor output files. Because matching the roadway geometry of the TRANPLAN and CORSIM data files was too resource intensive (a conflation process would need to be employed) roadway widths for CALINE analyses were based upon the number of lanes multiplied by standard lane width parameters for various roadway types. An additional 3 meters was added to each side of the lane to establish the appropriate CALINE4 mixing zone width

DEVELOPMENT OF MOTOR VEHICLE EMISSION RATES:

The approved emission rate model for use in microscale transportation analyses is the US Environmental Protection Agency's MOBILE5a model. Motor vehicle emission rates are a function of vehicle fleet characteristics, onroad operating conditions, environmental conditions, fuel characteristics, and the implementation of various regional motor vehicle emissions control programs (such as inspection and maintenance). The MOBILE5a model provides the modeling tool to predict changes in vehicle emission rates (grams/mile) as a function of changes in these conditions over time and across regions. The MOBILE5a model is designed for use in regional modeling efforts, but is also the only approved model for use in estimating vehicle emission rates along transportation corridors and for microscale air quality impact assessment.

Emission rates were developed by the microscale modeling team by running the MOBILE5a model for each scenario, using standard MOBILE5a input files provided to by USEPA regional staff. These standard files are maintained by the region and reflect Atlanta-specific vehicle fleet characteristics, fuel specifications, and inspection and maintenance program requirements. Ambient temperatures and onroad vehicle operating conditions that applied in each of the modeled scenarios were developed based upon review of local environmental parameters (discussed in the next section) and review of the travel demand and simulation model runs (discussed in the previous section). The modification of each local area parameter for use in the scenarios is summarized in Appendix 2. To predict emission rates for various average speeds, each scenario was modeled in MOBILE5a in average speed increments of 2.5 mph. Appendix 3 contains the average speed vs. vehicle emission rate matrices for each scenario, ad were used to provide emission rate inputs to microscale dispersion model runs.

DEVELOPMENT OF METEOROLOGICAL PARAMETERS:

The dispersion modeling requires inputs of realistic "near worst case" meteorological parameters to determine ifviolation of National Ambient Air Quality Standards (NAAQS) are likely. These inputs include wind speed and direction, temperature, humidity and mixing height. Since the most likely violations are of the carbon monoxide standard during the winter months, January conditions were selected for the analysis. Because no environmental data are available for the property itself, the research team employed data from the best available sources. Each data source was selected to represent local conditions and proximal data sources were employed whenever possible. In some cases, extrapolations account for seasonal differences or differences in topography between the sampling site and the property in question. The parameters selected for use in the analysis are provided in the various tables included in this section. The data sources, extrapolations, and impacts on CO modeling are also discussed.

Wind Conditions:

To assess the wind speed conditions at the site, meteorological data were analyzed from two urban Photochemical Assessment Monitoring Sites (PAMS) sites in the Atlanta area. The Tucker site is located in suburban northeast Atlanta. The South Dekalb site located east Atlanta. Data were considered for January conditions from 1995 to 1999 for both sites. Both sites were

located within 20 km of the Atlantic Steel property and should be useful for assessing meso- and synoptic-scale wind conditions. More localized data are available from short-term studies on the Georgia Tech campus (-3 km south of the site) during the summers of 1992, 1995 and 1996. The Georgia Tech data were compared to the Tucker and South Dekalb data for the same time periods to assess the importance of smaller scale circulation patterns.

Mean Wind Speed

As expected for an urban site located away from urban canyons, the Georgia Tech data show slightly lower mean and median wind speeds for comparable periods than do the other sites. Because data from both PAMS sites indicate wind speeds at or below 1 meter/sec for more than 10 % of the time during the January period, the lower limit of accuracy for the dispersion model (1 m/sec) was used for all model runs.

Wind Speed Variability

Wind speed variability is derived from observation of the standard deviation of wind speeds over short (seconds to minutes) while the mean winds are derived from hourly averages. These data are considered unreliable if the wind speed is persistently low and at or near the limit-of-detection of the measurements. Thus for modeling purposes the standard deviation of the wind measurements is assumed to be 50% of the measurement (or modeling) limit or 0.5 meters/sec. This value is somewhat higher than that measured at the Tucker site of 0.26 meters/sec as would be expected due to the large number of "zero" reading at the Tucker site.

Wind Direction:

Wind direction data are those from the Tucker and South Dekalb PAMS sites and are for reference only since the dispersion model calculates a worst-case wind direction.

Wind Direction Variability:

Data from the Tucker PAMS site for January 1995 and January 1997 (when high time resolution data are available). These indicate a standard deviation of wind direction of 27.4 degrees for a five-minute averaging period based on one-second data. Since this is quite close to the default value or 25 degrees, the default value was used.

Wind Variable Summary:

All of the parameters in Table 4 are one to five percentile worst-case, except wind direction (median). Since wind speed is <1 m/sec for more than 10 % of the time during January the lower limit of model accuracy (1 m/sec) was used.

Table 4 - Summary of Site-Specific Wiid Conditions for CALINE4 analyses

Time of Day (24 hr clock)	Wiid Speed (meters/sec)	Wind Direction (degrees)	Miig Height (meters)	Wind Variability (Std. Dev.)
1 :00	1*	320	20	25 degrees
7:00	1*	285	22	25 degrees
13:00	1	235	160	25 degrees
19:00	1*	270	36	25 degrees

* A minimum wind speed of 1 meter/second is assigned due. to dispersion model limitations

Temperature and Humidity

The temperature data employed in the analyses are the NOAA climatological data for "mean coldest January day" for Atlanta, GA scaled to the mean diurnal temperature profile recorded at the Tucker PAMS site and rounded to the nearest degree. Relative humidity data are the 90'th percentile for non-saturated (fog) conditions for the Tucker, GA PAMS site from 1992-1997. Table 5 summarizes the appropriate ambient temperatures used in MOBILE5a and CALINE4 modeling.

Table 5 - Summary of CALINE4 Input Temperatures

Time of Day (24 hr clock)	Temperature (Celsius)	Relative Humidity*
1:00	-10	0.9
7:00	-10	0.9
13:00	-3	0.65
19:00	-5	0.75

Dispersion Mixing Height

Mixing heights were estimated from Southern Oxidants Study data, scaled for seasonal differences. During studies in August-September 1991, July-August 1992, September 1995 and July-August 1996 approximately 65 complete tethersonde profiles of wind, temperature and dew point were recorded on the Georgia Tech campus approximately 3 km south of the site. Based on these profiles, mean boundary layer breakup time was estimated to be two hours after sunrise (~8:30 am in January) with 80% of full boundary layer height achieved 3.5 hours after sunrise (-10 am in January). The data periods used to evaluate each time period are given in Table 6 below.

Table 6 - Mixing Height Seasonal Adjustments

Reference Time	Profile times (actual measurement periods)	Mean Mixing Height (meters)	Seasonal Adjustment	Model Mixing Height (meters)
1:00	22:00-6:00	25	0.78	20
7:00	6:00-9:00	28	0.78	22
13:00	9:00-18:00	160	1.0	160
19:00	18:00-22:00	36	1.0	36

Because the primary data sources occur in July-September and the evaluation period is for January, seasonal adjustment is required. Adjustments are made to the 1:00 and 7:00 samples based on the ratio of the mean mixing height for February and May from a rural site in west-central Georgia (Garrettson, 1997) collected by the same tethersonde equipment. Since these

measurements were made only during the evening and early morning, no corrections are applied to the daytime values. While this may represent some over-estimate of mixing height during this period, it has little practical significance due to the much lower mixing height predicted for the early morning period. These nocturnal and early morning mixing heights (20 and 22 meters) are in generally good agreement, however, with early estimates by Rodgers (1986) of between 16 and 30 meters for December conditions near the same site.

Surface Roughness

Surface Roughness was estimated using the procedure of Oke (1987) and Garratt (1977). The Logarithmic tethersonde wind profiles from the Georgia Tech campus were extrapolated to zero wind speed to produce a zero wind height. Based on this procedure, calculated zero wind heights on the Georgia Tech campus ranged from -0 to 51 meters with an average of 18.2 meters. Zero plane displacement at the measurement site (defined as 2/3 of mean effective canopy height (Sutton (1953)) is between 14.5 and 16.8 meters, yielding an estimated surface roughness of between 1.4 and 3.7 meters. In 1991, additional data were collected at another nearby site as part of the Southern Oxidants Study Atlanta Pilot Study a tall scaffold (h=25 meters). At this more open site data were collected at five elevations (1, 3, 6, 10 and 25 meters). These data yield an estimated zero plane height of 2.9 meters with a zero plane displacement of approximately 1 meter. Surface roughness can also be inferred by empirical relationships to Mean Effective Canopy Height (MECH). Guidance from the CAL3QHC model suggests a roughness length of 15 % of MECH. Assuming that the final site plan will be dominated by buildings of height H=50 meters with an average separation(D) of 125 meters (i.e. H/D=0.4), we calculate a MECH of -25 meters (Oke, 1978). This would correspond to a surface roughness of 3.75 meters. In practice there is likely to be a zero plane displacement of 10-15 meters and thus a surface roughness of 1.5 to 2.25 meters. These results are summarized in Table 7.

Table 7 - Estimates of Surface Roughness Length

Method	Zero Wind Level (meters)	Zero Plane Displacement (meters)	Surface Roughness (meters)	Range (meters)
Tethersonde	18.2	15.6 (14.5-16.8)	2.6	1.4-3.7
Tower	2.9	1.0	1.9	1.6-2.2
Semi-empirical	25 (MECH)	10 (0-18)	2.3	1.1-3.8
AVERAGE			**2.3**	**1.1-3.8**

Based on these results the surface roughness used in the dispersion calculations has been set to 2.3 meters (230 cm).

Background CO Concentrations

Ambient measurements of CO are very limited in the vicinity of the development site. The closest CO measurements to the site were conducted during the Georgia Tech/U.S.EPA Olympic Measurement program near the Olympic Natatorium on the Georgia Tech Campus preceding and following the Olympic games during the summer of 1996. (Measurements during the Olympics were not analyzed as being unrepresentative). These measurements give an average CO

concentration of 1.27 ppmv (Grodzinsky, 1998; Pearson, J.R., 1999). These data were scaled to the ratio of winter to summer CO concentrations recorded at the Tucker PAMS site (1.6x) to yield an estimated downtown background concentration of approximately 2.0 ppmv.

MODELING PROCEDURE AND RESULTS

One set of modeling analyses, based upon a traffic simulation model, was completed for the years 1998, 2005, and 2025. For each analysis set, separate runs were made for morning and evening peak conditions (7am and 7pm). Hence, six separate scenarios are reported.

To provide the graphical output for this project, each scenario analysis requires the computation of pollutant concentration contributions from each roadway link (350+) to each receptor site (a grid of 400 receptors) for 10 wind angles (36-degree increments). Thus, each scenario run involves more than 1.4 million dispersion computations. As such, the modeling routine is computationally resource intensive. 'Each raw scenario requires approximately 54 hours of analysis before predictions can be plotted.

The research team developed a link screening criteria based upon pollutant flux (grams of carbon monoxide per square meter of pavement). All links contributing less than 0.5 grams/hour/meter^2 of pavement were eliminated from the analyses because they do not significantly contribute to ambient pollutant concentrations at receptor sites. This assumption was validated by running one of the modeled scenarios using only those links with a pollutant flux of less than 0.5 grams/hour/meter^2. The results demonstrated that the net contribution to pollutant concentration at all receptor sites was less than Ippm. The analytical results indicate that a pollutant flux minimum may be a good criteria to include in tools that can be used for rapid screening analysis of proposed projects. The research team is undertaking additional research in this area to develop an optimized cutpoint for use in such analytical tool development.

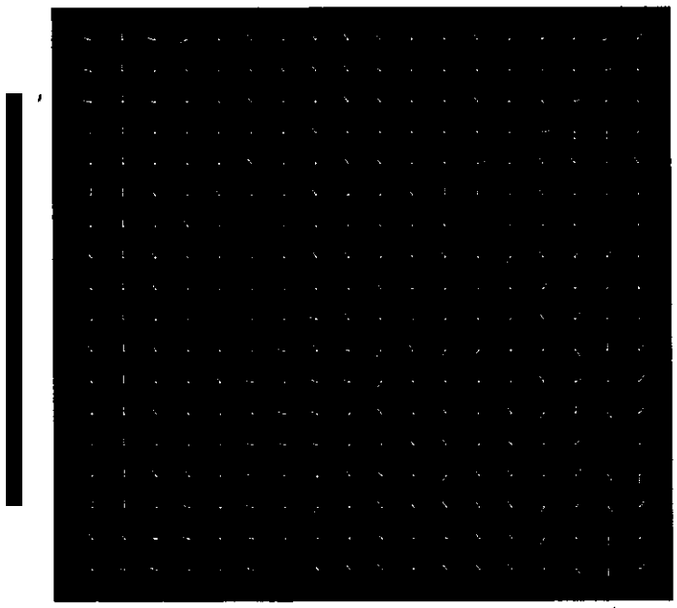
To improve the processing routine, more than half of the low volume, low emission rate links were eliminated from the analysis using the screening criteria. Before running the model, the background concentration was increased from 2ppm to 3 ppm to ensure that elimination of these minor links would not result in artificially low predictions. With the screening criteria in place, scenario analyses run in less than 24 hours.

A large ASCII output tile is generated from each modeling run The file contains a summary table of: worst case wind angle, maximmn predicted CO concentration for each receptor site, and contributions from each link in the system (the standard CALINE4 output format for receptors, except that the files are very wide due to the large number of receptors analyzed). This file is then input to a graphics program developed in PERL to summarize the outputs. An isopleth chart is developed illustrating the concentration of pollutants in a topographic map format. In addition, a wind angle diagram illustrates the worst case wind angle for each receptor site in a wind rose format.

Results for the Receptor Grid

The model outputs for the year 2000 CORSIM scenario are presented in Figures 7 and 8. Figure 7 provides the topographic view of maximum pollutant concentration at each point in space. The stated maximum for each receptor location in the region can result from different wind directions and is a function of roadway geometry and emissions flux from the roadway (a function of traffic volume, emission rate, and road area). Figure 7 also illustrates the wind angle for each receptor point in space under which worst-case CO concentrations results. The graphic outputs from all 10 modeling runs are presented in Appendix 4.

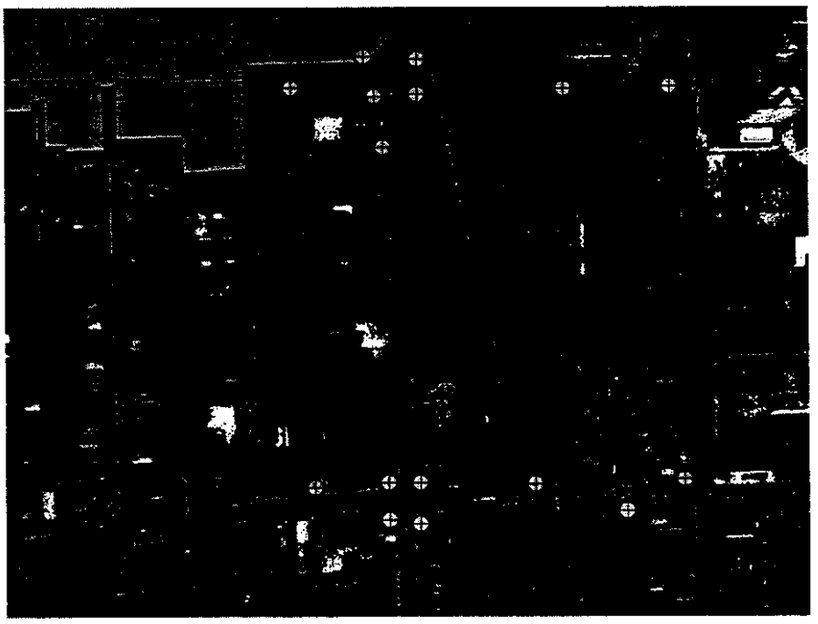
Figure 7 – Graphic Output of CALINE4 Model Run for the Year 2005 CORSIM Scenario, Illustrating Worst-Case CO Concentrations @pm) and Wind Directions



Specific Receptor Analyses

To ensure that the receptor grid modeling approach identities worst-case conditions, the microscale modeling team performed a second set of analytical runs using specific receptor sites of interest. Worst-case runs were performed for the CORSIM 1998 a.m. and p.m. runs (which yielded the highest CO concentrations). Receptors were placed at 3m distance from the intersections with the highest traffic volumes, to ensure that the previous grid placement did not overlook a potentially significant location (See Fiie 8). One receptor was even placed on the freeway overpass (which is not required by FHWA and EPA modeling guidance). Wind angle was refined to 2-degree increments to ensure that the larger worst case wind angle increments in the receptor grid runs did not overlook a significantly elevated CO concentration prediction between wind angles. In both scenario analyses, the maximum predicted l-hour concentration for any receptor never exceeded 9.9 ppm

Figure 8 – Specific Receptor Locations in the Refmed CALINE4 Model Run for the Year 1998 CORSIM Scenario (Maximum Predicted Concentrations did not Exceed 9.9 ppm).



CONCLUSIONS

The research team determined that the project is extremely unlikely to create a violation of ambient air quality standards for carbon monoxide in the foreseeable future. Analyses were developed for worst case morning and evening January conditions when traffic volumes are high, temperatures are cold, and meteorological conditions limit pollutant dispersion. All predicted peak one-hour carbon monoxide concentrations for all scenarios were less than 12 ppm under worst-case conditions.

The CORSIM traffic volume predictions for freeways may be underestimated by as much as 60% under the current model runs. The underestimation of traffic volumes by CORSIM impacts predicted CO emissions. Increasing traffic volumes on freeways by 60% will increase predicted CO concentrations. The increase in predicted CO concentrations is likely to be in the 3-5 ppm range. Hence the maximum predicted concentrations for the gridded receptor network should still not exceed 15 ppm

The one-hour carbon monoxide standard is 35 ppm. Analyses were very conservative, with assumptions designed to over-predict pollutant concentrations. Given the temporal distriition of vehicle activity, decreased traffic volumes, increased travel speeds, lower emission rates, and increased pollutant dispersion after the peak hour, it is also extremely unlikely that the project will create a violation of the 8-hour standard for carbon monoxide (9ppm).

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