CONNECTICUT ENVIRONMENTAL IMPACT EVALUATION
Prepared pursuant to RCSA Section 22a-1a-1 to 12, inclusive

FOR

GREATER BRIDGEPORT TRANSIT AUTHORITY FACILITY EXPANSION AND IMPROVEMENT BRIDGEPORT, CONNECTICUT

STATE PROJECT NO. 0410-T077

* * *

Prepared for:
GREATER BRIDGEPORT TRANSIT AUTHORITY
In Cooperation With
THE CONNECTICUT DEPARTMENT OF TRANSPORTATION

October 2010

Approved for circulation:

Harold Kluger
For Greater Bridgeport Transit Authority — 10/15/10 **Date**

Robbin L Caldwell
For Connecticut Department of Transportation — 10/19/10 **Date**

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ACRONYMS AND ABBREVIATIONS

ADA	Americans with Disabilities Act
ADT	Average Daily Traffic
BMPs	Best Management Practices
CCTIA	Coastal Corridor Transportation Investment Area
CE-D	Documented Categorical Exclusion
CEPA	Connecticut Environmental Policy Act
CERC	Connecticut Economic Resource Center
CERCLA	Comprehensive Environmental Response Compensation Act
CGS	Connecticut General Statutes
CO	Carbon Monoxide
CTDOT	Connecticut Department of Transportation
CTDEP	Connecticut Department of Environmental Protection
CTDPH	Connecticut Department of Public Health
dBA	A-weighted decibels
DEC	Direct Exposure Criteria
EIE	State of Connecticut Environmental Impact Evaluation
EMS	Emergency Services
EPA	U.S. Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FTA	Federal Transit Administration
GBRPA	Greater Bridgeport Regional Planning Agency
GBT	Greater Bridgeport Transit Authority
HVAC	Heating Ventilation and Air Conditioning
LEED	Leadership in Energy and Environmental Design
LID	Low-Impact Development
LOS	Level of Service
MNRR	Metro North Railroad
NAAQS	National Ambient Air Quality Standards
NDDB	Natural Diversity Database
NEPA	National Environmental Policy Act
NFPA	National Fire Protection Association
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
PM	Particulate Matter
POTW	Publicly-owned Water Treatment Works
PPM	Parts Per Million
RCRA	Resource Conservation and Recovery Act
RCSA	Regulations of Connecticut State Agencies
ROD	Record of Decision
RSR	Remediation Standard Regulations
SCEL	Stream Channel Encroachment Line
SHPO	State Historic Preservation Office/Officer

SIC	Standard Industrial Classification
SIP	State Implementation Plan
SPOCD	State Plan of Conservation and Development
TIA	Transportation Investment Area
TSB	Transportation Strategy Board
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
UST	Underground Storage Tanks

EXECUTIVE SUMMARY

Project Name: Greater Bridgeport Transit Authority Facility Expansion and Improvement Project (State Project No. 0410-T077)

Date: October 2010

Owner: Greater Bridgeport Transit Authority

State Sponsoring Agency: Connecticut Department of Transportation (CTDOT)

Federal Participating Agency: Federal Transit Administration (FTA) – For Federal NEPA Categorical Exclusion (CE) only

Preparer: Fitzgerald & Halliday, Inc., 72 Cedar Street, Hartford, Connecticut 06106

Project Background

An expanded and renovated maintenance and operations facility is being proposed on the site of the Greater Bridgeport Transit Authority's (GBT) existing facility to accommodate future transit vehicle and personnel growth as well as alleviate current site circulation and parking issues. The Proposed Action will be financed with both federal and state funds, and as such, is subject to the regulations and guidance established by both the National Environmental Policy Act (NEPA) of 1969, as amended (42 USC 4321 et seq.) and the Connecticut Environmental Policy Act (CEPA) (Connecticut General Statutes [CGS] Sections 22a-1 through 22a-1h, inclusive, and where applicable, CEPA regulations Section 22a-1a-1 through 22a-1a-12, inclusive, of the Regulations of Connecticut State Agencies [RCSA]). Under NEPA, the subject document is a Categorical Exclusion with documentation (CE-D) and under CEPA, an Environmental Impact Evaluation (EIE). The lead federal agency for project NEPA documentation is the Federal Transit Administration (FTA), while the Connecticut Department of Transportation (CTDOT) will serve as the lead state agency for CEPA documentation. A CE-D and EIE per the aforementioned regulations and lead agency guidance have been prepared.

Because the format of a Federal CE-D is considerably different than a State of Connecticut EIE, the Federal CE-D for this project has been submitted to the FTA as a separate stand-alone document. However, the environmental information, impact analyses, and overall project conclusions presented in both documents are the same; they are just presented differently.

The State of Connecticut has committed to spend $603,704 for the proposed new expanded maintenance and operations facility in Bridgeport, which is scheduled to open in 2012.

Project Description – The Proposed Action

GBT provides public transportation for fixed route and paratransit services to the City of Bridgeport and the surrounding towns of Fairfield, Stratford, and Trumbull. GBT's existing facility is located at One Cross Street in the City of Bridgeport in a building that was constructed in 1987. The facility is located to the south of Barnum Avenue, and the Metro North Railroad (MNRR) forms the southern boundary of the GBT property (Figure 1). The existing facility houses all of GBT's administrative, bus and paratransit vehicle storage, and maintenance functions associated with the current fleet. In the 22 years since moving into this facility, GBT has experienced growth in ridership, increased staffing levels, and is anticipating growth in its bus fleet. Currently, employee parking at the existing facility is insufficient and the route to/from the parking area to the administration building is unsafe. Most notable is the fact that the current GBT vehicle storage and maintenance facilities located on site are at capacity and are hindering future operations.

The Proposed Action includes the expansion of GBT's existing facility. The construction of this project will provide additional space for vehicle maintenance and indoor vehicle storage, along with additional space for training, operations, and administrative space to accommodate expected agency growth. A new 185-space employee parking deck will be constructed as part of the expansion project. Necessary repairs will also be made to the existing facility at the same time. All construction and/or renovations will take place on the existing GBT site. Figure 2 depicts the conceptual site plan of the Proposed Action.

The existing facility currently consists of three different departments of GBT: administration; maintenance; and operations. Throughout the design and construction phases, continued operation of these departments as well as GBT transit services will be a top priority. As part of the Proposed Action, the existing one-story, 9,800-square-foot Administration Building will be removed and a new Administration/Operations building will be constructed. When complete, this building will be 24,000 square feet and will consist of an employee parking deck on the second level and the new administration area on the third level.

The new, elevated, 185-space employee parking deck will serve multiple purposes. It will provide increased employee parking, serve as a platform for the administration level, and provide a safe route from employee parking to the Administration and Operations areas. The new parking deck will be level with the second floor of the new Administration/Operations building. The area underneath the employee parking level (ground level) will allow for paratransit vehicle parking and an emergency access ramp from grade, up to Cross Street, for all revenue vehicles.

The Proposed Action will also increase the size of the maintenance facility from 79,000 square feet to 110,000 square feet, to include:

- 4,800 square feet for a new vehicle paint booth;
- 14,000 square feet for new service lanes;
- 3,100 square feet for new vehicle maintenance bays;
- 8,000 square feet for reorganized parts storage and maintenance shops; and
- 79,100 square feet for bus and paratransit vehicle storage.

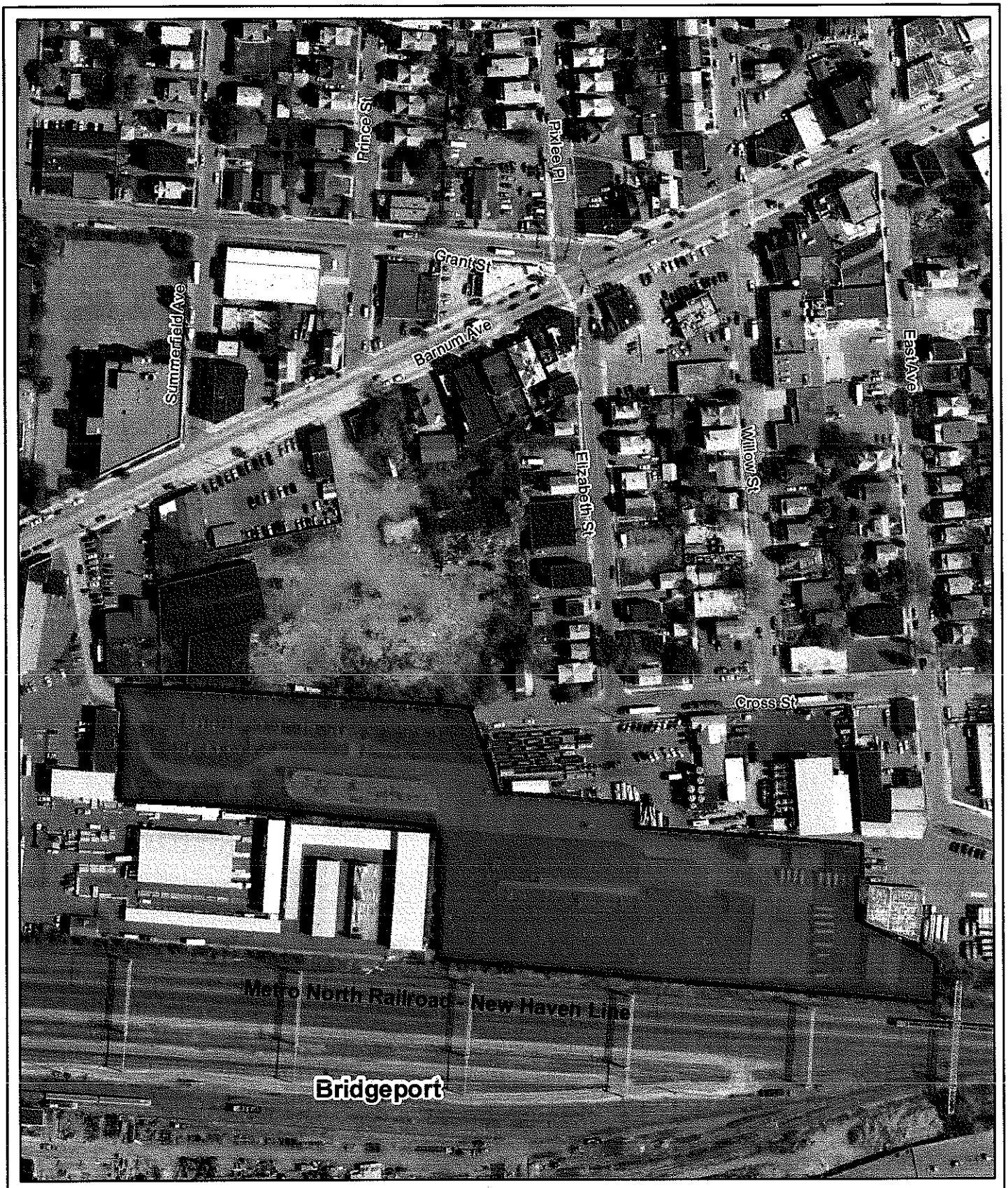
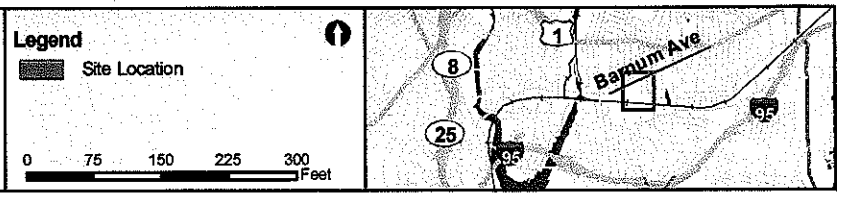


Figure 1: Site Location - Proposed Greater Bridgeport Transit Authority Maintenance/Operations Facility Site



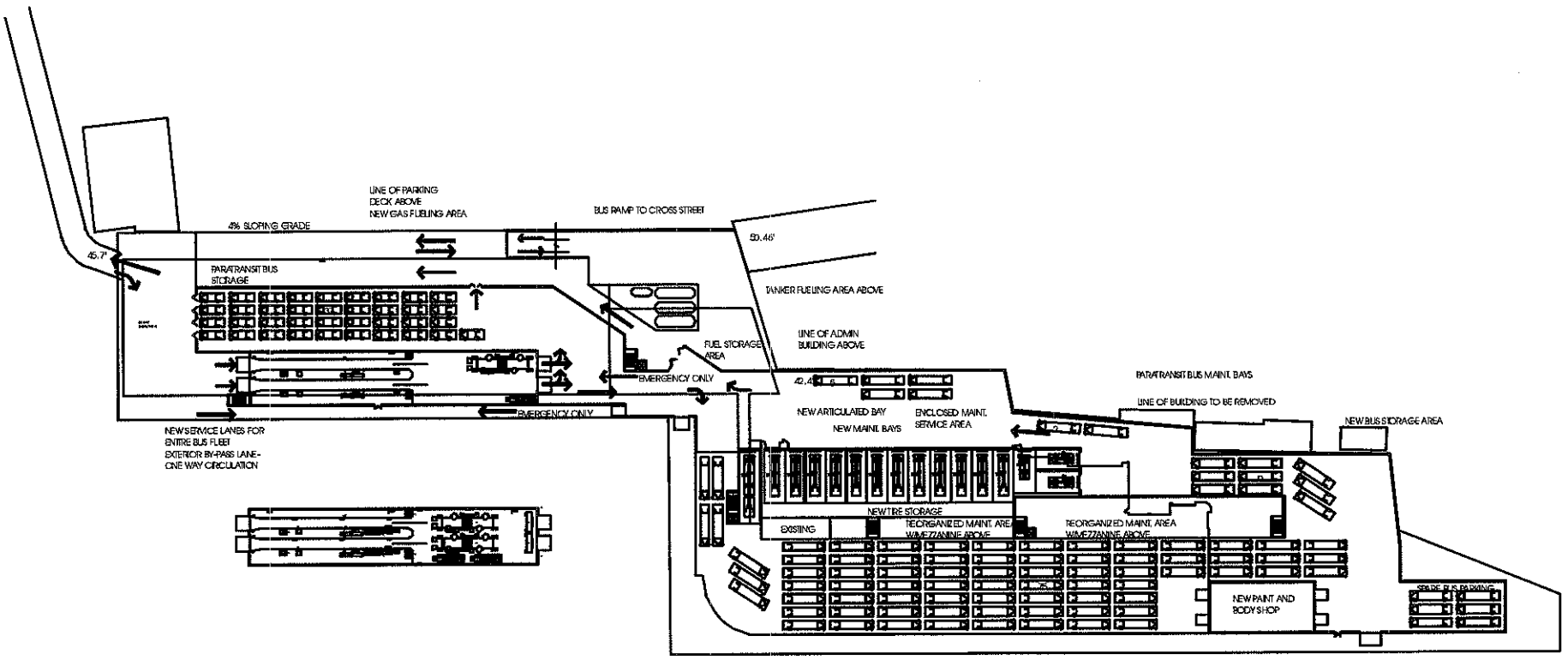
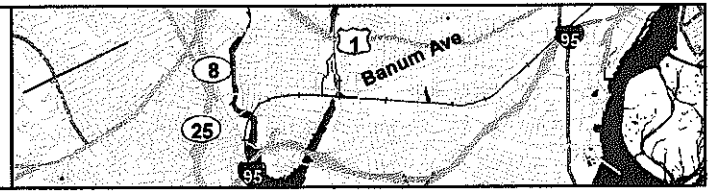


Figure 2: Proposed Action - Greater Bridgeport Transit Authority Maintenance/Operations Facility

Legend

— Proposed Action



While additional maintenance work bays will be constructed to accommodate the anticipated growth in the bus fleet, an 8,000-square foot section of the existing maintenance facility will be re-used by rearranging interior spaces to increase staff safety and efficiency, and to provide larger areas for parts storage. In an effort to provide separate maintenance work bays/areas for fixed-route and paratransit vehicles, the proposed design of the maintenance facility expansion will create a "separation of uses by fleet type" to maximize safety and efficiency. The internal bus circulation will be improved in such a way that:

- The number of overhead doors on the maintenance facility will be reduced, thereby reducing the maintenance cost for overhead doors;
- The amount of heat loss will be reduced, as the buses will circulate internally throughout the facility;
- Employee comfort will be improved since working conditions will be more stable and they will not have to subject themselves to the outside elements.

The new maintenance facility will also include a work bay large enough to accommodate one articulated bus. The complete expansion and renovation of the maintenance facility will allow GBT to store, maintain, and operate 105, 40-foot, fixed-route and 37 paratransit vehicles; this represents an increase of 48 vehicles by the design year of 2024.

The Proposed Action will consist of a sustainable design. Sustainable design reduces negative impacts on the environment as well as on the health and comfort of building occupants, thereby improving overall building performance. The basic objectives of sustainable design are to reduce consumption of non-renewable resources, minimize waste, and create healthy, productive environments. The Proposed Action will include the following sustainable design features:

- On-site power generation through photovoltaics and/or wind turbines;
- A 22,000-square foot vegetative roof (a.k.a. "green roof") will be constructed on the maintenance and administration building to reduce stormwater runoff and extend the life of the roof;
- Recycling rinse water used in the vehicle wash and recycling transmission fluid in special receptacles;
- Using renewable resources such as "plyboo" (plywood made from bamboo) to construct the new facility;
- Re-using or recycling materials from the existing GBT facility during construction;

Additionally, the design of the mechanical, electrical, and plumbing systems is also integral to energy savings. These systems will be designed to achieve a Leadership in Energy and Environmental Design (LEED) rating of Silver from the U.S. Green Building Council. By incorporating LEED principles and sustainable features into the design, the new GBT facility will become an asset to the City of Bridgeport and will conform to nationwide sustainability trends for

such facilities, demonstrating the City's efforts to improve the quality of life for those working at GBT and living in this community.

In order to keep GBT operations as optimal as possible during the design and construction process, the Proposed Action will be constructed in two phases. During Phase 1, the maintenance facility will be enlarged and reorganized and the new administration building will be constructed. It is anticipated that limited site work will be necessary to accommodate the construction work or to enhance the overall safety of the construction activities. Phase 2, will build on the work completed during Phase 1, and will include the construction of the employee parking area, the new service lane, an emergency exit lane, additional paratransit vehicle parking, and one additional maintenance bay that will be able to accommodate an articulated bus.

Construction of the Proposed Action is anticipated to begin within the Fall of 2010 and will be complete by 2012.

Purpose and Need

The purpose of the Proposed Action is to:

- Accommodate anticipated growth in GBT employees and transit vehicles over the next 20 years.
- Improve the overall efficiency of employee tasks.
- Enhance employee safety by improving vehicle and pedestrian access and circulation throughout the site.
- Improve employee working conditions by increasing building capacity and functionality.
- Incorporate or replace projected capital costs for maintaining the existing facility.
- Improve the energy efficiency of the overall facility and operations.

The Proposed Action will meet these purposes by providing expanded maintenance/administration, vehicle storage, and employee parking areas that will allow employees to work safely and efficiently. Additionally, the facility expansion and improvements will allow GBT to expand their services to better accommodate future increased demand and ridership.

GBT currently stores, maintains, and operates 66, 40-foot, fixed route and 28 paratransit buses. The current transit fleet now exceeds the space allocated for maintenance and storage in GBT's maintenance building. Currently, some vehicles are stored outside of the building which adversely affects the vehicle and the employees work environment, particularly in the winter months. The size of the maintenance area and the number of maintenance work bays are directly proportional to the size of the bus fleet; therefore, if the maintenance area and the number of work bays are not expanded, GBT will not be able to increase their fleet to better serve the community.

The administration building no longer has the space to accommodate further growth. Hiring new employees, as well as retaining well-trained workers is an important consideration for a successful transit authority. The existing office spaces and storage areas have been maximized to

accommodate the current workforce. This has created an inefficient work environment where employees have cramped work spaces, little to no privacy for conference or work-related telephone calls, and must work with an out-dated communications system. Modernizing and reorganizing employee spaces and amenities would be a helpful tool in promoting employee satisfaction and additional service.

The employee parking area has also reached its capacity and cannot accommodate additional vehicles. If additional employees were to be hired, on-street parking on Cross Street and other neighborhood streets would become a necessity. In order to avoid inconveniencing adjacent homeowners, businesses, and GBT employees, the provision of additional on-site parking is essential.

With the existing site and buildings at capacity, circulation within the site has become problematic:

- Employees and visitors must cross bus traffic lanes when walking from the existing parking area to the administration building;
- There is only one bus access point to the site and the emergency access is through a residential street. When using the emergency access, each bus must proceed through the employee/visitor parking area creating potentially dangerous conflicts;
- Buses are required to perform a three-point turn in order to turn onto the service access road. For safety reasons, this maneuver requires a dedicated GBT staff person at the site of the maneuver to assist the bus driver;
- After reaching the service lanes from either entrance, some buses are required to follow a reverse traffic flow, which causes inefficient conditions within the maintenance facility.

Reorganization, renovation, and expansion of the buildings on the GBT site will help to reduce dangerous conflicts between vehicles and pedestrians; increase the safety and efficiency of employees; and will provide a more effective circulation pattern.

Alternatives Considered

The long-term purpose of the Proposed Action is to expand and renovate the existing GBT facility to allow GBT to expand their transit services so they can better accommodate future increased demand and ridership. A total of two alternatives are considered in this EIE, a Build Alternative and a No Action Alternative.

Build Alternative

The Build Alternative involves constructing a new, state-of-the-art administration, operations, and maintenance facility on the existing GBT site located at One Cross Street, in Bridgeport, Connecticut. All construction and renovations will take place within the boundaries of the

existing, City-owned site. As part of the Build Alternative, the existing Administration/Operations building will be removed from the site and a new 24,000 square-foot building will be erected in its place near the center of the GBT site. The new Administration/Operations building will consist of three levels and will also include a new, elevated 185-space employee and visitor parking deck; the parking deck will be elevated to the level of the second story administration area. The area underneath this parking deck (ground level) will allow for paratransit vehicle parking, vehicle circulation, a new service lane, and an emergency access ramp from grade up to Cross Street for all revenue vehicles.

The Build Alternative will also include a 31,000 square-foot expansion of the maintenance facility; when complete, the maintenance facility will be 110,000 square feet. The existing 79,000 square-foot maintenance facility includes work bays for fixed route and paratransit vehicles, a paint shop, and a vehicle wash area. While additional maintenance work bays will be constructed to accommodate the anticipated growth in the bus fleet, much of the existing maintenance facility will be re-used by rearranging interior spaces to increase staff safety and efficiency and to provide larger employee work and break areas. The new maintenance facility will also include a work bay that is large enough to accommodate one articulated bus. The complete expansion and renovation of the maintenance facility will allow GBT to store, maintain, and operate 105, 40-foot, fixed-route transit buses and 37 paratransit vehicles by the design year of 2024.

Sustainable design features will be incorporated as part of the Build Alternative. Sustainable design reduces negative impacts on the environment as well as on the health and comfort of building occupants, thereby improving overall building performance. Sustainable design features are listed above in the Project Description – Proposed Action section of this EIE. In addition to these sustainable design features, the Build Alternative will include state-of-the-art mechanical, electrical, and plumbing systems designed to maximize energy savings. Overall, the Build Alternative will be designed to achieve a LEED Silver Rating from the U.S. Green Building Council.

No-Action Alternative

The No Action Alternative would involve no new construction. As a result, no environmental impacts would occur from this alternative. However, no new vehicle storage, vehicle maintenance, or employee parking facilities would be constructed under this alternative; therefore, the current capacity, safety, employee parking demand, and vehicle/pedestrian circulation issues at GBT would not be alleviated. The No Action Alternative does not meet GBT's stated purpose and need.

Alternative Sites Controlled or Reasonably Available

Other than the current site, GBT is not aware of any other suitable sites that are large enough, easily accessible, and/or located immediately adjacent to the existing GBT facility. The existing GBT and Proposed Action site is also located within an area that already contains other light and heavy industrial uses; and in an effort to expand its economic base and reduce its reliance on manufacturing, the City of Bridgeport is undergoing an effort to rezone much of its industrial

property for mixed or other uses so that adjoining land uses are compatible. Moving the GBT facility to another location within the City does not comply with the future land use plan for the City.

It should be noted that there are other industrially-zoned properties adjacent to the Proposed Action site that were considered for purchase in the early phases of this planning process. These properties, however, are privately-owned and are not available for sale at this time.

Therefore, there are no other known reasonably available sites for the Proposed Action.

Impact Analysis Summary

The implementation of the Proposed Action will have minor adverse environmental impacts that can be largely mitigated. Environmental impacts and proposed mitigation measures are summarized in Table 1.

Table 1: Summary of Impacts and Proposed Mitigation

Resource	Impact Analysis	Mitigation
Land Use and Zoning	Proposed action is compatible with existing land use and zoning. No adverse impacts. No land acquisitions or displacements are required.	No mitigation required or proposed.
Consistency with Local and Regional plans	Proposed Action is consistent with local and regional plans.	No mitigation required or proposed.
State Plan of Conservation and Development (SPOCD) Consistency	Proposed Action is consistent with the SPOCD.	No mitigation required or proposed.
Traffic and Parking	No direct or indirect adverse impacts.	No mitigation is required or proposed.
Bicycle and Pedestrians	No direct or indirect adverse impacts.	No mitigation is required or proposed.
Air Quality	Potential temporary impacts from prolonged use of diesel powered vehicles during construction. Typical diesel air quality emissions include carbon monoxide, hydrocarbons, nitrogen oxides, and particulate matter (PM2.5).	Construction equipment will be required to comply with all pertinent state and federal air quality regulations. Construction period BMPs to be followed to reduce airborne dust, other particulate matter, and odorous substances arising from project operations.
Noise	Construction period impacts: Potential for continuous as well as intermittent (or impulse) noise to be experienced in the immediate project vicinity.	Construction noise is exempt under Section 22a-69-1.8(g) of the RCSA, however, construction noise will adhere to City of Bridgeport Noise Control Regulations.
Neighborhoods and Housing	No direct or indirect adverse impacts.	No mitigation is required or proposed.

Resource	Impact Analysis	Mitigation
Water Quality	No direct or indirect adverse impacts.	No mitigation is required or proposed.
Hydrology and Floodplains	No direct or indirect adverse impacts.	No mitigation is required or proposed.
Wetlands	No direct or indirect adverse impacts.	No mitigation is required or proposed.
Critical Environmental Areas and Endangered Species	No direct or indirect adverse impacts.	No mitigation is required or proposed.
Soils and Geology	No direct or indirect adverse impacts.	No mitigation is required or proposed.
Cultural Resources	No direct or indirect adverse impacts.	No mitigation is required or proposed.
Environmental Risk Sites and Hazardous Materials	Contaminated soils will be mitigated appropriately and may involve the hauling of these soils to a licensed disposal facility in order to eliminate potential exposure hazards.	Soil characterization will be required for this project and if soils are found to be contaminated, potential transport offsite to a licensed disposal facility will be required. Potential site contamination issues will be thoroughly coordinated with the CTDEP during project permitting and construction to ensure proper containment of any contamination threats. Lead-based paint or lead-contaminated soil, if confirmed on-site, will be identified, classified and disposed of in accordance with RCRA, CTDEP and CTDPH standards. If asbestos-containing materials are confirmed on-site, asbestos abatement will be performed by an asbestos abatement contractor licensed by CTDPH and in accordance with all applicable federal, state, and local regulations.
Aesthetics and Visual Effects	No direct or indirect adverse impacts. The new facility, as currently designed, will be state-of-the-art and will therefore be more visually appealing. The Proposed Action also will include a limited amount of buffer landscaping and also includes a 70,000 square-foot vegetative roof that will increase the facility's aesthetic appeal.	No mitigation is required or proposed.

Resource	Impact Analysis	Mitigation
Energy Uses and Conservation	Temporary increased local demand for fossil fuels and an increased demand for electricity during construction. Due to its sustainable design, the Proposed Action will be more energy efficient and will therefore reduce the amount of energy consumption at the site.	No mitigation is required or proposed.
Public Utilities and Services	Potential construction period utility service disruptions.	Proactive consultation with utility providers prior to construction to ensure full coordination on new service connections and to minimize utility service disruptions.
Public Health and Safety	No direct or indirect adverse impacts.	No mitigation is required or proposed.

List of Potential Permits and Approvals

The following permits, approvals, certifications, and registrations may be required for completion of the Proposed Action:

Federal

No federal permits, approvals or certifications are anticipated to be required for the Proposed Action

State

- CTDEP General Permit: Discharge of Vehicle Maintenance Wastewater (DEP-PERD-GP-010). Registration of a new permit will be required for the expanded maintenance facility.
- CTDEP General Permit: Discharge of Stormwater Associated with Industrial Activity (DEP-PERD-GP-14). The Stormwater Pollution Prevention Plan prepared under this permit will need to be revised to incorporate the expanded facility.
- CTDEP, Bureau of Air Management: New Source Review Permit

City of Bridgeport

- Petition to the City Planning and Zoning Commission
  - Site plan review
  - Special permit
  - Soil erosion and sediment control plan review
- Petition to the Zoning Board of Appeals

Coordination Process

Per CEPA requirements, a scoping notice for the Proposed Action was placed in Connecticut's Environmental Monitor on October 20, 2009. A Public Scoping Meeting was not conducted for this project as such a meeting was not requested by 25 or more individuals or by an association that represents 25 or more members during the 30-day scoping comment period. Only two resource agencies, the Connecticut Department of Environmental Protection (CTDEP) and the Connecticut Department of Public Health (CTDPH) provided scoping comments during the 30-day comment period. During data collection efforts to document the existing environmental conditions, several federal and state resource agencies were contacted for information as were local officials in the City of Bridgeport. A copy of the CEPA public scoping notice as well as responses received during the formal public scoping period (October 20, 2009 through November 20, 2009) are included in Appendix A. Substantive agency and local correspondence is also included in Appendix A.

Conclusion

The Proposed Action will provide expanded maintenance/administration, vehicle storage, and employee parking areas, as well as improve site access and circulation to reduce vehicle-pedestrian conflicts; all of these improvements will allow employees to work safely and efficiently. Additionally, the facility expansion and improvements will allow GBT to expand their services to better accommodate future increased demand and ridership. Potential adverse effects from the Proposed Action are limited and include only construction-period impacts relative to noise, air quality, energy usage, and stormwater. These impacts will be mitigated through landscaping and architectural/design treatments, proper management of materials and resources during and after construction, adherence to all applicable local, state, and federal regulations, and through ongoing coordination with resource agencies. Through its impact avoidance and mitigation measures, the Proposed Action will not incur any significant environmental, cultural or social impacts.

Review Period and Comments

Review agencies and other interested parties are offered an opportunity to provide comments and other pertinent information that would help define project environmental impacts, interpret the significance of such impacts, and evaluate project alternatives. Written comments on this document and any other pertinent information may be submitted to the agency contact listed below by delivery or postmark by December 3, 2010. A public hearing on the Proposed Action will be held on November 18, 2010 at 7:00 PM in the 2nd Floor Community Room of the Bridgeport Bus Station located at 710 Water Street,, Bridgeport, Connecticut.

The submitted materials and responses, along with the Executive Summary of the EIE, will be attached to a Record of Decision (ROD) that will be forwarded to the State of Connecticut Office of Policy and Management (OPM) for a determination of its adequacy.

State Agency CTDOT

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EIE Distribution List

State Representatives and Senators

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Hon. John Hennessy State Representative Legislative Office Building, Room 4068 Hartford, CT 06106-1591	Hon. Andres Ayala Jr. State Representative Legislative Office Building, Room 4022 Hartford, CT 06106-1591
Hon Auden Grogins State Representative Legislative Office Building, Room 4024 Hartford, CT 06106-1591	Hon Ezequiel Santiago State Representative Legislative Office Building, Room 4002 Hartford, CT 06106-1591
Hon Anthony Musto State Senator Legislative Office Building, Room 2100 Hartford, CT 06106-1595	Hon. Edwin Gomes State Senator Legislative Office Building, Room 3100 Hartford, CT 06106-1595

Town Officials

Hon. Thomas C. McCarthy, Council President Bridgeport City Council Office of Legislative Services 999 Broad St. Bridgeport, CT 06604	Ms. Fleeta Hudson, City Clerk City of Bridgeport 45 Lyon Terrace Room 204 Bridgeport, CT 06604
Barry W. Skinner, P.E., City Engineer City of Bridgeport 45 Lyon Terrace Room 216 Bridgeport, CT 06604	Michael Nidoh, Director of City Planning Office of Planning and Economic Development Bridgeport City Hall Annex - 2nd Floor 999 Broad Street Bridgeport, CT 06604

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Ms. Amey Marrella Commissioner Department of Environmental Protection 79 Elm Street Hartford, CT 06106	Mr. Kendall Wiggin State Librarian Connecticut State Library 231 Capitol Avenue Hartford, CT 06106
Ms. Karen Senich Executive Director Connecticut Commission on Culture & Tourism Historic Preservation & Museum Division 59 South Prospect St. Hartford, CT 06106	Mr. Robert M. Ward Commissioner Connecticut Department of Motor Vehicles 60 State Street Wethersfield, CT 06161

Hon. Brenda I. Sisco Acting Secretary Office of Policy and Management 450 Capitol Avenue Hartford, CT 06106-1308	Hon. J. Robert Galvin, M.D., M.P.H. Commissioner Department of Public Health 410 Capitol Avenue MS#13COM Hartford, CT 06106
Mr. David Fox Senior Environmental Analyst Department of Environmental Protection 79 Elm Street Hartford, CT 06102	Hon. Raeanne V. Curtis Commissioner Department of Public Works 165 Capitol Avenue Hartford, CT 06106
Ms. Joan McDonald Commissioner Dept. of Economic and Community Development 505 Hudson Street Hartford CT 06106	Mr. Judd Everhart Director of Communications Department of Transportation Office of Communications P.O. Box 317546 2800 Berlin Turnpike Newington, CT 06131-7546
Mr. Karl J. Wagener Executive Director Council on Environmental Quality 79 Elm Street Hartford, CT 06106	Mr. Raymond Jordan State Coordinator CT Department of Housing and Urban Development One Corporate Center, 19th Floor Hartford, CT 06103

Other

Mr. Mark Nielsen Executive Director Greater Bridgeport Regional Planning Agency 525 Water Street, Suite One Bridgeport, CT 06604	Mr. Scott Hughes, City Librarian Bridgeport Library Burroughs Building, Main Library 925 Broad Street Bridgeport, CT 06604

1. INTRODUCTION

1.1 DESCRIPTION OF PROPOSED ACTION

Background

An expanded and renovated maintenance and operations facility is being proposed on the site of the existing GBT to accommodate existing and future transit vehicle and personnel growth as well as alleviate current site circulation and parking issues. The Proposed Action will be financed with both federal and state funds, and as such, is subject to the regulations and guidance established by both the National Environmental Policy Act (NEPA) of 1969, as amended (42 USC 4321 et seq.) and the Connecticut Environmental Policy Act (CEPA) (Connecticut General Statutes [CGS] Sections 22a-1 through 22a-1h, inclusive, and where applicable, CEPA regulations Section 22a-1a-1 through 22a-1a-12, inclusive, of the Regulations of Connecticut State Agencies [RCSA]). Under NEPA, the subject document is a Categorical Exclusion with documentation (CE-D) and under CEPA, an Environmental Impact Evaluation (EIE). The lead federal agency for project NEPA documentation is the Federal Transit Administration (FTA), while the Connecticut Department of Transportation (CTDOT) will serve as the lead state agency for CEPA documentation. A CE-D and EIE per the aforementioned regulations and lead agency guidance have been prepared.

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GBT provides public transportation for fixed route and paratransit services to the City of Bridgeport and the surrounding towns of Fairfield, Stratford, and Trumbull. GBT's existing facility is located at One Cross Street in the City of Bridgeport in a building that was constructed in 1987. The facility is located to the south of Barnum Avenue, and the Metro North Railroad (MNRR) forms the southern boundary of the GBT property (Figure 1). The existing facility houses all of GBT's administrative, bus and paratransit vehicle storage, and maintenance functions associated with the current fleet. In the 22 years since moving into this facility, GBT has experienced growth in ridership, increased staffing levels, and is anticipating growth in its bus fleet. Currently, employee parking at the existing facility is insufficient and the route to/from the

parking area to the administration building is unsafe. Most notable is the fact that the current GBT vehicle storage and maintenance facilities located on site are at capacity and are hindering future operations.

The Proposed Action includes the expansion of GBT's existing facility. The construction of this project will provide additional space for vehicle maintenance and indoor vehicle storage, along with additional space for training, operations, and administrative space to accommodate expected agency growth. A new 185-space employee parking deck will be constructed as part of the expansion project. Necessary repairs will also be made to the existing facility at the same time. All construction and/or renovations will take place on the existing GBT site. Figure 2 depicts the conceptual site plan of the Proposed Action.

The existing facility currently consists of three different departments of GBT: administration; maintenance; and operations. Throughout the design and construction phases, continued operation of these departments as well as GBT transit services will be a top priority. As part of the Proposed Action, the existing one-story, 9,800-square-foot Administration Building will be removed and a new Administration/Operations building will be constructed. When complete, this building will be 24,000 square feet and will consist of an employee parking deck on the second level and the new administration area on the third level.

The new, elevated, 185-space employee parking deck will serve multiple purposes. It will provide increased employee parking, serve as a platform for the administration level and provide a safe route from employee parking to the Administration and Operations areas. The new parking deck will be level with the second floor of the new Administration/Operations building. The area underneath the employee parking level (ground level) will allow for paratransit vehicle parking and an emergency access ramp from grade, up to Cross Street, for all revenue vehicles.

The Proposed Action will also increase the size of the maintenance facility from 79,000 square feet to 110,000 square feet, to include:

- 4,800 square feet for a new vehicle paint booth;
- 14,000 square feet for new service lanes;
- 3,100 square feet for new vehicle maintenance bays;
- 8,000 square feet for reorganized parts storage and maintenance shops; and
- 79,100 square feet for bus and paratransit vehicle storage.

While additional maintenance work bays will be constructed to accommodate the anticipated growth in the bus fleet, an 8,000-square foot section the existing maintenance facility will be re-used by rearranging interior spaces to increase staff safety and efficiency, and to provide larger areas for parts storage. In an effort to provide separate maintenance work bays/areas for fixed-route and paratransit vehicles, the proposed design of the maintenance facility expansion will create a "separation of uses by fleet type" to maximize safety and efficiency. The internal bus circulation will be improved in such a way that:

- The number of overhead doors on the maintenance facility will be reduced, thereby reducing the maintenance cost for overhead doors;
- The amount of heat loss will be reduced, as the buses will circulate internally throughout the facility;
- Employee comfort will be improved since working conditions will be more stable and employees will not have to subject themselves to the outside elements.

The new maintenance facility will also include a work bay large enough to accommodate one articulated bus. The complete expansion and renovation of the maintenance facility will allow GBT to store, maintain, and operate 105, 40-foot, fixed-route and 37 paratransit vehicles; this represents an increase of 48 vehicles by the design year of 2024.

The Proposed Action will consist of a sustainable design. Sustainable design reduces negative impacts on the environment as well as on the health and comfort of building occupants, thereby improving overall building performance. The basic objectives of sustainable design are to reduce consumption of non-renewable resources, minimize waste, and create healthy, productive environments. The Proposed Action will include the following sustainable design features:

- On-site power generation through photovoltaics and/or wind turbines;
- A 22,000-square foot vegetative roof (a.k.a. "green roof") will be constructed on the maintenance and administration building to reduce stormwater runoff and extend the life of the roof;
- Recycling rinse water used in the vehicle wash and recycling transmission fluid in special receptacles;
- Using renewable resources such as "plyboo" (plywood made from bamboo) to construct the new facility;
- Re-using or recycling materials from the existing GBT facility during construction;

Additionally, the design of the mechanical, electrical, and plumbing systems is also integral to energy savings. These systems will be designed to achieve a Leadership in Energy and Environmental Design (LEED) rating of Silver from the U.S. Green Building Council. By incorporating LEED principles and sustainable features into the design, the new GBT facility will become an asset to the City of Bridgeport and will conform with nationwide sustainability trends for such facilities, demonstrating the City's efforts to improve the quality of life for those working at GBT and living in this community.

In order to keep GBT operations as optimal as possible during the design and construction process, the Proposed Action will be constructed in two phases. During Phase 1, the maintenance facility will be enlarged and reorganized and the new administration building will be constructed. It is anticipated that limited site work will be necessary to accommodate the construction work or to enhance the overall safety of the construction activities Phase 2, will build on the work

completed during Phase 1, and will include the construction of the employee parking area, the new service lane, an emergency exit lane, additional paratransit vehicle parking, and one additional maintenance bay that will be able to accommodate an articulated bus.

Construction is anticipated to begin within the Fall of 2010 and will be completed by 2012.

1.3 PURPOSE AND NEED

The purpose of the Proposed Action is to:

- Accommodate anticipated growth in GBT employees and transit vehicles over the next 20 years.
- Improve the overall efficiency of employee tasks.
- Enhance employee safety by improving vehicle and pedestrian access and circulation throughout the site.
- Improve employee working conditions by increasing building capacity and functionality.
- Incorporate or replace projected capital costs for maintaining the existing facility.
- Improve the energy efficiency of the overall facility and operations.

The Proposed Action will meet these purposes by providing expanded maintenance/administration, vehicle storage, and employee parking areas that will allow employees to work safely and efficiently. Additionally, the facility expansion and improvements will allow GBT to expand their services to better accommodate future increased demand and ridership.

GBT currently stores, maintains, and operates 66, 40-foot, fixed route and 28 paratransit buses. The current transit fleet now exceeds the space allocated for maintenance and storage in GBT's maintenance building. Currently, some vehicles are stored outside of the building which adversely affects the vehicle and the employees work environment, particularly in the winter months. The size of the maintenance area and the number of maintenance work bays are directly proportional to the size of the bus fleet; therefore, if the maintenance area and the number of work bays are not expanded, GBT will not be able to increase their fleet to better serve the community.

The administration building no longer has the space to accommodate further growth. Hiring new employees, as well as retaining well-trained workers is an important consideration for a successful transit authority. The existing office spaces and storage areas have been maximized to accommodate the current workforce. This has created an inefficient work environment where employees have cramped work spaces, little to no privacy for conference or work-related telephone calls, and must work with an out-dated communications system. Modernizing and reorganizing employee spaces and amenities would be a helpful tool in promoting employee satisfaction and additional service.

The employee parking area has also reached its capacity and cannot accommodate additional vehicles. If additional employees were to be hired, on-street parking on Cross Street and other

neighborhood streets would become a necessity. In order to avoid inconveniencing adjacent homeowners, businesses and GBT employees, providing additional on-site parking is essential. With the site and buildings at capacity, circulation within the site has become problematic:

- Employees and visitors must cross bus traffic lanes when walking from the existing parking area to the administration building;

- There is only one bus access point to the site and the emergency access is through a residential street. When using the emergency access, each bus must proceed through the employee/visitor parking area creating potentially dangerous conflicts;

- Buses are required to perform a three-point turn in order to turn onto the service access road. For safety reasons, this maneuver requires a dedicated GBT staff person at the site of the maneuver to assist the bus driver;

- After reaching the service lanes from either entrance, some buses are required to follow a reverse traffic flow, which causes inefficient conditions within the maintenance facility.

Reorganization, renovation, and expansion of the buildings on the GBT site will help to reduce dangerous conflicts between vehicles and pedestrians and vehicles; increase the safety and efficiency of employees; and will provide a more effective circulation pattern.

2. ALTERNATIVES CONSIDERED

The long-term purpose of the Proposed Action is to expand and renovate the existing GBT facility to allow GBT to expand their transit services so they can better accommodate future increased demand and ridership. A total of two alternatives are considered in this EIE, a Build Alternative and a No- Action Alternative.

2.1 ALTERNATIVE ACTIONS

Build Alternative – Proposed Action

The Build Alternative involves constructing a new, state-of-the-art administration, operations, and maintenance facility on the existing GBT site located at One Cross Street, in Bridgeport, Connecticut. All construction and renovations will take place within the boundaries of the existing, City-owned site. As part of the Build Alternative, the existing Administration/Operations building will be removed from the site and a new 24,000 square-foot building will be erected in its place near the center of the GBT site. The new Administration/Operations building will consist of three levels and will also include a new, elevated 185-space employee and visitor parking deck; the parking deck will be elevated to the level of the second story administration area. The area underneath this parking deck (ground level) will allow for paratransit vehicle parking, vehicle circulation, a new service lane, and an emergency access ramp from grade up to Cross Street for all revenue vehicles.

The Build Alternative will also include a 31,000 square-foot expansion of the maintenance facility; when complete, the maintenance facility will be 110,000 square feet. The existing 79,000 square-foot maintenance facility includes work bays for fixed route and paratransit vehicles, a paint shop, and a vehicle wash area. While additional maintenance work bays will be constructed to accommodate the anticipated growth in the bus fleet, much of the existing maintenance facility will be re-used by rearranging interior spaces to increase staff safety and efficiency and to provide larger employee work and break areas. The new maintenance facility will also include a work bay that is large enough to accommodate one articulated bus. The complete expansion and renovation of the maintenance facility will allow GBT to store, maintain, and operate 105, 40-foot, fixed-route transit buses and 37 paratransit vehicles by the design year of 2024.

Sustainable design features will be incorporated as part of the Build Alternative. Sustainable design reduces negative impacts on the environment as well as on the health and comfort of building occupants, thereby improving overall building performance. Sustainable design features are listed above in the Project Description – Proposed Action section of this EIE. In addition to these sustainable design features, the Build Alternative will include state-of-the-art mechanical, electrical, and plumbing systems designed to maximize energy savings. Overall, the Build

Alternative will be designed to achieve a LEED Silver Rating from the U.S. Green Building Council

No-Action Alternative

The No-Action Alternative would involve no new construction. As a result, no significant environmental impacts would occur from this alternative. No new vehicle storage, vehicle maintenance, or employee parking facilities would be constructed under this alternative; therefore, the current capacity, safety, employee parking demand, and vehicle/pedestrian circulation issues at GBT would not be alleviated. The No Action Alternative does not meet GBT's stated purpose and need.

2.2 ALTERNATIVE SITES CONTROLLED OR REASONABLY AVAILABLE

Other than the current site, GBT is not aware of any other suitable sites that are large enough, easily accessible, and/or located immediately adjacent to the existing GBT facility. The existing GBT and Proposed Action site is also located within an area that already contains other light and heavy industrial uses; and in an effort to expand its economic base and reduce its reliance on manufacturing, the City of Bridgeport is undergoing an effort to rezone much of its industrial property for mixed or other uses so that adjoining land uses are compatible. Moving the GBT facility to another location within the City does not comply with the future land use plan for the City.

It should be noted that there are other industrially-zoned properties adjacent to the Proposed Action that were considered for purchase in the early phases of this planning process. These properties, however, are privately-owned and are not available for sale at this time.

Therefore, there are no other known reasonably available sites for the Proposed Action.

3. EXISTING ENVIRONMENT AND IMPACT EVALUATION

3.1 LAND USE, ZONING AND LOCAL AND REGIONAL DEVELOPMENT PLANS

Existing Setting

Land Use

The Proposed Action would occur at One Cross Street in the City of Bridgeport on the site of the existing Greater Bridgeport Transit Authority. The site currently contains the existing Administration/Operations building, a surface employee parking lot, a vehicle maintenance facility, and indoor and outdoor vehicle storage areas. The GBT site is bordered by Metro North Railroad (MNRR) right-of-way (ROW) to the south and is surrounded by industrial property and parking lots, and storage facilities on all other sides.

According to an existing land use map included in *Bridgeport 2020: A Vision for the Future,* the Proposed Action site is designated for institutional use. The Proposed Action site currently contains the existing GBT maintenance and administration buildings. Surrounding land uses are characterized by a mix of residential, commercial and industrial uses (refer to Figure 3).

Adjacent land uses currently include the Millo Lumber Yard, a storage/warehousing facility, as well as Planet Self Storage. Similar to the GBT facility, the lumber yard and warehouse also abut the MNRR which is to the south, while Planet Self Storage is accessed from Barnum Avenue. The Bridgeport United Recycling facility abuts the GBT site to the northeast.

Land uses to the north of Cross Street include medium-density residential areas on Elizabeth and Willow Streets. Smaller, light industrial uses can also be found on these two streets. Commercial strip developments are located to the west of the Proposed Action site along Barnum Avenue and include Wade's Dairy, Footloose, and Kitchen and Home Planning Center.

Zoning

According to the City of Bridgeport's Zoning Map (adopted August 6, 1996 and revised December 5, 2005, Bridgeport Planning and Zoning Commission), the site of the Proposed Action is zoned I-HI (Heavy Industrial). According to the *City of Bridgeport, Connecticut Zoning Regulations* (adopted August 6, 1996 and amended through January 10, 2005), the purpose of the I-HI zone is to reserve appropriate areas of the City for those high-impact industrial uses that, because of intensity, appearance, and the generation of dust, traffic and other hazards, are not desirable in or adjacent to non-industrial areas.

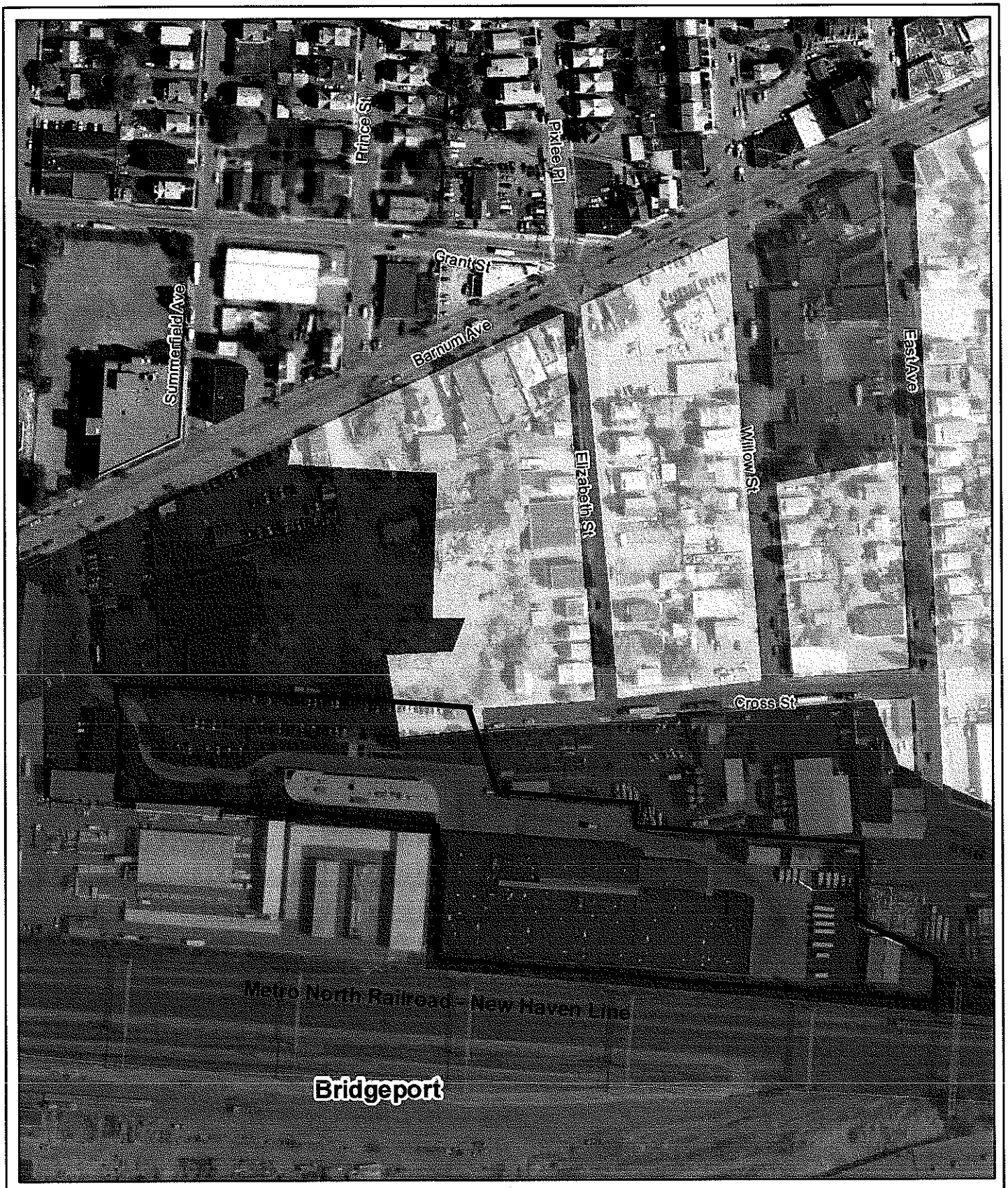
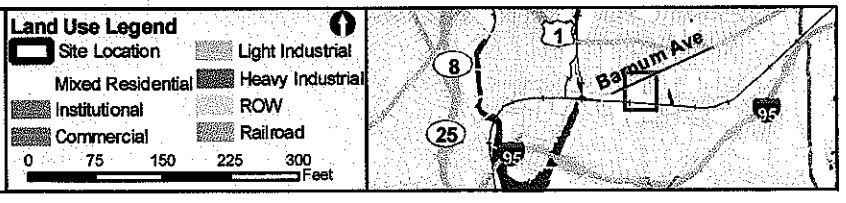


Figure 3: Existing Land Use - Proposed Greater Bridgeport Transit Authority Maintenance/Operations Facility Site



Development standards for the I-HI zone set minimum guidelines for safe, functional, efficient and environmentally sound developments and operations.

- I-HI (Heavy Industrial): Permitted uses include automotive and marine craft; wholesale trade; high- and low-impact warehousing and freight storage; high- and low-impact industrial services; transportation (except passenger terminals), communications, and essential services; detention facilities; and vehicle servicing facilities.

Adjacent land to the north of the Proposed Action site, but south of Cross Street, and lands adjacent to Barnum Avenue in the west are zoned I-LI (Light Industrial). The I-LI zone is intended to promote a concentration of industrial uses having minimal off-site impacts.

- I-LI (Light Industrial): Permitted uses include vehicle servicing facilities; transportation (except passenger terminals), communications, and essential services; low impact resource production and extraction; wholesale trade, and automobile and marine craft.

Land located north of Cross Street, between Elizabeth and Willow Streets, is zoned I-LI and R-B (Residence B). R-B zones promote medium density residential neighborhoods by allowing a sufficient variety of housing types, including two-family dwellings. R-B zones are designed to meet differing residential needs, while also encouraging neighborhood oriented retail/service businesses, and educational, medical, and entertainment facilities.

- R-B (Residence B): Permitted uses include single-family, two-family dwellings, as well as parks and open areas. Other uses allowed by special permit include day care centers, schools, religious institutions, office uses, and retail sales and services.

It should be noted that the City of Bridgeport is proposing changes to its Zoning Map. As part of these changes, properties currently zoned I-HI and located to the west of the Proposed Action would be changed to MU-LI zones, or mixed use-light industrial. A new zoning map including these changes could be implemented as early as Spring 2010.

Consistency with Local and Regional Development Plans

The project site falls within three successively larger planning regions, namely the City of Bridgeport, the Greater Bridgeport Regional Planning Agency (GBRPA), and the State of Connecticut. The State of Connecticut's Transportation Strategy Board, CTDOT, and the Office of Policy and Management (OPM) each contribute plans for guiding land use and transportation investments in the state.

The plans formulated at each level (local, regional, and state) articulate a vision, goals, and objectives for future land use and/or the transportation system. Key relevant findings of policy and planning reports developed for these regions are summarized below.

City of Bridgeport: The City of Bridgeport adopted *Bridgeport 2020: A Vision for the Future* as its Master Plan of Conservation and Development (Master Plan) in March 2008. This plan articulates goals and objectives for transportation, as well as future land use, conservation, and economic development. Those that are relevant to the Proposed Action include:

- "The City should continue to promote the use of alternative modes of transportation including pedestrian, bicycling, transit, train and ferry."

- "Ongoing transportation improvements including the bus station, streetscape aesthetic enhancements, improved connectivity between commuter parking and transit facilities and commuter parking expansion in Downtown Bridgeport should continue."

The Master Plan also includes a Future Land Use Plan that calls for the majority of Bridgeport's industrial land to be rezoned for mixed use. With the growth that is expected throughout the City and in the Downtown area, the mixed use designations will allow the City to have more flexibility in areas where development is likely to occur and will allow the city to capture jobs in projected growth areas. The Master Plan also identifies the need for a transitway on Seaview Avenue to support planned mixed-use re-development in that area as well as the Seaview Industrial Park.

GBT is located in the northern portion of the East End neighborhood, near the Barnum Avenue corridor. In 2006, the Bridgeport City Council adopted the *East End Neighborhood Revitalization Zone Plan*, which documents the neighborhood's vision for the future and recommended zoning and land use changes to make neighboring land uses more compatible and to remove blighted properties. Similar to the rest of Bridgeport, this neighborhood is poised for significant infill development/redevelopment such as mixed use developments along Stratford and Seaview Avenues, a senior living/medical complex, a family entertainment complex, the expansion of the Seaview Industrial Park, and enhanced connections with the waterfront and Pleasure Beach.

Greater Bridgeport Regional Planning Agency: The Greater Bridgeport Regional Planning Agency (GBRPA) planning region includes six communities in the southern portion of Connecticut: Bridgeport, Stratford and Fairfield are located along the shores of Long Island Sound, while Easton, Monroe, and Trumbull are inland communities. In January 2008, GBRPA adopted its *Growth Management Alternatives Regional Conservation and Development Plan Update*, in which GBRPA developed three growth management scenarios for the region for the next 20 years. The identified growth alternatives include:

- Current Trends - represents "business-as-usual" with future development following municipal adapted plans to that of the past few decades, which is characterized by low-density homogenous land uses.

- Regional Center - promotes better use of existing infrastructure and intensive redevelopment in the urban areas of the Region.

- Transit/Light Rail Centers – focuses growth along nodes situated on a transit network.

The purpose of these alternatives or scenarios is to provide decision makers with future visions for growth as they relate to the impacts on the form of land development and travel patterns within the region for the next 20 years.

The following goal areas, as they relate to the Proposed Action, support the three regional growth alternatives/scenarios:

Growth Trends/Managing the Region's Population - Special Areas for Consideration:

- Promote energy efficient structure and site design in public and private developments.

Economic Opportunities - Economic Development:

- Encourage a balanced distribution of employment opportunities near residential concentrations and public transportation systems;

Essential Regional Public Facilities and Utilities - Transportation:

- Provide and maintain an efficient multi-modal transportation system that facilitates the movement of people and goods in a manner that results in the least harmful social, economic, and environmental impacts;

- Increase the utilization of public transit throughout the Region by making public transit more efficient and by improving public awareness of the system.

The agency is also required by federal regulation to prepare a long-range transportation plan for the region and update it at least every three years. The *Regional Transportation Plan for the Greater Bridgeport Planning Region 2004-2028* is intended to alleviate existing transportation problems and deficiencies and plan the area's transportation system to meet future needs. It is not only important to improve and enhance mobility in the years ahead but to do so in a way that reinforces the area's land use development objectives and economic revitalization goals. The key relevant policies from this plan are:

- Provide full funding for commuter rail, fixed-route bus and paratransit operations.

- Replace transit vehicles on a life-cycle cost basis, purchase various administrative and maintenance capital equipment and rehabilitate local bus facilities to preserve and maintain essential local bus and paratransit services.

Connecticut Transportation Strategy Board Action Plan: Connecticut's Transportation Strategy Board (TSB) was established in 2001 to develop statewide strategies to "strengthen and expand the State's transportation system over the next 20 years to enhance Connecticut's prospects for sustainable economic growth and a premier quality of life". The TSB created five regional planning areas in Connecticut called Transportation Investment Areas (TIAs). Section 3(d) Public Act 01-5, *An Act Implementing the Recommendations of the Transportation Strategy Board* (the

Act) mandates that the participants in each TIA prepare an initial TIA Corridor Plan for submission to the TSB. The City of Bridgeport falls within the Coastal Corridor Transportation Investment Area (CCTIA). The 20-year plan for this area is highlighted below.

Coastal Corridor Transportation Investment Area: *Twenty-Year Strategic Plan for Transportation in the Coastal Corridor Transportation Investment Area* (Coastal Corridor TIA Board, November 6, 2002, and subsequent 2004 update). One of the key observations within this plan is that congestion on highways in the CCTIA is severe, particularly on Interstates 95 and 84. The plan concludes that there is an opportunity to develop alternative modes of transportation in the CCTIA, including bus transit, to help address the many issues raised by this congestion. The plan notes that based on return from the farebox, Connecticut's public bus system is one of the most productive in the country, suggesting that there is potential for increased ridership. The CCTIA plan makes a general recommendation to increase the commitment to transit in the region.

Relevant to the Proposed Action, the CCTIA recommends:

- "Expand Fairfield County inter-regional service by purchasing ten new buses (including articulated buses for the coastal link) and provide funding for additional local bus service, as proposed in Section 16.(a)(11) of the Act."
- "Where the demand exists, provide for more inter-district, inter-town, inter-regional bus routes like the Coastal Link, including routes linking rural communities."
- "Improve bus services for the elderly and the disabled."
- "Fund the Jobs Access Program that provides later evening bus service route extensions and customized paratransit services for residents in the cities of Bridgeport, New Haven and Waterbury, as proposed in Section 16.(a)(1) of the Act."

Connecticut Department of Transportation: In CTDOT's *Connecticut on the Move: Strategic Long-Range Transportation Plan 2009-2035* (June 2009), the Proposed Action is applicable to the following action item:

- "Provide for routine maintenance and upgrading of components of the bus transportation system such as rolling stock, bus maintenance facilities, information systems for passengers, revenue collection systems, etc."

Direct and Indirect Impacts

Land Use

The No Action Alternative would be a continuance of existing conditions, such that no direct or indirect impacts relative to land use or zoning would occur.

Impacts to land use associated with the Proposed Action were evaluated based on the effect that it will have on compatibility of land uses, land use patterns, and access to land. The Proposed Action will occur entirely within the property boundaries of the existing GBT maintenance and administration facility; therefore it would be a continuation of an existing land use, be consistent with surrounding land uses, and will not impact land use patterns or access to land.

The few residences that are located near the Proposed Action site currently co-exist with the existing GBT facility. As designed, the new GBT maintenance and operations facility will be state-of-the art, and will include special features such as vegetative roofing and planters as well as dark-sky compliant lighting fixtures that will lessen or eliminate adverse impacts on the nearby residential areas.

The Proposed Action will not result in any land acquisitions or displacements as the project will occur entirely on property currently owned and occupied by GBT.

Zoning

The Proposed Action will be a continuation of an existing bus maintenance and operations facility, and will therefore be consistent and compatible with the uses permitted within the I-HI (High Industrial) zone. As currently designed, the Proposed Action will be a sustainable facility that will create better working environments for employees of GBT and will reduce negative impacts on the environment and the surrounding community. Through sustainable design features such as using renewable or recycled resources during construction, vegetative roofing on many of the buildings to reduce stormwater runoff, and generating power on-site, the Proposed Action will achieve a LEED rating of Silver and will provide many benefits to GBT employees and the community.

Consistency with Local and Regional Development Plans

The No-Action Alternative would not support the recommended bus and transportation system improvements articulated in the local, regional, and state plans and policies; therefore it is not consistent with these plans.

Conversely, the Proposed Action is consistent with the local, regional, and state plans as it supports the policies and responds to the recommended actions in those plans. The City of Bridgeport is well-positioned for a substantial amount of infill development/redevelopment. The Proposed Action will provide a state-of-the art bus maintenance and operations facility that will allow the GBT bus fleet to grow in such a way that it meets future demand for bus services within the City; increased transit services and access to jobs are two strategies that are supported by local and regional development plans.

Proposed Mitigation

Land Use and Zoning

The Proposed Action will not result in any adverse land use or zoning effects, therefore, no mitigation is proposed as the Proposed Action is a continuance of an existing use. Additionally, the Proposed Action will not require any property acquisitions or displacements, therefore mitigation is not required.

Consistency with Local and Regional Development Plans

The Proposed Action is consistent with all local, regional, and state plans; therefore, no mitigation is proposed or required.

3.2 CONSISTENCY WITH STATE PLAN OF CONSERVATION AND DEVELOPMENT

Existing Setting

The Connecticut Office of Policy and Management (OPM) *Conservation and Development Policies Plan for Connecticut (2004-2009)* (the SPOCD) contains growth management, economic, environmental quality, and public service infrastructure guidelines and goals for the State of Connecticut. The overall strategy of the C&D Plan is to reinforce and conserve existing urban areas, to promote staged, appropriate, sustainable development, and to preserve areas of significant environmental value. The Locational Guide Map which accompanies the C&D Plan provides a geographical interpretation of the State's conservation and development policies.

As depicted on the 2004–2009 *Locational Guide Map*, the Proposed Action site in Bridgeport is located within a Regional Center. The State Action Strategy for Regional Centers is:

- Highest priority for affirmatively supporting rehabilitation and further development toward revitalization of the economic, social, and physical environment of Regional Centers.

The C&D Plan also contains six broad growth management principles and related policies to guide future development. Those pertinent to the Proposed Action include:

- Principle — Redevelop and revitalize Regional Centers and areas with existing or currently planned physical infrastructure.

Policy: Focus urban design to help old and new neighborhoods to function by mixing housing types and land uses, creating meaningful central places, and introducing new forms of open space. These communities should be distinguished by attractive design, and a diversity of people, places, open space, recreational opportunities, transportation options and economic opportunity.

Policy: Support existing communities and neighborhoods by targeting state resources to support infrastructure improvement and development in areas where the infrastructure is already in place.

Policy: Promote an urban economy that will attract and retain businesses, sustain business investment and create individual economic opportunity and jobs.

These policies provide support for the following actions:

- Bridgeport – new multi-modal transportation center, Harbor Yard entertainment complex, and maritime infrastructure improvements.

Consistency

The No-Action Alternative would not support maintenance, operations and other transportation improvements at the GBT's existing facility, nor would it promote the revitalization of this Regional Center with improvements to existing infrastructure. Consequently, the No-Action Alternative is not consistent with the policies and recommendations expressed in the SPOCD.

The Proposed Action is consistent with the vision, goals, and recommendations expressed in the SPOCD as it provides state-of-the-art improvements to existing infrastructure and also creates a transportation node that will enhance intra-community mobility and access to jobs. The Proposed Action would adhere to the SPOCD growth management principle "redevelop and revitalize regional centers and areas with existing or currently planned physical infrastructure."

3.3 TRAFFIC

This section describes existing traffic and parking conditions in the study area and the potential traffic and parking impacts associated with the Proposed Action. The construction of the Proposed Action will provide additional space for vehicle maintenance and indoor vehicle storage, along with additional space for training, operations, and administrative space to accommodate expected agency growth. A new 185-space employee parking deck will also be constructed as part of the expansion project.

Existing Setting

The GBT facility is located in the eastern section of Bridgeport. It is surrounded by Barnum Avenue and Cross Street. Barnum Avenue is characterized as an east-west minor arterial that provides two lanes of travel in each direction with surrounding commercial and residential uses. Adjacent parking is permitted on both sides of the roadway. Cross Street is a local road surrounded by residential and industrial uses. Speeds in the vicinity of the GBT range from 25 to 30 miles per hour.

A site drive is located off Barnum Avenue approximately 900 feet west of the five-leg intersection of Barnum Avenue with Pixlee Place/Grant Street/Elizabeth Street. The Barnum Avenue access to GBT is shared with People's Bank, Planet Self-Storage, and Bridgeport Lumber and is used only by GBT buses. Access to the GBT facility off Cross Street is primarily used for employees and visitors and maybe used as an emergency access for buses. The roadway transportation system in the vicinity of the GBT is shown in Figure 4.

Traffic Flow and Operations

An evaluation of intersections that are likely to be impacted the most by the Proposed Action was conducted. The intersections, as listed below, were selected for this evaluation in coordination with CTDOT. They are identified also in Figure 4.

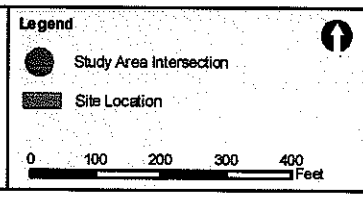
1. Barnum Avenue & Pixlee Place/Grant Street/Elizabeth Street (signalized)
2. Barnum Avenue & Summerfield Avenue (stop-controlled)
3. Barnum Avenue & GBT Site Drive (stop-controlled)
4. Barnum Avenue & Ridgefield Avenue (stop-controlled)

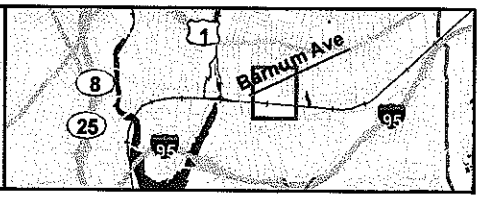
Existing turning movement count data was collected in January 2010, for the morning (7:00 AM – 9:00 AM) and afternoon (4:00 PM – 6:00 PM) peak travel periods. All traffic counts were collected under typical weekday conditions. In general, the peak hours of Barnum Avenue were observed between 8:00 AM - 9:00 AM and 4:00 PM - 5:00 PM. Signal phasing and timing data was observed in the field and was utilized for the operational evaluation of the signalized intersection.

Automatic traffic recorder (ATR) counts were collected over a 48-hour period bi-directionally at four locations. Locations selected, along with the daily count are provided below:

- Barnum Avenue east of the GBT site drive (10,200 vehicles per day)
- Barnum Avenue west of the GBT site drive (9,100 vehicles per day)
- GBT Site drive off Barnum Avenue (1,000 vehicles per day)
- Cross Street (400 vehicles per day)

Figure 4: - Traffic Study Area Near the Proposed Greater Bridgeport Transit Authority Maintenance/ Operations Facility Site





A Level-of-Service (LOS) analysis was conducted for all the study intersections using Synchro 6.0, which implements procedures presented in the *Highway Capacity Manual 2000* (Transportation Research Board). LOS is a measure of the delay experienced by vehicles at an intersection and is used to describe the operation of signalized intersections. It is expressed in an alphabetic scale, A to F. LOS A represents clear traffic flow and the best conditions. LOS F represents severely congested flow and is considered to be unacceptable. Intersections with long delay times at LOS E or F are least acceptable to most drivers and can be considered as "failing" in terms of traffic operations.

Level-of-service designation is reported differently for signalized and unsignalized intersections. For signalized intersections, LOS is defined in terms of delay, which is a measure of driver discomfort and frustration, fuel consumption, and lost travel time. Specifically, LOS criteria are stated in terms of average stopped delay per vehicle for the peak 15-minute period of the peak hour for the entire intersection and by approach. For unsignalized intersections, the analysis assumes that the traffic on the mainline is not affected by traffic on the side street. The LOS for each movement is calculated by determining the number of gaps that are available in the conflicting traffic stream. Based on the number of gaps, the capacity of the movement can be calculated. The demand of the movement is then compared to the capacity and utilized to determine the average delay for the movement. For unsignalized intersections, an overall LOS is not determined.

Results from the existing condition LOS analysis for the study area intersections indicate that all critical movements at the intersections operate at LOS C or better.

Parking

A surface parking lot is provided on-site with primary access provided off Cross Street for employee and visitor parking. There are currently 112 spaces provided on-site.

Crash Summary

Crash data on the study area roadways was obtained from the City of Bridgeport Police Department for the period from August 2006 to January 2010. A total of 24 crashes occurred in the study area during this timeframe (3 years and 5 months), with 4 of the crashes resulting in injuries. There were no crashes involving fatalities and two crashes involving pedestrians.

From review of the crash data, fifty percent (50%) of the crashes occurred near the intersection of Barnum Avenue with Elizabeth Street/Grant Street/Pixlee Place. The majority of collisions within the study area were either sideswipe or rear end collisions. Thirty-three percent (33%) of the crashes involved sideswipe collisions. These crashes are characterized by motorists driving too closely to other vehicles. Twenty-five percent (25%) of the crashes involved rear ends. The contributing cause of many of these crashes is characterized as motorists following too closely. Based on this crash data, there does not appear to be a pattern of correctable crash occurrence in the study area.

Table 2 provides a summary of the crash data on the local roadways.

Table 2: Crash Summary (August 2006 – January 2010)

Intersection/Segment	Total Number of Crashes	Number of Crashes Resulting in Injuries	Type of Collision	Number of Crashes
Barnum Avenue	1	1	Front End	1
Intersection of Barnum Avenue with Elizabeth Street/Grant Street/Pixlee Place	12	2	Angle	1
			Fixed object	1
			Rear-end	4
			Sideswipe	5
			Pedestrian	1
Intersection of Barnum Avenue with Ridgefield Avenue	9		Rear-end	2
			Sideswipe	3
			Turn conflict	4
Intersection of Barnum Avenue with Summerfield Avenue	2	1	Angle	1
			Pedestrian	1
Total	**24**	**4**		**24**

Source: Fitzgerald & Halliday, Inc.

Direct and Indirect Impacts

Traffic Impacts

No-Action Alternative

Background growth, planned and programmed developments, and roadway improvements were considered when determining future no-build traffic volumes. According to the City of Bridgeport, there are several large redevelopment projects in various stages of planning located within the East End neighborhood, all of which have the potential to impact the future demand for

transit services. In the direct vicinity of the Proposed Action, the property located to the northwest of the existing employee/visitor parking lot is currently being remediated; this site was a scrap yard and is now slated for 75,000 to 100,000 square feet of commercial development. Other projects currently completed or under construction within the vicinity of the Proposed Action include:

- 100,000- square foot expansion of the Seaview Industrial Park,
- 15,000-square foot expansion and renovation of warehousing space on Brookfield Road (located one block east of Cross Street) that will be used for the design and construction of Broadway and cruise line show sets, and a
- 25,000-square foot expansion of light industrial and manufacturing space on Bunnell Street (located west of the Proposed Action).

Based on similar metropolitan areas in Connecticut, a one and half percent (1.5%) growth rate per year was assumed to account for background traffic growth, as well as anticipated traffic generated by future planned and programmed projects.

Future (2024) traffic operations were evaluated for the No-Action Alternative. Based on traffic projections, results from the No-Action Alternative analysis indicate that all critical movements will continue to operate at acceptable levels (LOS D or better).

Proposed Action

To evaluate future (2024) traffic flow conditions for the Proposed Action, the change in traffic volumes and LOS from the No-Action to the Proposed Action conditions must be determined. Often, estimates of the amount of traffic expected to be generated by a proposed development are made using the Institute of Transportation Engineers (ITE) publication titled, *Trip Generation, 7th edition.* This publication is a compilation of trip generation data for a wide variety of types of facilities and provides data for entering and exiting traffic, relative to the size and type of the development. However, because of the unique composition and function of the GBT facility, the ITE data was considered not directly applicable for use in determining the trip generation.

Trips generated by the Proposed Action were estimated based on the net increase of trips of employees and buses. Based on information obtained from GBT's administrator, it is projected that there will be 216 employees and 142 buses in the year 2024. This results in a net increase of 46 employees and 48 buses over the next 14 years. It is assumed that future schedule employment shifts and future bus operations during the morning and afternoon peak hours in and out of the facility will be similar to current operations. It is also assumed that employees will drive alone and access the parking deck from Cross Street. It is estimated that a net increase of 30 trips will be generated during the morning peak hour and 58 trips during the afternoon peak hour. Table 3 shows a summary of the estimated site-generated trips for the morning and afternoon peak hour.

Table 3: Trip Generation Summary
AM and PM Peak Hours

Time Period	Vehicle Trips (vph)		
	Enter	Exit	Total
AM Peak Hour	15	15	30
PM Peak Hour	18	40	58

Source: Fitzgerald and Halliday, Inc., February, 2010

An arrival/departure trip distribution pattern was developed for traffic expected to be generated by the Proposed Action. Site generated bus trips were assigned to the future network in proportion to the current distribution of buses. Trip distribution for the employees was derived from review of Census 2000 journey to work data for commuters working in the city of Bridgeport. Trips were distributed to the surrounding roadway network based on the most direct route to and from the site. The site-generated traffic was then added to the No-Action Alternative traffic volumes to develop the 2024 Proposed Action traffic volumes.

Future (2024) traffic operations were evaluated for the Proposed Action Alternative. Results from the LOS analysis under the 2024 Proposed Action Alternative indicate that all critical movements are expected to operate at acceptable levels (LOS D or better).

Parking

A new 185-space employee parking deck will also be constructed as part of the expansion project. This will provide a net increase of 73 spaces. Employees and visitors will continue to use Cross Street to access the on-site parking.

Proposed Mitigation

No adverse traffic and parking impacts are anticipated from the Proposed Action. Consequently, no mitigation is proposed.

3.4 PEDESTRIAN/BICYCLE

Sidewalks are present along both sides of Barnum Avenue. Crosswalks and a pedestrian actuated push button are provided at the intersection of Barnum Avenue with Pixlee Place/Grant Street/Elizabeth Street. There are no bicycle facilities within the study area.

There are no anticipated changes to the pedestrian facilities on the surrounding roadway network under the Proposed Action. No adverse traffic and parking impacts are anticipated from the Proposed Action. Consequently, no mitigation is proposed.

3.5 AIR QUALITY

The U.S. Environmental Protection Agency (EPA) established National Ambient Air Quality Standards (NAAQS) for six commonly found air pollutants, called criteria pollutants, in the Clean Air Act and 1990 Clean Air Act Amendments. The six criteria pollutants are carbon monoxide (CO), ozone, particulate matter (PM), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and lead.

Criteria air pollutants are called such because EPA has set standards for them based on human health-based and/or environmentally-based criteria. Primary standards set maximum limits to protect public health, including the health of sensitive populations such as asthmatics, children, and the elderly. Secondary standards are set to protect public welfare and the environment, including protection against visibility impairment, damage to animals, crops, vegetation, and buildings. With the exception of sulfur dioxide, all criteria pollutants have secondary standards that are equal to the primary standards. The criteria pollutants and their NAAQS are displayed in Table 4. Units of measure for the standards are parts per million (ppm) by volume, milligrams per cubic meter of air (mg/m^3), and micrograms per cubic meter of air ($\mu g/m^3$).

The Clean Air Act Amendments require each state to monitor air quality to determine whether the NAAQS are being met. Like other states, Connecticut has established a system of air sampling stations across the state to monitor the criteria pollutants. Results are evaluated by county in order to identify regions which may have air pollution problems. If air pollutant levels do *not* exceed the standard for any pollutant, a region is considered in attainment of the NAAQS.

However, if even one sampling location (monitor) in a region shows a pollutant level higher than the standard (called an exceedance of the standard), the region (or a portion of) is then classified as nonattainment for that pollutant. Once a region is classified as nonattainment for an air pollutant, the state must develop a plan to bring the region back to attainment status, called a State Implementation Plan.

Table 4: National Ambient Air Quality Standards

Pollutant	Primary Standards		Secondary Standards	
	Level	Averaging Time	Level	Averaging Time
CO	9 ppm (10 mg/m^3)	8-hour[1]	None	
	35 ppm (40 mg/m^3)	1-hour[1]		
Lead	0.15 µg/m^3 [2]	Rolling 3-Month Average	Same as Primary	
	1.5 µg/m^3	Quarterly Average	Same as Primary	
Nitrogen Dioxide	0.053 ppm (100 µg/m^3)	Annual (Arithmetic Mean)	Same as Primary	
Particulate Matter (PM_{10})	150 µg/m^3	24-hour[3]	Same as Primary	
Particulate Matter ($PM_{2.5}$)	15 µg/m^3	Annual[4] (Arithmetic Mean)	Same as Primary	
	35 ug/m^3	24-hour[5]	Same as Primary	
Ozone	0.075 ppm (2008 std)	8-hour[6]	Same as Primary	
	0.08 ppm (1997 std)	8-hour[7]	Same as Primary	
Sulfur Dioxide	0.03 ppm	Annual (Arithmetic Mean)	0.5 ppm (1300 ug/m^3)	3-hour[1]
	0.14 ppm	24-hour[1]		

[1] Not to be exceeded more than once per year.
[2] Final rule signed October 15, 2008.
[3] Not to be exceeded more than once per year on average over 3 years.
[4] To attain this standard, the 3-year average of the weighted annual mean $PM_{2.5}$ concentrations from single or multiple community-oriented monitors must not exceed 15 ug/m^3.
[5] To attain this standard, the 3-year average of the 98th percentile of 24-hour concentrations at each population-oriented monitor within an area must not exceed 35 ug/m^3 (effective December 17, 2006).
[6] To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.075 ppm (effective May 27, 2008).
[7] (a) To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.08 ppm.
(b) The 1997 standard-and the implementation rules for that standard-will remain in place for implementation purposes as EPA undertakes rulemaking to address the transition from the 1997 ozone standard to the 2008 ozone standard.

The GBT Maintenance / Operations Facility is located in Fairfield County. Thus, any one exceedance in Fairfield County will cause a portion of, or the entire county, to become classified as nonattainment for that pollutant. The current air quality monitor locations, exceedances, and attainment designations for the six criteria pollutants in Fairfield County are displayed in Table 5.

For transportation projects, the criteria pollutants of greatest concern are CO and ozone because they are predominantly influenced by motor vehicle activity. The NAAQS for CO are a 1-hour average concentration of 35 parts per million (ppm) and an 8-hour average concentration of 9 ppm. The NAAQS for ozone is a 3-year average of the fourth highest daily recorded 8-hour concentration of 0.075 ppm.

Table 5: Project Area Air Quality Status

Pollutant	Number of Monitors in Fairfield County	Monitor Locations	Exceedance (2008)	Attainment Status
CO	2	Sherwood Island State Park, Westport Roosevelt School, Bridgeport	None	Attainment
Ozone	4	Greenwich Point Park, Greenwich Sherwood Island State Park, Westport UCG Lighthouse, Stratford WCSU, Danbury	At all monitors	Nonattainment
PM_{10}	3	137 East Avenue, Norwalk Sherwood Island State Park, Westport Roosevelt School, Bridgeport	None	Attainment
$PM_{2.5}$	4	137 East Avenue, Norwalk Sherwood Island State Park, Westport Roosevelt School, Bridgeport WCSU, Danbury	None	Nonattainment
NO_2	1	Sherwood Island State Park, Westport	None	Attainment
SO_2	4	Greenwich Point Park, Greenwich Sherwood Island State Park, Westport 115 Boston Terrace, Bridgeport WCSU, Danbury	None	Attainment
Lead	0	-	-	Attainment

Source: EPA Region 1, 2008 *Annual Report on Air Quality in New England,* July 2009.
Note: In the coming two years, however, with the substantially strengthened NAAQS for lead, EPA expects that additional monitors will be placed to better characterize lead concentrations in population centers in New England.

Carbon Monoxide

CO is the most significant transportation-related pollutant of concern at the local level. CO can reach dangerously high levels in local areas, such as city street canyons with heavy auto traffic and little wind. These high levels are often referred to as CO hotspots. Exposure to high levels of CO can affect mental alertness and vision in healthy persons and may cause severe chest pains and other cardiovascular symptoms in people with cardiovascular diseases.

The Connecticut Department of Environmental Protection (CTDEP) locates CO monitors throughout the state specifically to measure CO levels from high traffic areas in populated locations. EPA's air quality summary demonstrates that CO concentrations are not problematic in Fairfield County. Specifically:

- In 2008, the highest recorded 8-hour concentration (2.2 ppm) in Fairfield County was well below the NAAQS of 9 ppm.

- Trend graphs for the past 20 years show concentrations of CO below the NAAQS and indicate a downward trend in concentrations.

Ozone

Ozone is formed when NO_2 reacts with volatile organic compounds (VOC) and sunlight. Ozone is the principal component of smog. At high levels, ozone irritates the mucous membranes of the respiratory system and can cause impaired lung function. In addition to transportation sources, VOC and NO_2 are byproducts of pesticides, paints, and electrical utilities.

A large percentage of the peak ozone concentrations in Connecticut are caused by the transport of ozone and its precursors from the New York City area and from other points west and south of Connecticut. EPA's air quality summary of ozone concentrations in Fairfield County states:

- In 2008, the maximum recorded 4th highest 8-hour concentration (0.090 ppm) in Fairfield County was at the Westport monitor. This level exceeded the NAAQS of 0.075 ppm. The other three monitors in Fairfield County, in Greenwich, Stratford, and Danbury, also recorded exceedances of 0.088 ppm, 0.078 ppm, and 0.086 ppm, respectively.

- Although NAAQS exceedances correspond to changing summer weather conditions, overall trends are downward.

Particulate Matter

Fairfield County, as part of the New York City Metropolitan Area, is in nonattainment for $PM_{2.5}$. Connecticut is required to submit a State Implementation Plan to EPA outlining measures to meet the standard by April 2010.

Direct and Indirect Impacts

Regional Impacts — Transportation Conformity

The impacts of a particular project on regional air quality are difficult to determine, particularly for small projects such at this one. The determination of regional air quality impacts requires a rigorous modeling exercise, conducted by metropolitan planning organizations and/or state departments of transportation. They conduct air quality conformity determinations of their long- and short-term transportation plans. This process involves modeling travel demand across the entire regional transportation system and applying vehicle trips, vehicle miles of travel, and their associated emissions to the network. Conformity is demonstrated when the forecasted emissions of the existing and planned road and transit networks of a transportation plan do not cause exceedances of air quality standards.

The Greater Bridgeport Regional Planning Agency (GBRPA), the metropolitan planning organization (MPO) for the region, coordinates with the CTDOT to conduct a conformity determination of the Regional Transportation Plan and Transportation Improvement Program. The

conformity analysis must demonstrate that the existing and planned road and transit network emissions are forecasted to be less than the amount allowed in the VOC, NO_x, and CO emissions budgets established by the CTDEP for transportation sources. The emissions budgets are set at levels that will maintain the NAAQS for each pollutant. Therefore, transportation-related emissions must be less than or equal to these emissions budgets.

Project Level Conformity Determination

Federal regulations concerning the conformity of transportation projects developed, funded or approved by the United States Department of Transportation and by MPOs are contained in 40 CFR 93. In accordance with 40 CFR 93.109, the applicable criteria and procedures for determining the conformity of a project which is from a conforming Transportation Plan are listed in 40 CFR 93.109(b). Each of these criteria has been determined to be satisfied for the Proposed Action, as follows:

- **Proposed Action from a Conformity Plan** — This project received its first appropriations in Federal Fiscal Year 2006 (SAFETEA-LU projects 44 and 478) and, at that time, was approved by the Greater Bridgeport/Valley Metropolitan Planning Organization (MPO) and incorporated into the regional Transportation Improvement Program (TIP). This project continues to receive the full support of the MPO and has been incorporated into the Connecticut State Transportation Improvement Program (STIP) and approved by Federal Transit Administration (FTA). The Proposed Action is also identified in GBRPA's current Long Range Transportation Plan. The scope of this project, as described in this report, is consistent with the scope identified in the current Plan.

- **Current Conforming Plan** — GBRPA's current Long Range Transportation Plan was determined to be in conformity by the Federal Highway Administration and the Federal Transit Administration. The Proposed Action is included in this Plan.

- **CO Hot Spots** — This project will not cause or contribute to any new violations or increase the frequency or severity of any existing CO violations in CO maintenance areas, as shown by the results of the microscale (local) CO hot spot analysis contained herein.

- **$PM_{2.5}$ Hot Spots** — This project is exempt from conformity requirements under Section 40 CFR Part 93.126 of the conformity rule. A project level $PM_{2.5}$ qualitative analysis is therefore not required.

- **PM_{10} Control Measures** — There are no PM_{10} control measures in the current State Implementation Plan.

It is noteworthy that 40 GBT buses are being retrofitted with a particulate filter, which will contribute to improvements to air quality in the Greater Bridgeport area.

In summary, the Proposed Action has been determined to be in conformity with the Clean Air Act, as amended, pursuant to all applicable EPA regulations.

Local Impacts – Microscale Analysis

In order to assess CO impacts on local air quality from the project, a modeling analysis was conducted to calculate CO concentrations under existing, no build, and build conditions at sensitive receptor locations in the vicinity of the intersection most likely to be impacted by the build alternative. The modeling analysis determined if the proposed project will create violations of federal CO standards. The analysis was conducted using the EPA MOBILE6.2 emissions factor model and the CALQVIEW2 (Windows version of CAL3QHC Version 2) model.

Capacity and queuing analyses were performed for the single signalized intersection in the vicinity of the Proposed Action. The intersection of Barnum Avenue (Route 1) and Pixlee Place / Grant Street / Elizabeth Street was identified as the only signalized intersection likely to be impacted by the build alternative. Capacity and queuing analyses were completed for the following peak periods:

- 2009 morning and afternoon (Existing Conditions),
- 2024 morning Build, afternoon Build, morning No-Build, and afternoon No-Build scenarios.

CALQVIEW2 is a line source dispersion model that applies the Gaussian dispersion theory to traffic inputs and meteorological conditions to predict CO concentrations from vehicles on the roadway. Air quality impacts from mobile sources are modeled by analyzing queue links and free flow links. Queue links are those that simulate vehicles idling at the stop bar of an intersection. Free flow links simulate vehicles traveling through an intersection. Receptor locations are selected based on where people may be located who may be exposed to the CO produced by vehicles in the area (e.g., sidewalks, outdoor eating establishments). Each receptor was located at a height of 5.9 feet, per EPA guidance.

CALQVIEW2 meteorological and background information is listed in Table 6.

Table 6: CALQVIEW2 Parameters

Parameter	Value
Averaging time	60 mins
Surface roughness length	175 cm
Settling velocity	0
Deposition velocity	0
Scale conversion factor	0.3048 (units in ft)
Output	1 (in ft)
Wind speed	1 m/s
Wind direction	0
Stability class	4 (D) – Urban
Mixing height	1000 m
1-hour background concentration	4.3 ppm
Multiple wind directions	Yes – 10 degree increments
Receptor height	6.0 ft
Signal times	Varies (traffic analysis)
Traffic volumes	Varies (traffic analysis)

Mobile source CO emission factors were modeled using MOBILE6.2. These input files and associated output files are included in Appendix D.

Results from the model represent the one-hour average CO concentrations at each receptor due to the modeled traffic, and include a background concentration of 4.3 ppm. To determine the eight-hour average concentration at each receptor, the one-hour dispersion result from the model was multiplied by the persistence factor of 0.7. The 2009 AM and PM, 2024 AM Build and PM Build, and 2024 AM No-Build, and PM No-Build were each modeled for the intersection, for a total of six model runs. Table 7 below presents the highest CO reading for each model run. Appendix D contains the CALQVIEW2 model output showing all results for each run.

Table 7: Highest Predicted CO Results

Model Run	Highest 1-hour Concentration (ppm)	Corresponding 8-hour Concentration (ppm)	Receptor Location
Barnum Avenue & Pixlee Pl / Grant St / Elizabeth St 2009 Existing AM	6.4	4.5	Northwest corner between Barnum Ave / Grant St
Barnum Avenue & Pixlee Pl / Grant St / Elizabeth St 2009 Existing PM	6.2	4.3	Northwest corner between Barnum Ave / Grant St
Barnum Avenue & Pixlee Pl / Grant St / Elizabeth St 2024 No Build AM	5.9	4.1	Northwest corner between Barnum Ave / Grant St
Barnum Avenue & Pixlee Pl / Grant St / Elizabeth St 2024 No Build PM	5.8	4.1	Northwest corner between Barnum Ave / Grant St
Barnum Avenue & Pixlee Pl / Grant St / Elizabeth St 2024 Build AM	5.9	4.1	Northwest corner between Barnum Ave / Grant St
Barnum Avenue & Pixlee Pl / Grant St / Elizabeth St 2024 Build PM	5.8	4.1	Northwest corner between Barnum Ave / Grant St

NAAQS for CO: 1-hour standard of 35.0 ppm, 8-hour standard of 9.0 ppm.

As shown in Table 7, all results are well below the CO NAAQS of 35 ppm for one hour and 9 ppm for eight hours. Thus, the proposed project will not create any violations of federal CO standards. These findings appear to be reasonable, based on the following:

- Air quality monitoring data show that existing CO levels in the area are well below the CO NAAQS. Therefore CO hot spots are highly unlikely in the vicinity of the proposed project.

- The low level of trips generated by the proposed project relative to total regional trips is unlikely to negatively impact regional air quality. The VOC, NO_x, and CO emissions from the transportation system are currently below those allowed by CT DEP. Thus, the effects of increased travel can be accommodated without causing the emission budgets to be violated, and as a result, will not cause or contribute to further violations of the NAAQS. Furthermore, recent monitored ozone exceedances are primarily due to the transport of ozone and other pollutants from beyond Connecticut. The low number of additional vehicle trips is unlikely to cause or contribute to further ozone exceedances.

CO hot spots are unlikely in the vicinity of the Proposed Action because existing CO levels in the area are already well below the CO NAAQS and the project will not substantially change emission sources/quantities. PM exceedences are not expected.

During clearing and construction of the proposed facility and associated paved surfaces potential air quality impacts include: airborne dust particles from exposed soils and emissions from idling and mobile construction vehicles. These temporary impacts are described in more detail in Section 3.20, Construction Impacts.

Proposed Mitigation

It is not anticipated that any short- or long-term adverse air quality impacts will occur as a result of the project. Therefore, no specific air quality mitigation measures are proposed.

To minimize impacts to air quality during construction the following best management practices will be followed:

- Minimization of exposed erodible earth area to the extent possible.
- Stabilization of exposed earth with grass, pavement, or other cover as early as possible.
- Application of stabilizing agent (i.e., calcium chloride, water) to the work areas and haul roads.
- Covering, shielding, or stabilizing stockpiled material as necessary.
- Use of covered haul trucks.
- To minimize drag out, the incidental transport of soil by construction equipment from unpaved to paved surfaces, rinsing of construction equipment with water or any other equivalent method.
- Use of construction equipment with air pollution control devices.
- Use of clean fuels including ultra-low sulfur diesel fuel (15 ppm sulfur), compressed natural gas or emulsified fuels (e.g., Purinox, approved by the California Air Resources Board).
- Eliminating any unnecessary idling to no more than 3 minutes.

3.6 NOISE

Existing Setting

The existing setting of the GBT site is a mixed industrial, commercial, residential area within a city of approximately 139,500 people. This urbanized area of Bridgeport, is roughly bounded by the busy commuter (MNRR) and freight rail corridor to the south, an industrial area with an active waste processing and recycling facility to the east, a lumber yard and self-storage facility to the west, and a residential cluster, commercial strip plaza and vacant lot to the north. Activities at the current GBT facility, which include operating equipment to maintain and repair buses and paratransit vehicles, along with the movement of train engines and commuter and freight rail cars along the adjacent MNRR line, forklift movements and other activities at an abutting lumber yard, and the continual humming and whining of equipment at the adjacent waste recycling facility all contribute to the existing noise setting of the Proposed Action site.

Noise Sensitive Land Uses

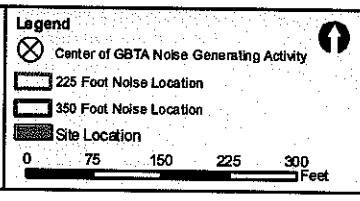
There are three categories of noise-sensitive land uses defined by the FTA in the guidance manual entitled *Transit Noise and Vibration Impact Assessment* (FTA-VA-90-103-06, May 2006). A

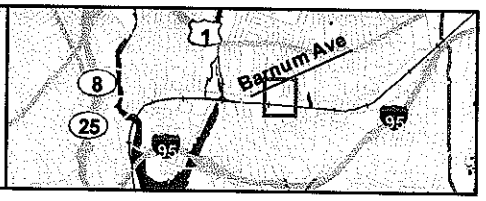
Category 1 Land Use is generally defined as a tract of land where quiet is an essential element in its intended purpose, such as an outdoor concert pavilion or a National Historic Landmark where outdoor interpretation routinely takes place. Category 2 Land Uses include residences and buildings where people sleep, and Category 3 Land Uses include institutions with primarily daytime and evening use, such as schools, churches, and libraries, as well as parklands with both active and passive recreation.

A site visit was conducted on September 23, 2009, to identify and categorize noise sensitive land uses (receivers) near the Proposed Action site and to develop a baseline for the existing noise environment at the site. Noise-sensitive receivers were looked at from an unobstructed screening distance *from the center of noise-generating activity* on the GBT site. The center of noise-generating activity was assumed to be located on the north side of the existing GBT maintenance facility, in front of the first two vehicle bays (refer to Figure 5). Land uses within 350 unobstructed feet (the red circle on Figure 5) and 225 feet with intervening buildings (the green circle on Figure 5) of the Proposed Action are considered to be noise-sensitive. These noise screening distances (thresholds) were used based on guidance relative to bus storage and maintenance facilities, as contained in Chapter 4 of the FTA *Transit Noise and Vibration Impact Assessment* guidance manual, and is therefore considered to be the study area for the noise impact analysis.

There are seven residential noise sensitive receivers within 350 feet of the center of the Proposed Action site. However, all except for three of the receivers (labeled N-1, N-2, and N-3 on Figure 5) are obstructed by intervening buildings, and; therefore, fall outside of the screening distance threshold. The three residential noise-sensitive receivers within 350 unobstructed feet of the center of the Proposed Action site are Category 2 Land Uses. There are no Category 1 or Category 3 noise-sensitive receivers within the noise analysis study area.

Figure 5: - Noise Sensitive Receivers Near the Proposed Greater Bridgeport Transit Authority Maintenance/ Operations Facility Site





Existing Noise Sources

There are several existing sources of noise contributing to the ambient noise level in the GBT study area:

- **Waste processing and recycling facility** (to the east): Noise from the continual humming and whining of equipment used to treat and process materials and substances, the shredding of used oil filters and empty drums, the movement (particularly the "rolling" on and off trucks) of drums and containers on the site, and the truck traffic traveling to and from the recycling facility (on Cross Street, as well as Elizabeth Street, Willow Street, and other city streets).

- **Metro North Rail Corridor** (to the south): Noise from the movement of passenger and freight trains along the railroad line.

- **Lumber yard and self-storage facility** (to the west): Noise from forklift and other vehicular movements on the site.

- **Activities at the current GBT facility** contribute to existing noise with operating equipment to maintain and repair buses and paratransit vehicles, vehicular traffic (from Barnum Avenue and Cross Street), and bus and van idling.

Existing Noise Levels

Physical measurements of existing noise were taken on August 19, 2010 at the three identified residential noise sensitive receivers (N-1, N-2, and N-3) located within 350 feet of the GBT facility. The noise measurements were taken at various times during the day (morning peak, mid-morning, late morning, early afternoon, mid-afternoon, late afternoon, and evening peak). A total of seven noise measurements were taken at each receiver site, using a CEL-360 logging dosimeter. An average of the seven measurements was then calculated for each receiver to obtain an existing noise level. The average existing noise levels based on physical measurements is as follows:

- N1 – 57.4 dB (L_{dn})
- N2 – 62.0 dB (L_{dn})
- N3 – 63.6 dB (L_{dn})

Direct and Indirect Impacts

No-Action Alternative

The No-Action Alternative will be a continuance of existing conditions, thus noise levels at the three residential receivers will continue to fall in the 57 to 64 dBA range during the daytime.

The Proposed Action

Impacts from the GBT project's new sources or increased levels of noise were predicted using the FTA guidance manual and FTANOISE spreadsheet model. FTANOISE is the FTA's accepted spreadsheet program that allows users to readily predict noise levels from a proposed transit project and assess impact based on FTA's noise impact criteria. The model was developed based on in-depth studies at numerous transit facilities and considering many variables (inputs) such as type and number of vehicles and number of intervening structures. The following table shows the general parameters and data relative to the Proposed Action which were used as input for the FTANOISE spreadsheet model to estimate future (2024) project noise levels at noise sensitive receivers:

Table 8: Analysis Parameters and Data Inputs

Parameter	Data Input
Buses entering/exiting the facility per hour during daytime hours (7 AM to 10 PM)	22
Buses serviced at the facility per hour during daytime hours (7 AM to 10 PM)	8
Buses entering/exiting the facility per hour during nighttime hours (10 PM to 7 AM)	3
Buses serviced at the facility per hour during nighttime hours (10 PM to 7 AM)	8
Distance of Noise Receiver to Noise Source	Varies

Source: Fitzgerald & Halliday, February 2010.

Noise Analysis Results and Determination of Impact

The FTA noise evaluation protocol is based on a comparison of existing noise levels to future project-only noise levels (FTA, May 2006). Under the protocol, a transit noise impact occurs when the predicted future project-generated noise level increase relative to the existing noise level is too great. There are no specific noise levels used by FTA to define noise impacts universally. There are three possible outcomes from the comparison of existing noise levels to future project-only noise levels using the graph in Figure 6:

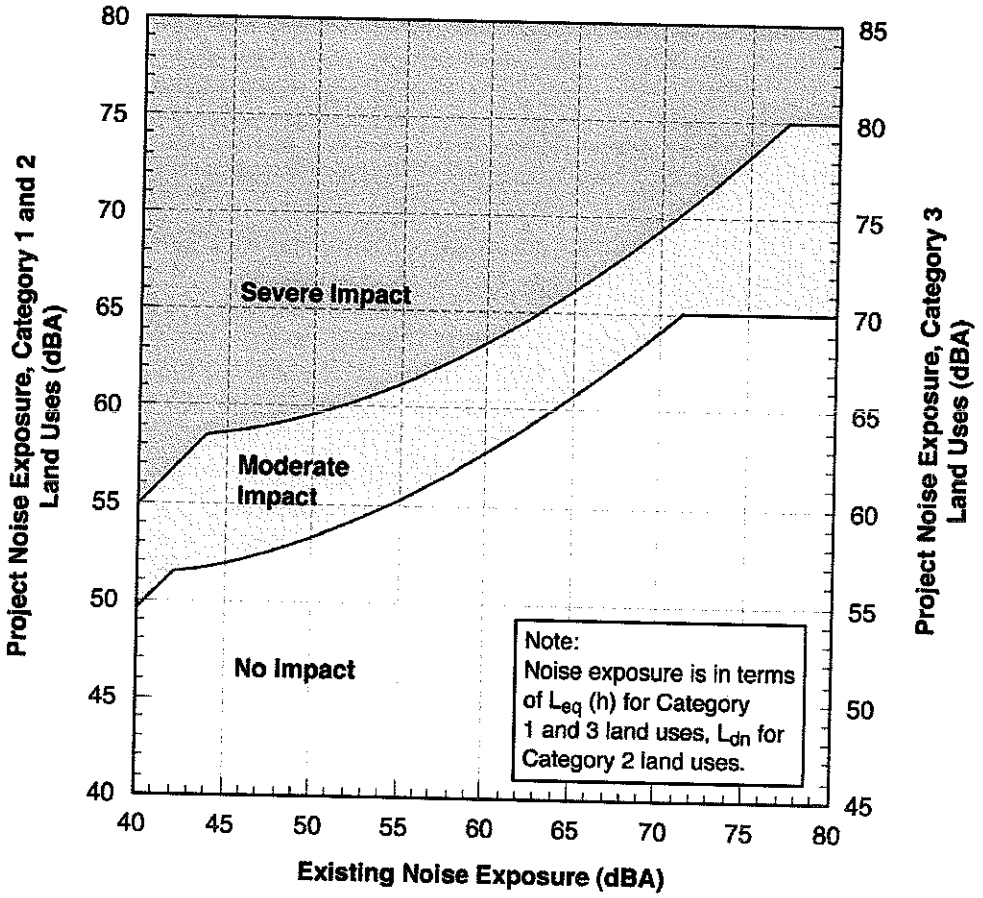
1) The result falls within the No Impact Zone on Figure 6.

2) The result falls within the Moderate Impact Zone on Figure 6. In this range of noise impact, the change is noticeable to most people but may not be sufficient to cause strong, adverse reactions from the community. In this transitional area, other project-specific factors must be considered to determine the magnitude of the impact and the need for mitigation. These factors include the existing noise level, the predicted increase over existing noise levels, the types and numbers of noise-sensitive land uses affected, the noise sensitivity of the affected properties, the effectiveness of possible mitigation measures,

community views regarding the Proposed Action, and the potential cost of mitigating noise impacts.

3) The result falls within the Severe Impact Zone of Figure 6. Project-generated noise that results in a severe impact can be expected to cause a significant percentage of people to be highly annoyed by the new noise and represents the most compelling need for mitigation. Noise mitigation would normally be specified for severe impact areas unless there are truly extenuating circumstances which prevent it.

Figure 6: Noise Impact Criteria for Transit Projects



Source: FTA, May 2006

Project-Only Noise Impact

Future noise levels strictly attributed to the GBT project (i.e., excluding other noise sources in the project area) were predicted for each of the three noise sensitive receivers. These estimated future project-related noise levels are presented in Table 9. FTANOISE output spreadsheets are included in Appendix E of this EIE. The future project-only noise level for each receiver was then compared to the existing noise level at each receiver using Figure 6 to determine potential degree of project impact. The results are presented in Table 9.

Table 9: Comparison of Estimated Future (2024) Project-Related Noise Levels to Existing Noise Levels and Determination of Impact

Receiver Number	Estimated Future Noise Level (dBA) (L_{dn})	Existing Noise Levels (dBA) (L_{dn})	Noise Levels Defining Impact (dBA) (L_{dn})	Result of Comparison Using Graph in Figure 1
N-1	57	57	57	Moderate Impact
N-2	56	62	59	No Impact
N-3	55	64	60	No Impact

Source: Fitzgerald & Halliday, Inc., January 2010.

As shown in Table 9, no direct noise impacts to N-2 or N-3 are anticipated from the Proposed Action. A moderate impact to N-1 can be predicted from the Proposed Action. However, the noise level defining the impact is on the no impact/moderate impact threshold. The change may not be noticeable to most people.

Cumulative Noise Impact

In certain cases, noise impacts must be viewed from a cumulative impacts perspective. These cases involve projects where changes are proposed to an existing facility, as opposed to a completely new project in an area previously without the facility. Noise impacts are determined by comparing the project-only noise with existing noise (and *not* with projections of future No Build noise exposure). Table 10: Noise Impact Criteria: Effect on Cumulative Noise Exposure, which has been reproduced directly from the FTA noise guidance manual, provides guidance for how to determine cumulative impacts. The results of this analysis indicate (as shown in Table 11) no cumulative noise impacts to any of the three noise sensitive receivers.

Table 10: Noise Impact Criteria: Effect on Cumulative Noise Exposure

Noise Impact Criteria: Effect on Cumulative Noise Exposure			
L_{dn} or L_{eq} in dBA (rounded to nearest whole decibel)			
Existing Noise Exposure	**Allowable Project Noise Exposure**	**Allowable Combined Total Noise Exposure**	**Allowable Noise Exposure Increase**
45	51	52	7
50	53	55	5
55	55	58	3
60	57	62	2
65	60	66	1
70	64	71	1
75	65	75	0

Source: FTA, May 2006.

Table 11: Cumulative Noise Impacts

Receiver Number	Existing Noise Exposure	Project-Only Noise Level	Combined Total Noise Exposure	Allowable Combined Total Noise Exposure	Allowable Noise Exposure Increase	Result
N-1	57	57	60	60	3	No Impact
N-2	62	56	63	64	2	No Impact
N-3	64	54	64	65	2	No Impact

Summary of Noise Impact Analysis

Based on the FTA General Noise Assessment conducted for this EIE, there will be no direct or cumulative noise impacts attributed to the expanded GBT Bus Maintenance Facility.

Construction Period Impacts

Table 12 provides typical noise emission levels dBA at a location 50 feet from various types of construction equipment that may be used on the project site. For comparison, everyday noise levels at the Proposed Action site are estimated to be in the 57 to 64 dBA range based on the surrounding land use and level of industrial activity in the area.

Table 12: Noise Emission Levels from Construction Equipment

Construction Equipment	*Noise Level (dBA) 50 feet from Source*
Air compressor	81
Backhoe	80
Dozer	85
Generator	81
Jackhammer	88
Loader	85
Pneumatic Tool	85
Rock Drill	98
Dump Truck	85

Source: *Transit Noise and Vibration Impact Assessment* (FTA-VA-90-1003-06, May 2006)

The general rule is to reduced noise levels by 6 dBA for each doubling of distance from a noise source to a receiver. Applying this rule, GBT construction noise levels experienced at each of the three nearby residential noise sensitive receivers are as follows:

Table 13: Effects of Construction Noise Levels on Sensitive Receivers Near the Proposed Action Site

Map ID	**Noise Sensitive Receiver**	**Distance of Noise-Sensitive Receiver from the GBT Bus Maintenance Facility**	**Noise Level Exposure (in decibels)**
N-1	Residence at western terminus of Cross Street	200 feet	68 dBA
N-2	Residence at northwestern corner of Cross and Elizabeth Streets	250 feet	66 dBA
N-3	Residence at northeastern corner of Cross and Elizabeth Streets	350 feet	64 dBA

Source: Fitzgerald & Halliday, Inc., November 2009.

These construction noise levels are expected to be somewhat higher than the everyday ambient noise levels experienced at those noise-sensitive receivers. However, mitigating noise impact to the three sensitive receivers from construction of the Proposed Action is not required. Construction noise is exempt under Section 22a-69-1.8(g) of the Regulations of the State of Connecticut (RCSA). However, contractors will observe best management practices such as the following noise abatement measures:

- Installation of appropriate mufflers on all construction vehicles and restrictions on nighttime hours of operation. Construction documents will require the contractor to limit the duration and intensity of noise generated by construction.

- Route truck traffic onto streets with the fewest homes. Stipulate that construction vehicles and equipment will enter the site from Barnum Avenue, rather than Cross Street.

- Coordinate with the City of Bridgeport to employ other measures that may be effective to minimize noise disturbance to nearby residents.

Overall, the Proposed Action will be in compliance with the Connecticut Noise Regulations and the City of Bridgeport's Noise Control Regulations.

Proposed Mitigation

The Proposed Action will not result in severe noise impacts to the noise-sensitive receivers in the project area. As such, mitigation measures are not proposed or required as part of the project.

3.7 NEIGHBORHOODS/HOUSING

The following discussion of neighborhoods and housing includes consideration of local socio-economic conditions, existing neighborhoods, and residential character. Local socio-economic conditions include major employers, economic trends, employment levels, income, and poverty levels. Comparative information on neighborhoods, housing, and local socio-economic conditions was obtained from the U.S. Census 2000, the City of Bridgeport's Master Plan, City of Bridgeport Planning Department, the Connecticut Economic Resources Center (CERC), and field observation. Based on the U.S. Census 2000, Census Tract 743, Block 1 makes up the project site.

Existing Setting

Local Socio-Economic Conditions

Economic trends were assessed in some detail in the City's Master Plan. Approximately 150 miles from Boston and 60 miles from New York City, Bridgeport is part of the Tri-State Metropolitan Region. The city is also part of the federally recognized Bridgeport-Stamford-Norwalk Metropolitan Statistical Area. As Connecticut's largest city, Bridgeport serves as a regional inter-modal transit hub with highway, rail, bus, air and water access. As a result, Bridgeport's commuter-shed stretches along the I-95 corridor and the New Haven rail line from New York City to New Haven and includes the office centers that have developed around train stations in Stamford and Norwalk. It also extends northward along Routes 8 and 25, capturing residential communities and employment centers in the Pequonnock Valley.

Currently, less than 10 percent of Bridgeport's total land area is comprised of commercial and industrial uses. According to the Master Plan, most of Bridgeport's residents now work outside the city, while the relatively few higher paying jobs in Bridgeport are held by in-commuters.

The primary economic development goal of the Master Plan is job creation. Bridgeport is emphasizing revitalization of its Downtown area and revitalization and/or redevelopment of its vacant industrial parcels and brownfields; as currently 11 percent of the land area within the City of Bridgeport is vacant. The vacant parcels present significant opportunities for revitalization and

mixed-use redevelopment in former industrial areas and especially along the Bridgeport waterfront.

Major Employers, Jobs, and Economic Trends: Table 14 presents an economic profile for the City of Bridgeport.

Table 14: 2009 Economic Profile for Bridgeport, CT

	Bridgeport
Jobs	44,578
Employers	2,390
Business (Firms) by Sector	
Agriculture	1.2%
Construction/Mining	10.6%
Manufacturing	6.1%
Transportation and Utilities	3.8%
Trade	23.7%
Finance, Insurance, and Real Estate	6.4%
Services	43.6%
Government	4.6%

Source: CERC Bridgeport Town Profile, 2009.

As shown in Table 14, the services sector represents the largest employer/supplier of jobs in Bridgeport (43.6 percent). As defined in the 1987 *Standard Industrial Classification (SIC) Manual*, the services sector includes any establishment primarily engaged in rendering a wide variety of services to individuals, business, government establishments, and other organizations. The services category includes legal services, accounting services, and schools, as well as restaurants and repair and maintenance services. Trade (23.7 percent) is the next most important sector in Bridgeport.

According to the CERC, Bridgeport's top five major employers are Bridgeport Hospital, People's Bank, St. Vincent's Medical Center, Bridgeport Health Care Center, and Sikorsky Aircraft. Of these major employers, Bridgeport Hospital is located closest (approximately 0.5 miles) to the Proposed Action site while St. Vincent's Medical Center and Sikorsky Aircraft are furthest (approximately four miles away).

Employment: In the past, heavy manufacturing created secure employment opportunities for the residents of Bridgeport and neighboring communities. As industry moved abroad and financial and management corporations moved to Stamford and other regional centers, Bridgeport's employment rate has steadily declined. In the future, the City will be focusing on strengthening the light industrial and health care job sectors to create employment opportunities for the City and the region.

The study area population represents less than one percent of Bridgeport's workforce. The unemployment data in Table 15 reflects data obtained from the 2000 U.S. Census. Economic conditions have changed since that time. The most current available data from the Connecticut

Department of Labor (February 2010) indicate the City of Bridgeport's unemployment rate is now at 14.6%, compared with the Greater Bridgeport Region unemployment rate of 9.2%, Connecticut's unemployment rate of 9.8%, and the national unemployment rate of 9.7% (seasonally adjusted).

Table 15: Comparison of Census 2000 Employment and Income Data

	Study Area*	Bridgeport	GBRPA Region	Fairfield County	State of CT
Household Characteristics					
Households	277	50,305	113,079	324,403	1,302,227
Housing Units	323	54,367	117,264	339,466	1,385,975
Vacant Units	32	5,805	4,060	15,234	84,305
Percent Vacant	9.91%	4.95%	7.47%	4.49%	6.08%
Owner Occupied	139	21,758	73,922	224,509	869,742
Percent Owner Occupied	43.03%	40.02%	63.04%	66.14%	62.75%
Renter Occupied	152	28,549	37,537	99,723	431,928
Percent Renter Occupied	47.06%	52.51%	32.01%	29.38%	31.16%
Income/Poverty					
Median Household Income	$29,028	$34,658	$76,954**	$65,249	$53,935
Percent Below Poverty	11.17%	17.86%	9.87%	6.76%	7.62%
Employment Status					
Population	770	139,529	307,607	882,567	3,405,565
Of Employment Age	518	104,020	234,446	678,639	2,652,316
Employed	283	7,752	174,198	426,638	1,664,440
Percent Unemployed	4.83%	6.42%	4.01%	3.14%	3.49%
Not in Labor Force	210	40,409	86,626	230,543	886,997

Source: U.S. Census 2000. * Study Area corresponds to portions of Census Tract 743, Block 1.
**Median household income derived by averaging multiple sources.

The median annual household income is much lower in the study area ($29,208) and the City of Bridgeport ($34,658), than it is in the GBRPA region ($76,954), Fairfield County ($65,249) and Connecticut ($53,935) as a whole. Correspondingly, the percent of the population below the poverty level within the project study area and the City of Bridgeport is also higher than that of the other planning regions.

Neighborhoods: Neighborhoods can be defined both by formal designation, or presence of a formal neighborhood organization, and/or by residents' less tangible sense of community cohesion, or the sense of unification, "belonging," or closeness to a neighborhood or community.

The existing GBT facility is located in the East End neighborhood, which stretches from the waterfront area, to Barnum Avenue, over to the Stratford Town Line. Information on this neighborhood was obtained through field observation and through discussions with Bridgeport's

Director of Planning and Neighborhood Coordinator. The East End neighborhood was once comprised of large factories, shops, restaurants, churches, and residences. There are still a variety of uses remaining; however, many buildings are now abandoned. In the direct vicinity of the Proposed Action, small-scale industrial uses are interspersed with multi-family housing along the north side of Cross Street, Elizabeth Street and Willow Street. Heavy industrial uses, such as Bridgeport United Recycling and the Bridgeport Analytical Laboratory, are located on the south side of Cross Street, north of the existing GBT facility.

Barnum Avenue is an east-west roadway that forms the northern border of the East End neighborhood. In the vicinity of the Proposed Action, this corridor contains a mixture of commercial, residential (condominiums and multi-family) and office uses. Most of the commercial uses are located within strip-mall developments and due to the proximity to Bridgeport Hospital (approximately 0.5 miles) there are a fair number of medical offices and specialty doctors located within these malls as well.

According to the City of Bridgeport, there are several large redevelopment projects in various stages of planning located within the East End neighborhood, all of which have the potential to impact the future demand for transit services. In the direct vicinity of the Proposed Action, the property located to the northwest of the existing employee/visitor parking lot is currently being remediated; this site was a scrap yard and is now slated for 75,000 to 100,000 square feet of commercial development. Other projects currently completed or under construction within the vicinity of the Proposed Action include:

- 100,000- square foot expansion of the Seaview Industrial Park,
- 15,000-square foot expansion and renovation of warehousing space on Brookfield Road (located one block east of Cross Street) that will be used for the design and construction of Broadway and cruise line show sets, and a
- 25,000-square foot expansion of light industrial and manufacturing space on Bunnell Street (located west of the Proposed Action).

Housing Characteristics: Housing accounts for 42 percent of Bridgeport's land area. More than 60 percent of the existing residences are multi-family units. Of those residences in the study area, approximately 43 percent are owner-occupied, which is higher than Bridgeport as a whole (40.02 percent), but lower than the State of Connecticut, the GBRPA Region, and Fairfield County (between approximately 62 and 66 percent respectively). Comparatively, the study area also has a higher percentage of renter-occupied housing units (47.06 percent) than Fairfield County, Connecticut, and the GBRPA Region (29 to 32 percent, respectively).

Household Demographics: Data on household demographics is most readily available from the 2000 U.S. Census. Table 16 presents a comparison of Census 2000 demographic data for the study area, the City of Bridgeport, the GBRPA Region, Fairfield County, and the State of Connecticut.

Environmental Justice Populations: The U.S. Department of Transportation has a policy to insure nondiscrimination under Title VI of the Civil Rights Act of 1964. The specifics of Title VI are

that "no person in the United States shall, on the ground of race, color, or national origin be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance." Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, was issued in 1998. The Order states "each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations." Table 16 provides information about environmental justice populations in the study area, compared to the City of Bridgeport, surrounding GBRPA region, Fairfield County, and the State of Connecticut as a whole.

Table 16: Comparison of Census 2000 Demographic Data

	Study Area	Bridgeport	GBRPA Region	Fairfield County	State of CT
Population	770	139,529	307,607	882,567	3,405,565
Males	417	66,355	146,638	425,968	1,648,523
Females	353	73,174	160,969	456,599	1,757,042
Median Age	29.7	31.4	n.a.	37.3	37.4
Elderly (65+ Years)	64	15,929	43,777	116,985	469,287
Percent Elderly (65+ Years)	8.3%	11.4%	14.2%	13.3%	13.8%
Percent Below Poverty*	11.2%	17.9%	9.9%	6.8%	7.6%
Percent Minority**	78.8%	69.1%	37.0%	26.9%	22.5%

Source: U.S. Census 2000. Study Area corresponds to portions of Census Tract 743 Block 1. *Poverty is defined by the Census as $8,500 per capita annually or less. **Minority includes white/Hispanic population.

The total population of the study area represents approximately 0.5 percent of the total population of the City of Bridgeport. The median age in the study area (29.7) and Bridgeport (31.4) is less than the GBRPA region (37.3) and the State of Connecticut (37.4). As shown in Table 16, when compared with the City of Bridgeport (69.1 percent) and the rest of the GBRPA region (37.0 percent), the study area contains a higher minority population (78.8 percent). Additionally, the study area and the City of Bridgeport have a greater concentration of low income populations (11.2 percent and 17.9 percent, respectively) than the GBRPA region (9.9 percent), Fairfield County (6.8 percent), and the State of Connecticut (7.6 percent). The data, thereby, indicate that the census tract housing the study area contains concentrations of environmental justice populations based on a higher percentage of minority and low income residents than compared to the larger planning region and State of Connecticut as a whole.

Direct and Indirect Impacts

Local Socio-Economic Conditions

Impacts to local socio-economic conditions were assessed in terms of changes in employment and demand for local goods and services. The No-Action Alternative will constitute continuance of existing conditions and, as such, will have no direct or indirect impacts to local socio-economic conditions.

The Proposed Action will not require any land acquisitions and will not displace any businesses or jobs since it will be constructed on the site of the existing GBT facility. It is expected that the Proposed Action will provide economic benefits for people within the region by providing short- and long-term employment opportunities. More specifically, during the construction of the Proposed Action, more than 250 construction-related jobs will be created or sustained. This number includes quality construction positions and does not include ancillary positions created in the surrounding community and throughout the country as materials are manufactured and transported to the construction site. The Proposed Action will also lead to long-term job creation. Since GBT will have the capability to expand its services over the next 20 years, more than 42 jobs will be created for GBT bus drivers, mechanics, and other support staff, with positions averaging approximately $40,000 each in salary/wages annually.

Additionally, the construction of the Proposed Action will benefit low income and minority populations within the study area by providing expanded and more efficient fixed route and paratransit services, thereby providing increased access to jobs within the region.

Neighborhoods

Impacts to neighborhoods were assessed in terms of disruptions to convenient access within the neighborhood (for vehicles as well as pedestrians or bicyclists), introduction of physical barriers to resident interaction within a neighborhood, loss of community institutions, and loss of structures important to the cohesive architectural or historical fabric of the neighborhood. The No-Action Alternative will constitute continuance of existing conditions and, as such, will have no direct or indirect impacts on neighborhoods.

The Proposed Action will not result in any residential displacements, alter any neighborhood institutions or cultural resources, or further inhibit access within the immediate neighborhood. With the Proposed Action there will be an increase in daily bus, paratransit, and employee vehicles entering and exiting the site. In terms of buses and paratransit vehicles, there will be a total of 48 more vehicles accessing the site daily by 2024 compared to the existing condition, whereas employee vehicle activity will increase by approximately 46 vehicles daily by 2024. According to the traffic analysis, this increased vehicular activity will not cause any of the local neighborhood intersections to become congested or fail. They will continue to function at an acceptable LOS (LOS C or D), meaning neighborhood traffic movements will be similar to the existing condition. The surrounding neighborhood has been subject to very frequent bus and paratransit activity since the existing GBT facility opened in 1987, thus, the expansion of the

facility is compatible with current land use and activities. As such, the Proposed Action will not result in direct impacts to neighborhood cohesion. Indirectly, however, the Proposed Action will facilitate denser infill development as it is the only transportation capacity expansion currently envisioned in the Bridgeport region. This type of infill development is consistent with Bridgeport's current land use and zoning objectives.

Housing

The No-Action Alternative will constitute continuance of existing conditions and, as such, will have no direct or indirect impacts on housing.

The Proposed Action will not involve any property acquisitions and will not displace or cause the loss of any housing units. It will have no direct or indirect effect on the mix of existing housing in the surrounding neighborhoods. Consequently, the Proposed Action will have no adverse direct or indirect impact on housing in the study area.

Environmental Justice Populations

The No-Action Alternative will constitute continuance of existing conditions and, as such, will not include any improvements to the existing GBT maintenance and operations facility. As a result, the No-Action alternative will have no direct impacts on environmental justice populations. The No-Action alternative, however, will have potential indirect impacts on environmental justice populations (in particular those populations without access to an automobile) since transit and paratransit routes will not be expanded as future needs arise, thereby decreasing access to employment locations and opportunities as well as to other important community facilities, services and amenities.

The Proposed Action will not have negative impacts on environmental justice populations, as the project is not anticipated to adversely affect community cohesion/isolation. Additionally, impacts to the aesthetic qualities of the surrounding community are not anticipated as the design of the building will include landscaped areas and planters near the office buildings as well as a vegetated roof on the Administration/Operations building, which will help to reduce the amount of stormwater runoff from the building as well as introduce green/natural space within an otherwise urban landscape. The design also includes dark sky compliant light fixtures which reduce light pollution at night.

With the expansion of the bus fleet and maintenance facility, GBT would be creating long-term employment for people within the region by providing short-term construction as well long-term jobs for bus drivers, mechanics, as well as administrative personnel. The construction of this project would benefit low income and minority populations within the study area by providing long-term, stable employment opportunities. The expansion of the fixed-route and paratransit bus fleet would also benefit low income and minority populations by providing improved access to jobs as well as cultural and institutional destinations within the City of Bridgeport and the region as a whole.

Residents and visitors of the community will be kept informed about the project through the GBT's project website, www.gbt-feip.com. This website provides a description of the project; its benefits (i.e., economic, environmental) to the community; project costs; and contact information for those with questions or the desire for more information.

Mitigation

The Proposed Action will not result in any direct or indirect impacts to housing or existing socio-economic conditions. Rather, through its sustainable design and provision of increased access throughout the region with the future addition of bus and paratransit vehicles, the Proposed Action will provide several benefits to the community. No mitigation is required or proposed.

3.8 WATER QUALITY

Existing Setting

Surface Water

There are no surface water resources located within the footprint of the Proposed Action.

Bruce's Pond is located 700 feet to the east of the Proposed Action site. According to the *Connecticut Surface Water Quality Standards* (CTDEP, December 17, 2002), Bruce's Pond is designated as a Class C/B surface water resource. While Class C/B typically indicates unacceptable water quality, designated uses of these surface waters include recreational uses; fish and wildlife habitat; agricultural and industrial supply and other legitimate uses including navigation.

Groundwater

There are no designated aquifer protection areas or public water supply wells located within 1,000 feet of the Proposed Action site. The Proposed Action site is located within Bridgeport's public water supply area. Public water is provided by Aquarion Company. Although not used as a source of potable water, groundwater underlying the Proposed Action site is designated as Class GB by the CTDEP (*Groundwater Quality Standards* [Effective April 12, 1996]). Designated uses of Class GB groundwater include industrial process water and cooling waters and base-flow for hydraulically connected surface water bodies. Class GB groundwater is presumed to be degraded by a variety of pollutant sources and therefore is not suitable for human consumption without treatment.

Direct and Indirect Impacts

The No-Action Alternative would not result in any direct or indirect impacts to surface water or groundwater resources in the vicinity of the Proposed Action site.

The Proposed Action's potential impacts on water quality associated with surface water, stormwater, and groundwater are described below.

Surface Water and Stormwater

An evaluation conducted by the study team in 2009, determined that the existing stormwater/drainage system is adequate and can support the uses associated with the Proposed Action. The Proposed Action will use the existing stormwater and sewer system currently located on the GBT site. Currently, interior maintenance water flows through an oil/water separator and then is collected in an on-site storage tank before being released into the City's sanitary sewer system. The existing stormwater and sewer systems were determined to be adequate to handle additional storm water and wastewater resulting from the Proposed Action. Additionally, and most important, the Proposed Action would not increase the amount of impervious surface at the site. Although it takes approximately two years for plants to become established, the installation of green vegetative roofing and rain gardens in the limited landscaped areas proposed on site will have the beneficial impact of reducing the quantity and improving the quality of stormwater conveyed to the City's combined sewer system.

During construction, best management practices (BMPs) will be installed and maintained to prevent and minimize sedimentation, siltation, and/or pollution of nearby Bruce's Pond. Mitigation measures are described in more detail below. With the design of the Proposed Action and the implementation of the proposed mitigation, no adverse effects on water quality from the Proposed Action are expected.

Groundwater

There will be no direct or indirect impacts to groundwater resources or aquifer protection areas from the Proposed Action.

Proposed Mitigation

To mitigate temporary surface water quality degradation of Bruce's Pond during construction, a stormwater pollution control plan will be designed and implemented in accordance with the *2002 Connecticut Guidelines for Erosion and Sedimentation Control* (CTDEP 2002). Additionally, the stormwater drainage system will comply with the *Connecticut Stormwater Quality Manual* (CTDEP, 2004). The measures taken will prevent and minimize sedimentation, siltation, and/or further pollution of the Bruce's Pond.

3.9 HYDROLOGY AND FLOODPLAINS

Existing Setting

Floodplains

According to the *Flood Insurance Rate Map (FIRM) for the City of Bridgeport, County of Fairfield* (Federal Emergency Management Agency [FEMA], revised March 1, 1984), there is a small swath of 100-year and 500-year floodplain associated with Bruce's Pond located approximately 700 feet to the east of the Proposed Action site. However, there are no floodways, 100-year, or 500-year floodplains located within the footprint of the Proposed Action.

Stream Channel Encroachment Lines

There are no CTDEP-designated Stream Channel Encroachment Lines (SCELs) located within the footprint of the Proposed Action.

Direct and Indirect Impacts

The No-Action Alternative would involve no construction and no direct or indirect impacts on FEMA designated floodways, 100-year or 500-year floodplains, or CTDEP designated SCELs.

The footprint of the Proposed Action does not contain floodways, 100-year or 500-year floodplains, or CTDEP designated SCELs. Thus, construction of the Proposed Action would not directly affect floodways, floodplains, or SCELs. The Proposed Action would not result in an increase in impervious surface; therefore, downstream or offsite flooding will not be exacerbated by or increase as a result of the Proposed Action. As designed, the Proposed Action includes a vegetative roof (i.e., "green roof") on the top of the maintenance and administration building, which would significantly reduce the amount of stormwater runoff that can be expected from this facility.

Proposed Mitigation

The Proposed Action will have no adverse impacts on hydrology and floodplain resources. Therefore, no mitigation is proposed.

3.10 WETLANDS AND WATERCOURSES

Existing Setting

There are no state- or federally-designated wetlands located within the footprint of the Proposed Action or immediately adjacent to the Proposed Action site.

Direct and Indirect Impacts

The No Action Alternative would not involve construction and therefore would have no direct or indirect impacts on state or federal wetlands.

The Proposed Action would not have any direct or indirect impacts on state or federal wetlands as wetlands are not present in the area.

Proposed Mitigation

The Proposed Action will have no adverse impacts on wetlands. Therefore, no mitigation is proposed or required.

3.11 CRITICAL ENVIRONMENTAL AREAS AND ENDANGERED SPECIES

Existing Setting

The Proposed Action site is a developed parcel located within an urban landscape. The site is, for the most part, devoid of vegetation. There is lawn comprised of landscaped strips, and there are small islands with vegetation including white pine *(Pinus strobus),* sycamore *(Platanus occidentalis),* and burning bush (*Euonymus alata)*; however, the site provides very limited wildlife habitat.

The CTDEP Environmental and Geographic Information Center Natural Diversity Database (NDDB) was consulted to determine if any state or federal threatened, endangered or special concern species or critical habitats are known to occur on the Proposed Action site. Because there were no occurrences of state and federally-listed endangered, threatened, and special concern species and significant communities within the study area per the CTDEP NDDB database, further coordination with the CTDEP is not necessary. With respect to USFWS coordination, the project was reviewed for federally-listed or proposed threatened or endangered species presence per instructions provided on the USFWS New England Field Office website. Based on information currently available, no federally-listed or proposed, threatened or endangered species or critical habitats under the jurisdiction of USFWS are known to occur in the project area As such, per the USFWS website, preparation of a Biological Assessment or further consultation with the USFWS under Section 7 of the Endangered Species Act is not required.

Direct and Indirect Impacts

The No Action Alternative will not involve construction activities of any kind. The existing GBT facility will remain in its present condition and there will be no direct or indirect impacts on wildlife, ecologically sensitive areas, or threatened and endangered species from this alternative.

With respect to the Proposed Action, there are no occurrences of state- and federally-listed endangered, threatened, and special concern species or significant communities within the

Proposed Action study area. Therefore, further coordination with the CTDEP and USFWS is not necessary.

Proposed Mitigation

As there are no state or federal threatened, endangered or special concern species or critical habitats in the Proposed Action study area, there will be no adverse impacts from the Proposed Action. Therefore, mitigation will not be required.

3.12 SOILS AND GEOLOGY

Existing Setting

Soils on the Proposed Action site have been mapped as "Udorthents-Urban Land Complex" by the U.S. Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS). These soils are typically found in areas that have been disturbed by excavation, filling, and other urban development activities, and also in areas that are covered by buildings and pavement.

There are no primary or statewide important farmland soils or active farmlands in the project area.

Direct and Indirect Impacts

The No-Action Alternative will not involve construction and therefore will have no direct or indirect impacts on soils or geology.

Since there are no soils or geological features of cultural, agricultural, or ecological significance in the project area, the Proposed Action would have no adverse impacts on these resources.

Proposed Mitigation

Since no significant adverse impacts on soils or geology are anticipated, no mitigation is required or proposed.

3.13 CULTURAL RESOURCES

Existing Setting

The Proposed Action will be located on the existing GBT site, located south of Barnum Avenue and north of the MNRR tracks, immediately north of the East Bridgeport Rail Yard. All construction and improvements will be made within the boundaries of the existing GBT facility.

The existing GBT site does not contain historic or architectural resources that are on or eligible for listing on the National Register of Historic Places (NRHP) or the State Register of Historic Places

(SRHP). Because of the recent construction dates of the structures on these properties, and their lack of historic or architectural significance, none of these structures would be considered eligible for the NRHP.

A further review of NRHP and Connecticut State Historic Preservation Office (SHPO) files reveals that no historic or architectural resources are located in the area immediately surrounding the site of the Proposed Action. The NRHP property that is closest to the site is the Wilmot Apartments, located about 750 feet south of the site.

In terms of archaeological resources, an archaeological assessment of the rail yard immediately south of the site was carried out in 2009 as part of a survey of improvements planned for the East Bridgeport Rail Yard. This survey included the location of prehistoric and historic archaeological sites in the central and eastern Bridgeport area. This survey revealed that no known archaeological resources are located on the site of the Proposed Action, and that the site's geological patterns, prehistoric settlement patterns, and historic activity make the likelihood of archaeological resources on the site low. Furthermore, the survey indicated that no archaeological resources listed on or considered eligible for the NRHP are located within a mile of the site.

Direct and Indirect Impacts

The No-Action Alternative will not involve any ground disturbance; therefore, no direct or indirect impacts to cultural resources on the Proposed Action site.

In a correspondence letter dated January 12, 2010, the SHPO states that it "expects the proposed undertaking to have no effect on historic, architectural, or archaeological resources listed on or eligible for the National Register of Historic Places" (Refer to Appendix A).

Proposed Mitigation

Since no significant adverse impacts to cultural resources are anticipated from the Proposed Action, no mitigation is required or proposed.

3.14 ENVIRONMENTAL RISK SITES AND HAZARDOUS MATERIALS

Existing Setting

The GBT site is currently used, in part, to store, maintain, and repair the GBT's fleet of buses, vans, and other vehicles. There are fuel pumps on site and substances such as oil, gasoline, and kerosine are regularly used on site.

There are currently five underground storage tanks (USTs) in use at the GBT site. They are characterized as follows:

- Three, 20,000-gallon kerosene tanks (pressurized, fiberglass reinforced plastic);
- One, 10,000-gallon gasoline (pressurized, fiberglass reinforced plastic); and
- One, 4,000-gallon used oil (gravity feed, fiberglass reinforced plastic)

The existing GBT facility has a General Permit for the Discharge of Vehicle Maintenance Wastewater (DEP-PERD-GP-010) and a General Permit for the Discharge of Stormwater Associated with Industrial Activity (DEP-PERD-GP-14).

There are no known spills or soil contamination issues associated with the USTs on the GBT property.

The Proposed Action site is located in an urbanized area surrounded by numerous industrial land uses which may pose environmental risks. None of the adjacent industrial properties are currently included on the Federal Comprehensive Environmental Response Compensation and Liability Act (CERCLA) List. One property abutting the GBT site to the northeast, Bridgeport United Recycling, Inc. (at 50 Cross Street), is a used oil and hazardous waste treatment, storage, and recycling facility. This facility is subject to regulation under the Resource Conservation and Recovery Act (RCRA) as well as State of Connecticut General Statutes Section 22a-454. Bridgeport United Recycling operates a tank farm, wastewater treatment system, container storage area, solids processing area, roll-off storage areas, and an oil filter and empty drum shredding and recycling operation. The company accepts hazardous wastes in bulk and in containers (both regulated and non-regulated materials). On-site processes include, but are not limited to, loading and off-loading of vehicles, solids separation using a coarse screen or sealed filter to protect pumping equipment, storage in tanks, heat treatment in tanks, blending of non-hazardous used fuel oils, blending of hazardous waste fuels, shredding and separation of used oil filters and empty drums, container and roll-off storage, and consolidation of solid wastes into bulk roll-off containers. No disposal occurs directly on the site and all materials are handled in containers or in tanks. All materials are either shipped off-site as wastes or recycled materials or discharged under a state waste water discharge permit to the sanitary sewer.

Activities at Bridgeport United Recycling Facility are permitted by:

- An RCRA facility permit (U.S. EPA Part B) issued by the CTDEP (under CGS Sections 22a-6 & 22a-454) which states the facility is allowed to receive and manage certain hazardous wastes, hazardous waste fuels, and used oil fuels.

- A wastewater discharge permit issued by the CTDEP which governs the chemical constituent concentrations capable of being discharged to a publicly owned treatment works (POTW) and wastes capable of being treated in the facility's waste water treatment system.

Given the nature of the activities conducted on the GBT site and at the adjacent Bridgeport United Recycling Facility, and the proximity of the GBT facility to the adjacent active MNRR rail line,

the potential exists for encountering contamination and/or environmental risks during construction of the Proposed Action.

Direct and Indirect Impacts from Environmental Risk Sites and Hazardous Materials

The No-Action Alternative will be a continuance of existing conditions and would not involve any construction. Therefore, the No Action Alternative will not cause or contribute to potential hazardous materials releases and/or contaminating conditions at the GBT site.

The Proposed Action, which involves the expansion of the existing GBT facility, will involve excavation and grading to prepare the site for foundations and utility connections among other improvements. These activities could result in potential temporary exposure of construction workers to unforeseen hazardous materials and/or soil contamination and could result in increased costs for treatment, containment, and/or disposal.

Construction may require the removal of existing USTs on the GBT site. Any required tank removal will follow the procedures outlined in the National Fire Protection Association (NFPA 30, Appendix B) and related guidelines. Individual soil samples will be obtained from the underlying native soil for characterization purposes. If contaminated soil or groundwater is observed at the site or detected by sampling analysis, the CTDEP will be notified immediately and corrective action will be taken in accordance with Section 22a-449(d)-106 of the Regulations of Connecticut State Agencies (RCSA).

Soil with contaminant levels that exceed the applicable criteria of the Remediation Standard Regulations (RSRs), that is not hazardous waste, is considered to be special waste. The handling and disposal of special wastes will be carried out as specified in Section 22a-209-1 of the RCSA. If contaminated soils are identified on the site, they will need to be professionally removed, abated, and disposed of at an appropriate waste handling facility prior to any demolition or construction activities. If contaminated soils are identified on the site, the GBT will apply for a CTDEP General Permit for Contaminated Soils and/or Sediment Management (Staging & Transfer), which establishes a uniform set of environmentally protective management measures for stockpiling of soils when they are generated during construction.

The Proposed Action is not subject to CTDPH Childhood Lead Poisoning Control Regulations. However, lead-based paint may still be present on the site and in the soils. If lead-based paint or lead-contaminated soil is identified, the classification and disposal of the generated waste must comply with RCRA and CTDEP standards. Additionally, if lead-based paint, lead-containing paint, or lead contaminated soil is identified, construction workers will be trained (at a minimum) according to the Occupational Safety and Health Administration (OSHA) lead standards (29 CFR 1926.62).

Because the Proposed Action will involve the demolition and renovation of existing buildings, an asbestos inspection will need to be performed by an Inspector or a Management Planner licensed by the CTDPH. If asbestos-containing materials are found on the site, asbestos abatement will be

performed by an asbestos abatement contractor licensed by CTDPH and in accordance with all applicable federal, state, and local regulations.

The Radon Potential Map developed by the EPA shows that the Proposed Action is located within Radon Zone 1, which has the highest potential for radon. If radon is discovered on the site, measures will be taken to help control it and its harmful effects, per the CTPDH Radon Program.

The existing GBT facility has a General Permit for the Discharge of Vehicle Maintenance Wastewater (DEP-PERD-GP-010). Registration for a new permit will be required for the expanded maintenance facility. The current GBT facility also has a General Permit for the Discharge of Stormwater Associated with Industrial Activity (DEP-PERD-GP-14). The Stormwater Pollution Prevention Plan prepared under this permit will have to be revised to incorporate the expanded facility.

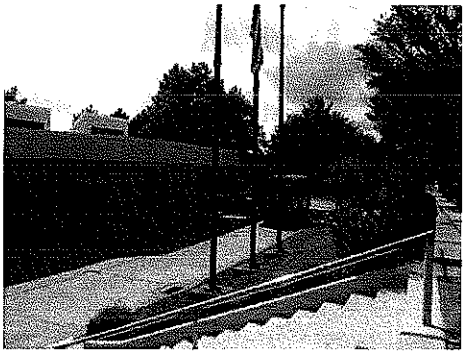
Proposed Mitigation

Due to the nature of existing activities on and adjacent to the Proposed Action site, the potential exists for encountering hazardous and/or contamination risks during construction of the Proposed Action. Therefore, plans and specifications may need to be developed by GBT's design consultant in close coordination with a Licensed Environmental Professional (LEP), the CTDEP, and the CTDPH. The plans and specifications, which will address any identified on-site contamination issues, may include material handling, waste stockpiling and disposal requirements, as well as potential remediation and abatement activities as necessary. Additionally, health and safety measures may need to be implemented during construction to help protect construction workers from potential exposure hazards.

3.15 AESTHETIC/VISUAL EFFECTS

Existing Setting

The existing site contains a concrete, one story block administrative building and a massive rectangular 25-foot tall maintenance facility, and a one-story blue shed. The site is accessed by paved driveways and also contains parking areas, concrete sidewalks, curbing, stairs, and a handicapped ramp. The site is enclosed by chain-link fencing, topped by barbed wire (approximately 10 feet in height). Metal gates are placed at points of entry to the site. There is some lawn and landscaping including mature trees and bushes along the driveway, in islands within the surface parking lot, and between the administrative and maintenance buildings. There are a few dumpsters on the site, situated near the maintenance facility, fuel pumps, and shed. The site is terraced, with the surface parking area to the north located on the upper terrace and the administrative and maintenance facility located on a lower plane to the south.



GBT Administration Building and access driveway facing southwest from upper surface parking lot.

Concrete sidewalk and ramp from upper surface parking lot to GBT Maintenance Facility seen in background (facing east).

Views of the existing site are visible to 1) passengers on MNRR and Amtrak trains, which travel past the site on the tracks immediately to the south, 2) employees and patrons of the lumber yard and self-storage facility to the southwest and the self-storage building to the north, 3) workers at the industrial and recycling facilities to the east, 4) residents living in the house at the western terminus of Cross Street, and 5) employees and visitors to the existing GBT facility.

Views to and from the site generally feature buildings of various architectural styles, sizes, and colors. There is very little vegetation in the viewshed, with the exception of street trees and small patches of turf. There are no visual/aesthetic highlights on the proposed GBT site that stand out against the largely commercial and industrial backdrop.

The existing visual setting is consistent with its surroundings, which include paved streets, utility poles and wires, and concrete sidewalks. Railroad tracks and overhead catenary abut the site to the south. Also to the south is a lumber yard, with several large rectangular warehouses with paved areas in between the warehouses. Rows of one-story self-storage units are located to the southwest. There is a two- or three-story concrete building and massive one-story metallic storage facility to the north. Also to the north are several large paved areas, one appears vacant, while another is populated by large containers filled with materials and tall blue cylinders associated with the adjacent recycling facility. There are also two residential properties to the north of the Proposed Action site within the viewshed.

Direct and Indirect Impacts on Visual/Aesthetic Resources

The No-Action Alternative will be a continuance of existing conditions, and, as such, will not impact the existing visual and aesthetic characteristics of the study area.

With construction of the Proposed Action, the appearance of the site will change. The Proposed Action will increase the height and footprint of the buildings on the existing site. It will replace the existing two-story Administration Building and surface parking lot with a new, larger three-story structure with an employee parking deck on the second level. Although the maintenance

facility will remain on the site, it will be enlarged to allow for additional functions including a paint and body shop. Vegetated areas between buildings and the terrace between the surface parking lot and the Administrative Building will be removed and replaced with a vegetated roof.

Once complete, viewer groups (identified previously), will see a larger and taller GBT facility, which is still consistent with the existing urban setting, already dominated by massive concrete buildings, warehouses, industrial cylinders and recycling containers, expansive paved areas, railroad tracks, and overhead utility and catenary wires. However, within two years after construction, viewers will also have views of the "green", vegetated roof, which will provide green space to an otherwise urban environment.

Mitigation

The Proposed Action will not have an adverse impact on the visual landscape, which is already massive concrete buildings and other industrial, commercial, and transportation-related structures. Therefore, no mitigation is necessary or proposed.

3.16 ENERGY USE AND CONSERVATION

Existing Setting

The Proposed Action site currently contains the existing GBT administrative, operations, and maintenance facility. Utilities providing energy service to the existing GBT facility include:

- United Illuminating – Electricity
- Southern Connecticut Gas – Gas
- Northeast Communications – Radio
- AT&T *and* One Communications – Telephone
- Buckley Energy – Diesel
- Buckley Energy – Gasoline

Direct and Indirect Impacts

The No-Action Alternative will maintain the area in its present condition, and, therefore, the rate of energy demand/consumption would remain essentially constant.

The Proposed Action includes the expansion and renovation of the existing GBT administration, operations, and maintenance facility. While the Proposed Action will occupy a larger space on the site, it is anticipated that the energy consumption per square foot will be reduced by incorporating energy conservation strategies into the facility design. These strategies could include several of the following measures:

- Heat recovery ventilators - Bus storage areas can require a large amount of ventilation air. The heated air that is rejected by these ventilators presents an opportunity for energy

savings during the heating season. Heat Recovery Ventilators use a heat exchanger that transfers heat from the exhaust air stream and uses it to preheat makeup air.

- Direct fired infrared heaters - Infrared heaters heat objects through radiant heat transfer rather than air through convective heat transfer. In areas where garage doors are frequently opened and closed, these systems are a more energy efficient alternative to conventional unit heaters that just heat the air. For the Proposed Action, this system will be installed in the paratransit garage.

- Photovoltaic system - A photovoltaic system uses the sun's energy to produce electricity. In recent years these systems have become more popular and efficient. This has resulted in systems with reduced construction costs and more energy production. A photovoltaic system reduces the amount of energy the facility purchases from its utility. These systems also can be seen as a hedge against future utility rate increases.

Overall, the Proposed Action will result in at least a 12 percent improvement in facility's energy cost savings. Therefore, the Proposed Action will have a positive effect on energy consumption. Temporary increases in energy demand may be expected during construction.

Proposed Mitigation

Since the Proposed Action will be designed to achieve a LEED Silver rating that maximizes overall energy efficiency, adverse energy impacts are not anticipated and no mitigation is required or proposed.

3.17 PUBLIC UTILITIES AND SERVICES

Electric

United Illuminating (UI) supplies electrical power to the Proposed Action site for electricity, heating, and other uses. Overhead power lines supported by utility poles run along the north side of Barnum Avenue, cross to the south side of the street, and run along the west side of the driveway into the GBT site. Overhead power lines supported by utility poles also run along the south side of Cross Street and into the GBT site. Overhead light poles illuminate the access driveway, surface parking lot, and the periphery of the administrative building and maintenance facility.

Communications

AT&T and One Communications provide transmission capabilities for telephone, computer, facsimile, and other telecommunications technologies to the site. From Barnum Avenue and Cross Street, overhead and underground cables feed the administrative building and maintenance facility on site.

Gas

Southern Connecticut Gas Company provides natural gas to the site. There is an underground gas line connecting each of the buildings on the Proposed Action site.

Water

Public water is provided to the site by Aquarion Water Company. This public water is used for drinking, for fire hydrants, for cleaning the GBT vehicles and for other uses. There is a water line connecting each of the buildings on the Proposed Action site.

Sewer

The site is located within the City of Bridgeport's public sewer service area. There is a combined sewer line (carrying both sanitary and storm water) connecting each of the buildings on the Proposed Action site. Treatment is provided by the City's Water Pollution Control Facility (WPCF) through its East Side Facility which discharges treated effluent to Bridgeport Harbor and, ultimately, to Long Island Sound in accordance with the National Pollutant Discharge Elimination System (NPDES) permit administered by the CTDEP.

Direct and Indirect Impacts

The No-Action Alternative will maintain the area in its present condition, and, therefore, will not result in any direct or indirect utility impacts.

The Proposed Action will involve site work that could result in some utility service disruptions for nearby customers. Some of the existing utility infrastructure will need to be relocated and/or replaced to accommodate the improved GBT facilities.

The Proposed Action, by integrating solar technology, will also have beneficial impacts on the amount of electricity and natural gas required for heating of water for use in showers and restrooms on the site. Additionally, daylight tracking skylights, which can be used throughout the day and combined with dimmable ballasts, will allow for a further reduction in the consumption of electricity on the site.

The installation of green vegetative roofing and rain gardens in the limited landscaped areas will have the beneficial impact of reducing the quantity and improving the quality of stormwater conveyed to the City's combined sewer system. Green roofing will also help mitigate the heat island effect of the site, which is currently mostly paved, and will improve the cooling efficiency of buildings during the summer months.

Proposed Mitigation

Utility service disruptions during construction of the Proposed Action will be minimized through close coordination of construction activities and scheduling with utility providers and giving

advanced notice to nearby customers of anticipated outages. Project engineers will coordinate thoroughly with utility providers to minimize environmental and community impacts to the greatest extent practicable.

3.18 PUBLIC HEALTH AND SAFETY

Existing Setting

The Proposed Action will be located in the East End neighborhood, adjacent to the busy Barnum Avenue Corridor, and in close proximity to police, fire, and emergency response services.

The Bridgeport Police Department is headquartered at 300 Congress Street. In addition to this facility, the department operates the West Side Precinct location as well as two substations on the north and east sides of the City; the station located on the east side of the City at 1035 Clarence Street is located 1.5 miles from the Proposed Action site. According to the City's Master Plan, Bridgeport's Police force includes 412 officers. The department also operates a mounted division which provides a presence on city streets, near the City's major attractions, in the Downtown area, and in the City's many parks. Additionally, the department operates bicycle and Segway patrols.

The Bridgeport Fire Department consists of 312 professional, uniformed officers and 15 administrative civilians operating nine engines, four ladder trucks, one heavy rescue vehicle, two sport utility vehicles for use by battalion chiefs, and a fire/rescue boat. This is the only fire and rescue agency in the City and operates out of eight firehouses distributed throughout the city. Engine Company #6 is the closest firehouse to the Proposed Action site, located less than one mile away.

The City of Bridgeport is part of the Joint Hospital Planning Council, which was founded by Bridgeport Hospital and St. Vincent's Medical Center to provide medical control for ambulances operating within the Greater Bridgeport area. The region encompasses Bridgeport, Fairfield, Stratford, Trumbull, Monroe and Easton. Emergency medical services (EMS) within Bridgeport are provided by American Medical Response.

In terms of security at the existing GBT site, a chain-link fence topped with barbed wire currently surrounds the perimeter of the site.

Direct and Indirect Impacts

The No-Action Alternative would be a continuance of existing conditions and therefore would have no impact to public health and safety.

The Proposed Action will incorporate safety and security features by design. Currently there is a chain-link fence topped with barbed wire that surrounds the existing GBT facility. Through the Proposed Action, a new, upgraded fence will be installed around the perimeter of the new facility. The facility will also be equipped with emergency lights and there will be a visual security

system, monitored by an operator. Security for the parking structure, however, will primarily rely on passive security measures such as good lighting and an open floor plan; passive security measures will also be inherent since the parking structure is not hidden from sight or in a remote location.

As currently designed, the Proposed Action will achieve a LEED rating of Silver and will also include several sustainable design features. Sustainable design reduces negative impacts on the environment as well as on the health and comfort of building occupants, thereby improving overall building performance. The basic objectives of sustainable design are to reduce consumption of non-renewable resources, minimize waste, and create healthy, productive environments. Using these design techniques and features will allow GBT to construct a state-of-the-art facility that will benefit the indoor and outdoor environments, as well as the health of GBT employees and the residents of the surrounding neighborhoods. Therefore, no adverse impacts to public health and safety will occur as a result of the Proposed Action.

Proposed Mitigation

As no adverse impacts are anticipated relative to public health and safety, no mitigation is warranted or proposed.

3.19 CONSTRUCTION PERIOD IMPACTS

Temporary Impacts

Construction of the Proposed Action is expected to begin in September 2010 and be complete in early 2012. In order to keep GBT as operational as possible during the design and construction process, the Proposed Action will be constructed in two phases. During Phase 1, the maintenance facility will be enlarged and reorganized and the new administration building will be constructed. It is anticipated that limited site work will be necessary to accommodate the construction work or to enhance the overall safety of the construction activities. Phase 2, will build on the work completed during Phase 1, and will include the construction of the employee parking area, the new service lane, an emergency exit lane, additional paratransit vehicle parking, and one additional maintenance bay that will be able to accommodate an articulated bus.

The following types of equipment, among others, will be used to demolish the existing Administration Building, prepare the site, renovate the maintenance facility, and construct the new buildings:

- Dump trucks
- Dozers
- Backhoes
- Cranes
- Jackhammers

- Loaders
- Pile drivers

Demolition and construction activities will result in a variety of temporary impacts including:

Community Disruption: Increased truck traffic during the construction period may have temporary impacts on nearby residences on Willow Street and Elizabeth Street.

Air Quality: During clearing and construction of the proposed facility and associated paved surfaces, potential air quality impacts may occur as a result of airborne dust particles from exposed soils and emissions from idling and mobile construction vehicles.

Noise: Vehicles and construction activity creates noise which may impact nearby noise-sensitive land uses such as residential dwellings.

Traffic and Parking: There will be temporary, construction period impacts on vehicular movement on Cross Street and the surrounding roadway network near the Proposed Action site.

Water Resources and Water Quality: Construction activity can result in erosion and runoff during storm events, which could potentially impact downstream water resources and water quality.

Solid Waste and Hazardous Materials: Construction activity can result in the generation of solid waste and the excavation of contaminated soils.

Public Utilities and Services: There may be temporary, construction period utility disruptions.

Energy Use and Conservation: Project construction will result in an increased local demand for fossil fuels (mainly diesel fuel for construction equipment) and an increased demand for electricity.

Mitigation

To mitigate the potential impacts during construction, an efficient construction phasing and sequencing plan will be developed that will include the following measures:

- A Maintenance and Protection of Traffic (MPT) plan to ensure that temporary traffic impacts are minimized. Techniques that may be employed include signage, detours, and employment of officers to direct traffic.

- An Erosion and Sedimentation Control Plan (E&S Plan) and a Stormwater Pollution Prevention Plan (SWPPP) will be developed specifically for the Proposed Action. These plans will be implemented and maintained in conformance with the *Connecticut Guidelines for Soil Erosion and Sediment Control* (CTDOT, 2002) and other federal, state and local policies. Silt fences, hay bales, and other controls will be properly installed along

the project disturbance limits and around catch basins, and will be maintained throughout the period of active construction until exposed soils have become stabilized.

- Appropriate mitigation for excessive idling of construction equipment and fugitive dust control are described in Section 22a-174 of the Regulations of Connecticut State Agencies. Mitigation measures to control impacts to air quality during construction will include wetting and stabilization to decrease dust, cleaning paved areas, placing tarps over truck beds when hauling dirt, and staging construction in such as way to minimize the amount and duration of exposed earth. In addition, the contractor will be required to keep equipment maintained and operating efficiently in a clean manner to mitigate any exhaust impacts. Construction vehicles will also need to comply with the three-minute idling regulation. Since the Proposed Action is located in an urban environment, contract specifications will contain provisions regarding CTDOT's diesel vehicle emissions control, requiring certain non-road construction equipment to be retrofitted with emission control devices.

- While construction noise is exempt under Section 22a-69-1.8(g) of the RCSA, construction documents will require the contractor to limit the duration and intensity of noise generated by construction. To mitigate the potential impacts during construction:

    - Noise abatement measures in accordance with CTDOT Form 816 will be included in construction specifications. Such measures include appropriate mufflers on all construction vehicles and restrictions on hours of operation. Nighttime activities will be avoided.

    - Truck traffic will be routed onto streets with the fewest homes.

    - Ensure muffler devices on construction equipment are installed and maintained properly.

    - The project team will conduct ongoing coordination with the City of Bridgeport to employ other measures that may be effective to minimize noise disturbance to nearby residents.

    - Overall, the Proposed Action is envisioned to be in compliance with the Connecticut Noise Regulations.

- Incidental exposure of hazardous materials during construction will be addressed prior to commencement of construction, with the development of a site-specific hazardous materials management plan. A Health & Safety Plan for construction workers will also be developed in accordance with OSHA guidelines. No hazardous materials will be stored on site during construction.

- During all phases of construction, efforts will be made to avoid and minimize impacts to utilities in the area to the greatest extent practicable. Coordination will take place with the City of Bridgeport and all affected utility providers.

3.20 CUMULATIVE IMPACTS

Cumulative effects are defined as the impact on the environment that results from the incremental impact of the Proposed Action when added to other past, present and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions (40 CFR 1508.7). Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Planned and programmed actions considered for this cumulative impacts assessment fall into two categories; land development projects and transportation system projects. Each along with its potential for cumulative effects is described in summary below.

The cumulative effects on environmental resources will be essentially mitigated by the Proposed Action. By implementing state-of-the-art, sustainable and low-impact design features, effective stormwater management, and BMPs, the cumulative effects of the impervious surfaces and runoff will be effectively mitigated. Solid waste management practices are continually being improved to reduce waste and disposal requirements, even as activities and infrastructure grow.

According to the City of Bridgeport, there are several large redevelopment projects in various stages of planning located within the East End neighborhood, all of which have the potential to impact the future demand for transit services. In the direct vicinity of the Proposed Action, the property located to the northwest of the existing employee parking lot is currently being remediated; this site was a scrap yard and is now slated for 75,000 to 100,000 square feet of commercial development. Other projects currently completed or under construction within the vicinity of the Proposed Action include:

- 100,000- square foot expansion of the Seaview Industrial Park,
- 15,000-square foot expansion and renovation of warehousing space on Brookfield Road (located one block east of Cross Street) that will be used for the design and construction of Broadway and cruise line show sets, and a
- 25,000-square foot expansion of light industrial and manufacturing space on Bunnell Street (located west of the Proposed Action).

The cumulative effect of the Proposed Action is expected to be beneficial in that it will facilitate denser infill development and help to foster economic development within the City of Bridgeport. By expanding transit service to meet the increase of future demand from these developments, there is the potential for positive cumulative effects from the Proposed Action in that it will help to ease traffic congestion and provide residents with an alternative mode of transportation for commuting, accessing rail stations, or other activity centers within the region.

4. UNAVOIDABLE ADVERSE IMPACTS

The unavoidable adverse impacts from the Proposed Action are anticipated to include the following:

- Temporary construction-related inconveniences

The Proposed Action includes the expansion and renovation of the existing GBT administration, operations, and maintenance facility. The three-level structure and new parking deck will be larger than the existing GBT facility. Despite this however, the Proposed Action will only result in temporary construction-related impacts.

The Proposed Action will be constructed within the boundaries of the existing GBT site and is consistent with the other adjacent urban and industrial uses. Hence, the Proposed Action will not result in any displaced land uses or secondary development effects. The Proposed Action includes mitigation measures to offset the potential adverse impacts and maintain the safety and quality of life in the site's surroundings during construction, however, given the existing environment, the unavoidable adverse impacts are not estimated to be significant.

5. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

Irreversible and irretrievable commitments of resources caused by the Proposed Action include the following:

- Energy — energy will be consumed during project construction.
- Construction materials — a variety of natural, synthetic, and processed construction materials will be utilized to construct the Proposed Action.
- Human labor — the dedication of human labor to the construction and operational phases of the Proposed Action represents an irretrievable expenditure of time and production that is thus unavailable for other purposes.
- Financial — Project expenditures, once committed, will no longer be available for other purposes and, once spent, cannot be regained.

6. SUMMARY OF MITIGATION MEASURES

The adverse impacts of the Proposed Action are limited and can all be mitigated. The following table summarizes the proposed mitigation measures for each impacted resource category. Where no mitigation is proposed, the impact evaluations have determined that adverse impacts are minor and do not warrant mitigation, that no adverse impacts were identified, or that anticipated impacts will be beneficial.

Table 17: Summary of Impacts and Proposed Mitigation

Resource	Impact Analysis	Mitigation
Land Use and Zoning	Proposed action is compatible with existing land use and zoning. No adverse impacts. No land acquisitions or displacements are required.	No mitigation required or proposed.
Consistency with Local and Regional plans	Proposed Action is consistent with local and regional plans.	No mitigation required or proposed.
State Plan of Conservation and Development (SPOCD) Consistency	Proposed Action is consistent with the SPOCD.	No mitigation required or proposed.
Traffic and Parking	No direct or indirect adverse impacts.	No mitigation is required or proposed.
Bicycle and Pedestrians	No direct or indirect adverse impacts.	No mitigation is required or proposed.
Air Quality	Potential temporary impacts from prolonged use of diesel powered vehicles during construction. Typical diesel air quality emissions include carbon monoxide, hydrocarbons, nitrogen oxides, and particulate matter (PM2.5).	Construction equipment will be required to comply with all pertinent state and federal air quality regulations. Construction period BMPs to be followed to reduce airborne dust, other particulate matter, and odorous substances arising from project operations.
Noise	Construction period impacts: Potential for continuous as well as intermittent (or impulse) noise to be experienced in the immediate project vicinity.	Construction noise is exempt under Section 22a-69-1.8(g) of the RCSA, however, construction noise will adhere to City of Bridgeport Noise Control Regulations.
Neighborhoods and Housing	No direct or indirect adverse impacts.	No mitigation is required or proposed.
Water Quality	No direct or indirect adverse impacts.	No mitigation is required or proposed.
Hydrology and Floodplains	No direct or indirect adverse impacts.	No mitigation is required or proposed.
Wetlands	No direct or indirect adverse impacts.	No mitigation is required or proposed.

Resource	Impact Analysis	Mitigation
Critical Environmental Areas and Endangered Species	No direct or indirect adverse impacts.	No mitigation is required or proposed.
Soils and Geology	No direct or indirect adverse impacts.	No mitigation is required or proposed.
Cultural Resources	No direct or indirect adverse impacts.	No mitigation is required or proposed.
Environmental Risk Sites and Hazardous Materials	Contaminated soils will be mitigated appropriately and may involve the hauling of these soils to a licensed disposal facility in order to eliminate potential exposure hazards.	Soil characterization will be required for this project and if soils are found to be contaminated, potential transport offsite to a licensed disposal facility will be required. Potential site contamination issues will be thoroughly coordinated with the CTDEP during project permitting and construction to ensure proper containment of any contamination threats. Lead-based paint or lead-contaminated soil, if confirmed on-site, will be identified, classified and disposed of in accordance with RCRA, CTDEP and CTDPH standards. If asbestos-containing materials are confirmed on-site, asbestos abatement will be performed by an asbestos abatement contractor licensed by CTDPH and in accordance with all applicable federal, state, and local regulations.
Aesthetics and Visual Effects	No direct or indirect adverse impacts. The new facility, as currently designed, will be state-of-the-art and will therefore be more visually appealing. The Proposed Action also will include a limited amount of buffer landscaping and also includes a 70,000 square-foot vegetative roof that will increase the facility's aesthetic appeal.	No mitigation is required or proposed.
Energy Uses and Conservation	Temporary increased local demand for fossil fuels and an increased demand for electricity during construction. Due to its sustainable design, the Proposed Action will be more energy efficient and will therefore reduce the amount of energy consumption at the site.	No mitigation is required or proposed.

Resource	Impact Analysis	Mitigation
Public Utilities and Services	Potential construction period utility service disruptions.	Proactive consultation with utility providers prior to construction to ensure full coordination on new service connections and to minimize utility service disruptions.
Public Health and Safety	No direct or indirect adverse impacts.	No mitigation is required or proposed.

7. COST BENEFIT ANALYSIS

The primary costs of the Proposed Action arise from the monetary outlay and energy consumption required for constructing the new tiered parking structure. The estimated cost for the Proposed Action is approximately $56 million.

Costs associated with environmental impacts are minimal, as the Proposed Action is very compatible with its surroundings, is located entirely within the boundaries of the existing GBT site, and represents an updated and/or improved use rather than a new use. The new construction will enable more efficient and safer operations within a state-of-the-art, LEED-Silver certified facility hence the project will not result in a net change overall in utility demands or energy demands.

Although monetary costs of the Proposed Action are sizeable, without the project, GBT would not be able to grow and accommodate future ridership demand. An additional maintenance and operations facility would need to be constructed in another location within the City of Bridgeport, where land is available, but where significant environmental clean-up and other improvements may be needed, driving up the cost of the project.

Considering the immediate and long-term benefits of the Proposed Action, which will add much-needed employee/visitor parking spaces, additional vehicle maintenance and storage capacity, additional administrative space, and create stable employment opportunities, weighed against the project's construction costs and minor adverse impacts, the Proposed Action appears to be an advantageous activity that justifies the expenditures.

8. LIST OF CERTIFICATES, PERMITS, AND APPROVALS

Certificates, Permits and Approvals

The following permits, approvals, certifications, and registrations may be required for completion of the Proposed Action:

Federal

No federal permits, approvals or certifications will be required for the Proposed Action

State

- CTDEP General Permit: Discharge of Vehicle Maintenance Wastewater (DEP-PERD-GP-010). Registration of a new permit will be required for the expanded maintenance facility.

- CTDEP General Permit: Discharge of Stormwater Associated with Industrial Activity (DEP-PERD-GP-14). The Stormwater Pollution Prevention Plan prepared under this permit will need to be revised to incorporate the expanded facility.

- CTDEP, Bureau of Air Management: New Source Review Permit

City of Bridgeport

- Petition to the City Planning and Zoning Commission
    - Site plan review
    - Special permit
    - Soil erosion and sediment control plan review

- Petition to the Zoning Board of Appeals

REFERENCES

City of Bridgeport, City Council. 2006. *East End Neighborhood Revitalization Zone Plan.*

City of Bridgeport, Planning and Zoning Commission. March, 2008 *Bridgeport 2020: A Vision for the Future.*

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Connecticut Economic Resource Council, 2009. *Town Profile for Bridgeport.*

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Connecticut Office of Policy and Management, 2005. *Conservation and Development Policies Plan for Connecticut, 2005-2010*

Federal Emergency Management Administration, March 1, 1984. *Flood Insurance Study and Flood Insurance Rate Map for the City of Bridgeport, Connecticut, Fairfield County*

Greater Bridgeport Regional Planning Agency, January, 2008. *Growth Management Alternatives Regional Conservation and Development Plan Update.*

Greater Bridgeport Regional Planning Agency, 2004. *Regional Transportation Plan for the Greater Bridgeport Planning Region: 2004-2028.*

Transportation Strategy Board, January 2003. *Transportation: A Strategic Investment*

US Department of Labor, 1987. *Standard Industrial Classification (SIC) Manual*

U.S. Department of Transportation, May, 2006. *Transit Noise and Vibration Impact Assessment*, FTA-VA-90-1003-06.

U.S. Environmental Protection Agency, Region 1, July 2009. *2008 Annual Report on Air Quality in New England.*

U. S. Census Bureau. *2000 U.S. Census*

Web References:

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APPENDIX A
Scoping Notice and Correspondence/Coordination

Scoping Notice

Project Title: Greater Bridgeport Transit Maintenance / Operations Facility

Municipality where proposed project might be located: City of Bridgeport

Address of Possible Project Location: Barnum Avenue (south side of road) in Bridgeport, CT. The possible project location is between Summerfield Avenue to the north, Elizabeth Street to the east, and Metro North Railroad tracks to the south.

Project Description: The Greater Bridgeport Transit Authority (GBTA) transit maintenance and operations facility has reached its capacity. The GBTA projects growth in employees and equipment over the next 20 years. The proposed project is a transit facility to accommodate GBTA's projected growth. The proposed project consists of improvements to an existing or construction of a new administration and operations building, expanded surface parking, a new paratransit vehicle storage building, renovated maintenance facility, and a new paint and body shop. The facility would incorporate energy efficiencies into its design and LEED certification rating of Silver would be pursued. Driveways and service lanes would be reconfigured for improved access and internal circulation.

Aerial Photo and Project Outline: Click here to view an aerial photo of the project area.

Written comments from the public are welcomed and will be accepted until the close of business on: Friday, November 20, 2009

Any person can ask the sponsoring agency to hold a Public Scoping Meeting by sending such a request to the address below. If a meeting is requested by 25 or more individuals, or by an association that represents 25 or more members, the sponsoring agency shall schedule a Public Scoping Meeting.

Written comments and/or requests for a Public Scoping Meeting should be sent to:

Name: Ms. Colleen Kissane - Transp. Assistant Planning Director
Agency: State of Connecticut Department of Transportation

Address: 2800 Berlin Turnpike, Newington, CT 06106

Fax: 860-594-3028
E-Mail: colleen.kissane@ct.gov

If you have questions about the public meeting, or other questions about the scoping for this project, contact:

Name: Mr. Keith T. Hall - Transportation Supervising Planner
Agency: State of Connecticut Department of Transportation

Address: 2800 Berlin Turnpike, Newington, CT 06106

Phone: 860-594-2926
Fax: 860-594-3028
E-Mail: keith.hall@ct.gov

The agency expects to release an Environmental Impact Evaluation for this project, for public review and comment, in February 2010.

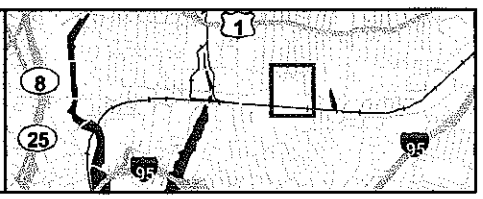
Further information on the project may be found at: http://www.gbt-feip.com/

Proposed Greater Bridgeport Transit Authority Maintenance/Operations Facility Site

Legend

Site Location

0 75 150 225 300 Feet



STATE OF CONNECTICUT

DEPARTMENT OF ENVIRONMENTAL PROTECTION

OFFICE OF ENVIRONMENTAL REVIEW

79 ELM STREET, HARTFORD, CT 06106-5127

To: Colleen Kissane - Transportation Assistant Planning Director
DOT - Bureau of Policy & Planning, 2800 Berlin Turnpike, Newington

From: David J. Fox - Senior Environmental Analyst **Telephone:** 860-424-4111

Date: November 20, 2009 **E-Mail:** david.fox@ct.gov

Subject: Greater Bridgeport Transit Maintenance/Operations Facility

The Department of Environmental Protection has received the Notice of Scoping announcing preparation of an Environmental Impact Evaluation for expansion and improvements to the Greater Bridgeport Transit Authority's maintenance and administrative facility at 1 Cross Street in Bridgeport. The following commentary is submitted for your consideration.

The proposed project is not within Connecticut's coastal boundary as defined by section 22a-94 of the Connecticut General Statutes (CGS). The site is not within the 100-year or 500-year flood zone on the community's Flood Insurance Rate Map. The Natural Resources Conservation Service's Soil Survey of Fairfield County does not depict any wetland soils in the project area; the entire site is classified as urban land or udorthents soil.

Pursuant to section 16a-38k of the CGS, any new construction of a state facility that is projected to cost five million dollars or more, or renovation of a state facility that is projected to cost two million dollars or more must comply with or exceed compliance with the silver building rating of the Leadership in Energy and Environmental Design's (LEED®) rating system for new commercial construction and major renovation projects, as established by the United States Green Building Council, or an equivalent standard, such as a two-globe rating in the Green Globes USA design program. Although since this is not a state facility and this requirement does not apply, the Greater Bridgeport Transit Authority web site describing the project indicates that the expansion will be designed to achieve a silver (LEED®) rating. The Department endorses this commitment.

The description on the web site also notes sustainable design elements for the facility, including a green roof and landscape irrigation with stormwater. The Department strongly encourages the use of these types of Low Impact Development (LID) measures. The description mentions using water collected from the green roof for irrigation. It should be noted that, at least during the first few years after installation, the green roof will likely require watering until the plants are established and, depending on the design of the roof, limited excess water may available thereafter, except during larger storm events.

LID site planning principles involve controlling stormwater/snowmelt runoff volume at the source and hydrologically functional landscaping. Key strategies for effective LID include:

conserving and restoring vegetation and soils, designing the site to minimize impervious surfaces, managing stormwater close to where the rain/snow falls, and providing for maintenance and education. Consequently, we typically recommend the utilization of one, or a combination of, the following measures. As noted in the project description, the site's size and location limits the applicability of some measures. However, they are provided below for your consideration.

- the use of pervious pavement or grid pavers (which are very compatible for parking lot and fire lane applications), or impervious pavement without curbs or with notched curbs to direct runoff to properly designed and installed infiltration areas,
- the use of vegetated swales, tree box filters, and/or infiltration islands to infiltrate and treat stormwater runoff (from building roofs and parking lots),
- the minimization of access road widths and parking lot areas to the maximum extent possible to reduce the area of impervious surface,
- if soil conditions permit, the use of dry wells to manage runoff from the building roofs,
- the use of vegetated roofs (green roofs) to reduce the runoff from buildings,
- proper treatment of special activity areas (e.g. loading docks, covered maintenance and service areas),
- the installation of rainwater harvesting systems to capture stormwater from building roofs for the purpose of reuse for irrigation, and
- providing for pollution prevention measures to reduce the introduction of pollutants to the environment.

The effectiveness of various LID techniques that rely on infiltration depends on the soil types present at the site. The siting of areas for infiltration must also consider any existing soil or groundwater contamination.

Development plans in urban areas that entail soil excavation should include a protocol for sampling and analysis of potentially contaminated soil. Soil with contaminant levels that exceed the applicable criteria of the Remediation Standard Regulations, that is not hazardous waste, is considered to be special waste. The disposal of special wastes, as defined in section 22a-209-1 of the Regulations of Connecticut State Agencies (RCSA), requires written authorization from the Waste Engineering and Enforcement Division prior to delivery to any solid waste disposal facility in Connecticut. If clean fill is to be segregated from waste material, there must be strict adherence to the definition of clean fill, as provided in Section 22a-209-1 of the RCSA. A fact sheet regarding disposal of special wastes and the authorization application form may be obtained at: http://www.ct.gov/dep/cwp/view.asp?a=2709&q=324202&depNav_GID=1646.

The Waste Engineering & Enforcement Division has issued a *General Permit for Contaminated Soil and/or Sediment Management (Staging & Transfer)*. It establishes a uniform set of environmentally protective management measures for stockpiling soils when they are generated during construction or utility installation projects where contaminated soils are typically managed (held temporarily during characterization procedures to determine a final disposition). Temporary storage of less than 1000 cubic yards of contaminated soils (which are not hazardous waste) at the excavation site does not require registration, provided that activities are conducted in accordance with the applicable conditions of the general permit. Registration is required for on-site storage of more than 1000 cubic yards for more than 45 days or transfer of

more than 10 cubic yards off-site. A fact sheet describing the general permit, a copy of the general permit and registration forms are available on-line at: http://www.ct.gov/dep/cwp/view.asp?a=2709&q=324210&depNav_GID=1643#ContSoilSedMgmntGP.

There are three underground storage tanks registered at the facility. If any of tanks are to be removed, the procedures outlined in the code of the National Fire Protection Association (NFPA 30, Appendix B) should be followed. Individual soil samples should be obtained from the underlying native soil. A listing of potential contaminants that should be analyzed and suggested analytical methods is available on-line at: http://www.ct.gov/dep/cwp/view.asp?a=2692&q=322592. If contaminated soil, ground water or free product is observed at the site or detected by sample analysis, the DEP must be immediately notified at (860) 424-3338 and corrective action must be undertaken in accordance with section 22a-449(d)-106 of the Regulations of Connecticut State Agencies. Closure reports, including confirmation of sampling and clean-up, are required by Federal and State law. For further information, contact the Bureau of Materials Management & Compliance Assurance, Underground Storage Tank Program at 860-424-3374.

The existing facility has a *General Permit for the Discharge of Vehicle Maintenance Wastewater* (DEP-PERD-GP-010). Registration for a new permit will be required for the expanded maintenance facility.

The facility also has a *General Permit for the Discharge of Stormwater Associated with Industrial Activity* (DEP-PERD-GP-014). The Stormwater Pollution Prevention Plan prepared under this permit will have to be revised to incorporate the expanded facility.

The project description notes the construction of a new paint and body shop. The New Source Review permit program, administered by the Engineering and Enforcement Division of the Bureau of Air Management, regulates emissions released to the air from new and modified stationary sources as enumerated in Section 22a-174-3a(a)(1) of the RCSA, including paint spray booths. Section 22a-174-3b and -3c of the RCSA allow for exemptions from permitting for construction and operation of certain equipment, including automotive refinishing operations. Prior to beginning the actual construction of any stationary source or modification of any source to which Section 22a-174-3a(a)(1) applies, the owner or operator must apply for and obtain an individual permit or elect to operate the source in accordance with the provisions of Section 22a-174-3b or -3c. The automotive refinishing operations may also be subject to federal regulations pursuant to Title 40 of the Code of Federal Regulations Parts 60 and 63. For additional information, contact the Division's Engineer of the Day at 860-424-4152. A fact sheet describing the New Source Review permit program is available on-line at: http://www.ct.gov/dep/cwp/view.asp?a=2709&q=324136&depNav_GID=1643
The regulations are also available on-line at:
http://www.ct.gov/dep/lib/dep/regulations/22a/22a-174-1through200.pdf

In addition to typical mitigation measure to minimize impacts to air quality during construction, the Department also recommends the use of construction equipment with air pollution control devices or the use of "clean" fuels. Equipment, such as diesel oxidation

catalysts or particulate filters, or the use of ultra-low sulfur fuel (15 ppm sulfur) can be effective in reducing exhaust emissions. "Clean" fuels, including compressed natural gas or emulsified fuels (e.g., Purinox, approved by the California Air Resources Board) can also be effective in reducing exhaust emissions. It would be appropriate, at this urban location, that contract specifications contain provisions of DOT's diesel vehicle emissions control language requiring certain non-road construction equipment to be retrofitted with emission control devices. The Department also recommends using newer on-road construction vehicles that meet EPA's latest emission standards or use of diesel oxidation catalysts/particulate filters and clean fuel for pre 2007-model year on-road vehicles typically used in construction projects. These on-road vehicles include dump trucks, fuel delivery trucks and other vehicles typically found at construction sites.

Additionally, Section 22a-174-18(b)(3)(C) of the RCSA limits the idling of mobile sources to 3 minutes. This regulation includes on-road vehicles such as trucks and other diesel engine-powered vehicles commonly used on construction sites. Adhering to the regulation will reduce unnecessary idling at truck staging zones, delivery or truck dumping areas and further reduce construction equipment emissions. Use of posted signs indicating the three-minute idling limit is recommended. It should be noted that only DEP can enforce Section 22a-174-18(b)(3)(C) of the RCSA. Therefore, it is recommended that the project sponsor include language similar to the anti-idling regulations in the contract specifications (included in DOT's contract specification) for construction in order to allow them to enforce idling restrictions at the project site without the involvement of the Department.

The Natural Diversity Data Base, maintained by DEP, contains no records of extant populations of Federally listed endangered or threatened species or species listed by the State, pursuant to section 26-306 of the CGS, as endangered, threatened or special concern in the project area. This information is not necessarily the result of comprehensive or site-specific field investigations. Consultation with the Natural Diversity Data Base should not be substituted for on-site surveys required for environmental assessments. The extent of investigation by competent biologist(s) of the flora and fauna found at the site would depend on the nature of the existing habitat(s). If field investigations reveal any Federal or State listed species, please contact the Environmental & Geographic Information Center at 860-424-3540.

Thank you for the opportunity to review this project. If there are any questions regarding these comments, please contact me.

cc: Keith T. Hall, DOT
Robert Hannon, DEO/OPPD
Ken Major, DEP/PED
Jessica Morgan, DEP/WPSD
Ellen Pierce, DEP/APSD
Ric Pirolli, DEP/AEED

STATE OF CONNECTICUT

DEPARTMENT OF PUBLIC HEALTH

December 21, 2009

Ms. Colleen Kissane – Transportation Assistant Planning Director
State of Connecticut Department of Transportation
2800 Berlin Turnpike
Newington, CT 06106

RE: Notice of Scoping for Greater Bridgeport transit Maintenance/Operations Facility, Bridgeport, CT

Dear Ms. Kissane:

A review of the notice of scoping documents reveals limited information at this stage of the project. However, it does mention construction of a building. If a building is to be constructed, it should be built using radon resistant features. renovated, or remodeled, and soil excavation is undertaken, then it should be built using radon resistant features. Should the project include any demolition of existing buildings, remodeling, renovation, or excavation of soils, then a plan must be in place to address lead contaminated soils, lead-based paint, and asbestos since these materials may be encountered during demolition or excavating activities. This type of construction activity could result in the disturbance of surfaces that may contain asbestos, lead-based paint and/or lead contaminated soils.

The following summarizes the Department's position with regard to lead, asbestos, and radon:

A. Lead-Based Paint:

It does not appear that excavation or construction activities that may be associated with this project are subject to the Department of Public Health (DPH), Childhood Lead Poisoning Prevention and Control Regulations (§§19a-111-1 through 19a-111-11). However, there are other issues that must be addressed related to lead-based paint. Among these issues are the following:

- Testing of paint on existing structures marked for demolition or testing for lead in soils should be performed by a lead inspector or lead inspector/risk assessor certified by the DPH.
- Planned demolition or soil removal activities should be performed using lead-safe work practices.
- If lead-based paint or lead contaminated soil is identified, the classification and disposal of generated waste must comply with the Resource Conservation Recovery Act (RCRA) and Connecticut Department of Environmental Protection standards (e. g., Toxicity

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Characteristics Leaching Procedure [TCLP] testing, reporting, and record keeping requirements).

- Additionally, if lead-based paint, lead containing paint, or lead contaminated soil is identified, workers must be trained (as a minimum) according to the Occupational Safety and Health Administration (OSHA) lead standards (29 CFR 1926.62).
- Because other contaminants may also be present on the site, additional health and safety training may be required (e. g., hazardous waste and/or asbestos).

Additional inquires on the subject of lead-based paint can be directed to Francesca Provenzano Health Program Supervisor of the Lead Poisoning Prevention and Control Program at (860) 509-7299.

B. Asbestos Program:

The asbestos inspection must be conducted by an Inspector or a Management Planner licensed by the DPH. Asbestos abatement that involves more than three (3) linear feet or more than three (3) square feet of asbestos-containing material must be performed by an asbestos abatement contractor licensed by the DPH. Additionally, the DPH must be provided with notification prior to asbestos abatement that involves greater than 10 linear feet or greater than 25 square feet. Asbestos abatement must be performed in accordance with all applicable federal, state and local regulations.

Additional inquiries on the subject of asbestos abatement can be directed to Ronald Skomro, Supervising Environmental Analyst of the Asbestos Program at 860-509-7367.

C. Radon

The United States Environmental Protection Agency (EPA) developed a radon potential map using data from studies and surveys conducted in Connecticut. The map assigns each of the counties in Connecticut one of three zones based on radon potential. The radon zone designation of the highest potential is Zone 1, the moderate potential is Zone 2, and the low potential is Zone 3. The proposed site is located in a high potential, Zone 1 area. Therefore, measures should be taken to help control radon and its harmful effects. The Connecticut Department of Public health Radon program recommends that during the construction of the building, radon resistant features should be built into the infrastructure of the building.

The list below describes the basic components of radon resistant new construction:

- A gas permeable layer, such as 4-inch gravel, placed beneath the slab to allow soil gases to move freely underneath the building
- Plastic sheeting over the gas permeable layer and under the slab to help prevent soil gases from entering the home
- Sealing and caulking all openings in the foundation floor to reduce soil gas entry
- A vent pipe, such as 6 inch PVC pipe, to run from the gas permeable layer through the building to the roof to safely vent soil gases above the building
- An electrical junction box installed in case an electric venting fan is needed later

The facility should be tested for radon after construction is completed. If radon results are at or above 4.0 picocuries per liter (pCi/L), the existing system should be activated by installing an in-line fan. For a list of qualified radon mitigation contractors to assist with the system activation, please refer to the following website:
www.dph.state.ct.us/BRS/Radon/radon_program.htm

Additional inquiries on the subject of radon-resistant new construction can be directed to Francesca Provenzano, Health Program Supervisor of the Radon Program at 860-509-7367.

Sincerely,

Suzanne Blancaflor, M.S., Chief
Environmental Health Section

C: J. Smith, Office of Policy Management

STATE OF CONNECTICUT

DEPARTMENT OF PUBLIC HEALTH

November 19, 2009

Colleen Kissane
Transportation Assistant Planning Director
Department of Transportation
2800 Berlin Turnpike
Newington, CT 06131

RE: Notice of Scoping for Greater Bridgeport Transit Maintenance / Operations Facility
Barnum Avenue, Bridgeport

Dear Ms. Kissane:

The Drinking Water Section of the Department of Public Health has reviewed the above-mentioned project for potential impacts to any sources of public drinking water supply. This project does not appear to be in a public water supply source water area; therefore, the Drinking Water Section has no comments at this time.

Sincerely,

Eric McPhee
Supervising Environmental Analyst
Drinking Water Section

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Connecticut Commission on Culture & Tourism

Historic Preservation and Museum Division

One Constitution Plaza
Second Floor
Hartford, Connecticut
06103

860.256.2800
860.256.2763 (f)

January 12, 2010

Ms. Rebecca M Parkin
Senior Planner
Fitzgerald & Halliday, Inc.
72 Cedar Street
Hartford, CT 06106

Subject: Greater Bridgeport Transportation Center, 1 Cross Street, Bridgeport, Connecticut

Dear Ms. Parkin:

The State Historic Preservation Office has reviewed the above-named project. It is our understanding that Greater Bridgeport Transit (GBT) is seeking to improve and expand its existing Maintenance/Operations Facility in Bridgeport. The GBT is seeking a Federal Categorical Exclusion with Documentation in compliance with the National Environmental Policy Act. The project is also subject to review under the Connecticut Environmental Policy Act (CEPA). The proposed action will affect three existing single story concrete block buildings constructed between 1987 band 1990 sited on a 6.5 acre parcel immediately north of the East Bridgeport Rail Yard. Based on the information that you have provided, this office expects that the proposed undertaking will have no effect on historic, architectural, or archaeological resources listed on or eligible for the National Register of Historic Places.

This office appreciates the opportunity to have reviewed and commented upon the proposed undertaking.

This comment is provided in accordance with the National Historic Preservation Act and the Connecticut Environmental Policy Act.

For further information, please contact Mr. Daniel Forrest, Staff Archaeologist, at (860) 256-2761 or daniel.forrest@ct.gov.

Sincerely,

David Bahlman
Deputy State Historic Preservation Officer

APPENDIX B
EIE Distribution List

State Representatives and Senators

Hon. Charles Clemons State Representative Legislative Office Building, Room 4064 Hartford, CT 06106-1591	Hon. Christopher Caruso State Representative Legislative Office Building, Room 5001 Hartford, CT 06106-1591
Hon. John Hennessy State Representative Legislative Office Building, Room 4068 Hartford, CT 06106-1591	Hon. Andres Ayala Jr. State Representative Legislative Office Building, Room 4022 Hartford, CT 06106-1591
Hon Auden Grogins State Representative Legislative Office Building, Room 4024 Hartford, CT 06106-1591	Hon Ezequiel Santiago State Representative Legislative Office Building, Room 4002 Hartford, CT 06106-1591
Hon Anthony Musto State Senator Legislative Office Building, Room 2100 Hartford, CT 06106-1595	Hon. Edwin Gomes State Senator Legislative Office Building, Room 3100 Hartford, CT 06106-1595

Town Officials

Hon. Thomas C. McCarthy, Council President Bridgeport City Council Office of Legislative Services 999 Broad St. Bridgeport, CT 06604	Ms. Fleeta Hudson, City Clerk City of Bridgeport 45 Lyon Terrace Room 204 Bridgeport, CT 06604
Barry W. Skinner, P.E., City Engineer City of Bridgeport 45 Lyon Terrace Room 216 Bridgeport, CT 06604	Michael Nidoh, Director of City Planning Office of Planning and Economic Development Bridgeport City Hall Annex - 2nd Floor 999 Broad Street Bridgeport, CT 06604

State Agencies

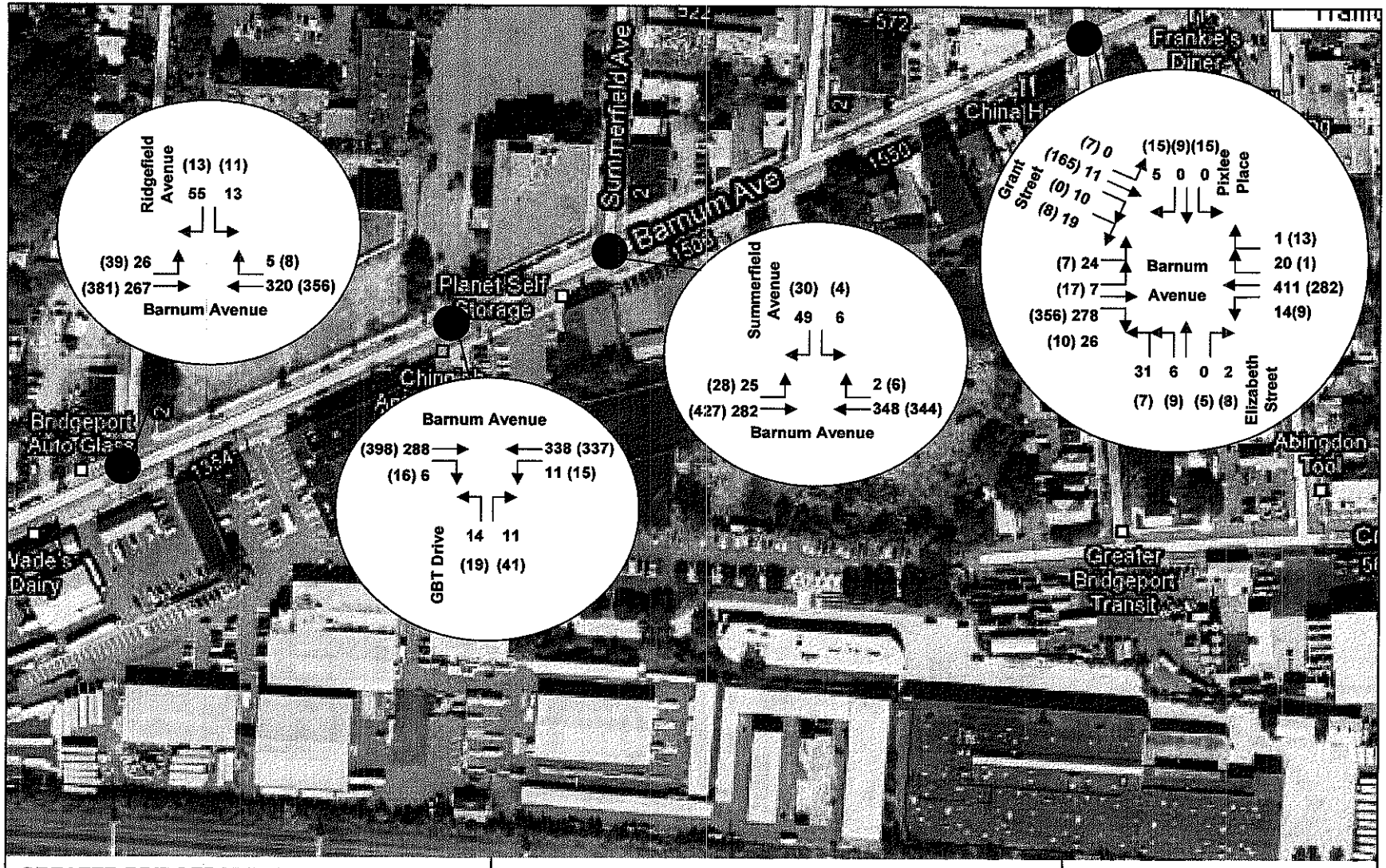
Ms. Amey Marrella Commissioner Department of Environmental Protection 79 Elm Street Hartford, CT 06106	Mr. Kendall Wiggin State Librarian Connecticut State Library 231 Capitol Avenue Hartford, CT 06106
Ms. Karen Senich Executive Director Connecticut Commission on Culture & Tourism Historic Preservation & Museum Division 59 South Prospect St. Hartford, CT 06106	Mr. Robert M. Ward Commissioner Connecticut Department of Motor Vehicles 60 State Street Wethersfield, CT 06161

Hon. Brenda I. Sisco Acting Secretary Office of Policy and Management 450 Capitol Avenue Hartford, CT 06106-1308	Hon. J. Robert Galvin, M.D., M.P.H. Commissioner Department of Public Health 410 Capitol Avenue MS#13COM Hartford, CT 06106
Mr. David Fox Senior Environmental Analyst Department of Environmental Protection 79 Elm Street Hartford, CT 06102	Hon. Raeanne V. Curtis Commissioner Department of Public Works 165 Capitol Avenue Hartford, CT 06106
Ms. Joan McDonald Commissioner Dept. of Economic and Community Development 505 Hudson Street Hartford CT 06106	Mr. Judd Everhart Director of Communications Department of Transportation Office of Communications P.O. Box 317546 2800 Berlin Turnpike Newington, CT 06131-7546
Mr. Karl J. Wagener Executive Director Council on Environmental Quality 79 Elm Street Hartford, CT 06106	Mr. Raymond Jordan State Coordinator CT Department of Housing and Urban Development One Corporate Center, 19th Floor Hartford, CT 06103

Other

Mr. Mark Nielsen Executive Director Greater Bridgeport Regional Planning Agency 525 Water Street, Suite One Bridgeport, CT 06604	Mr. Scott Hughes, City Librarian Bridgeport Library Burroughs Building, Main Library 925 Broad Street Bridgeport, CT 06604

APPENDIX C
Supporting Traffic Data



GREATER BRIDGEPORT TRANSIT AUTHORITY FACILITY EXPANSION AND IMPROVEMENT BRIDGEPORT, CONNECTICUT

State Project No. 0410-T077

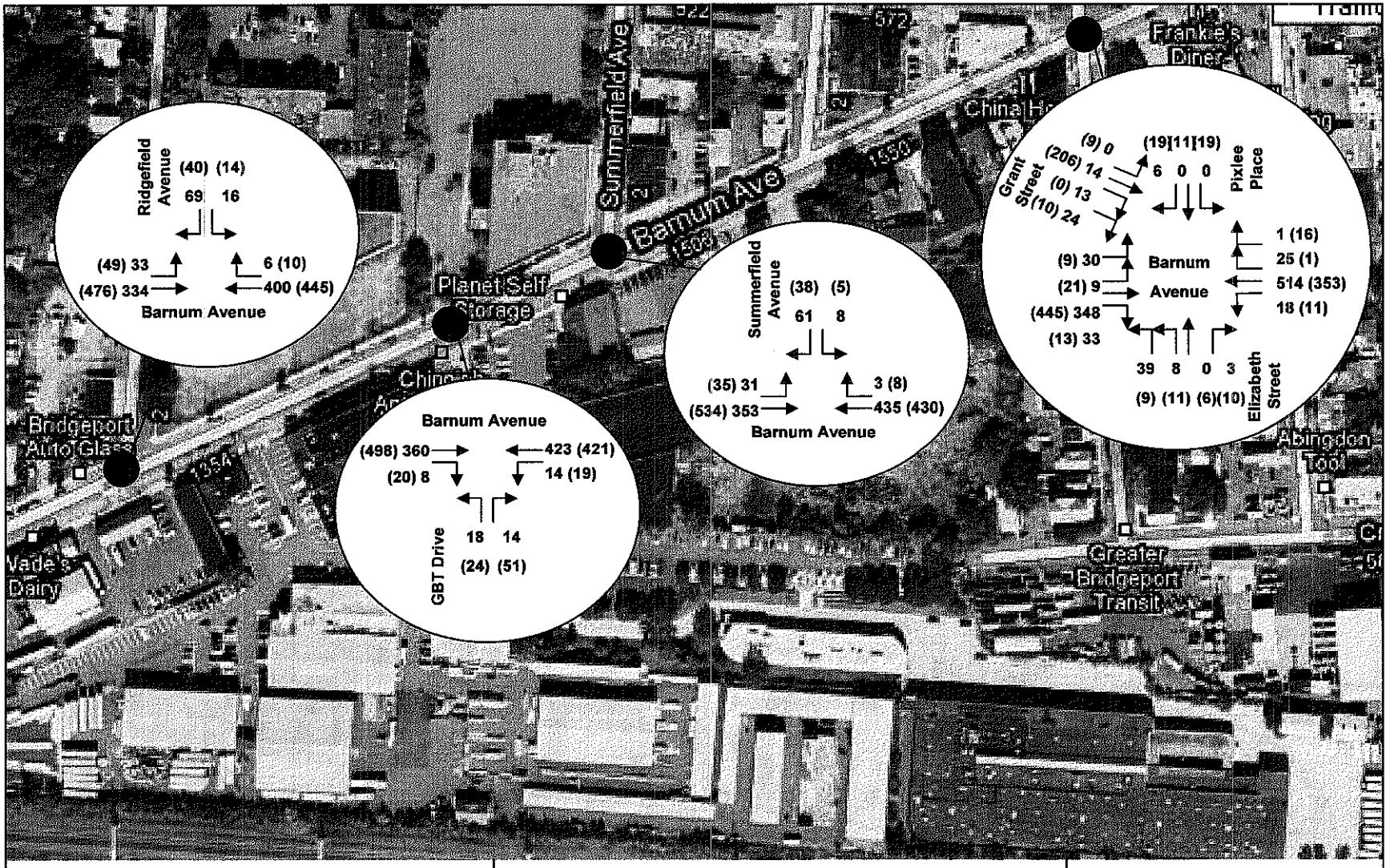
N W E S

XX AM Peak Hour

(XX) PM Peak Hour

Existing Condition (2010)

Peak Hourly Traffic Volumes



GREATER BRIDGEPORT TRANSIT AUTHORITY FACILITY EXPANSION AND IMPROVEMENT BRIDGEPORT, CONNECTICUT

State Project No. 0410-T077

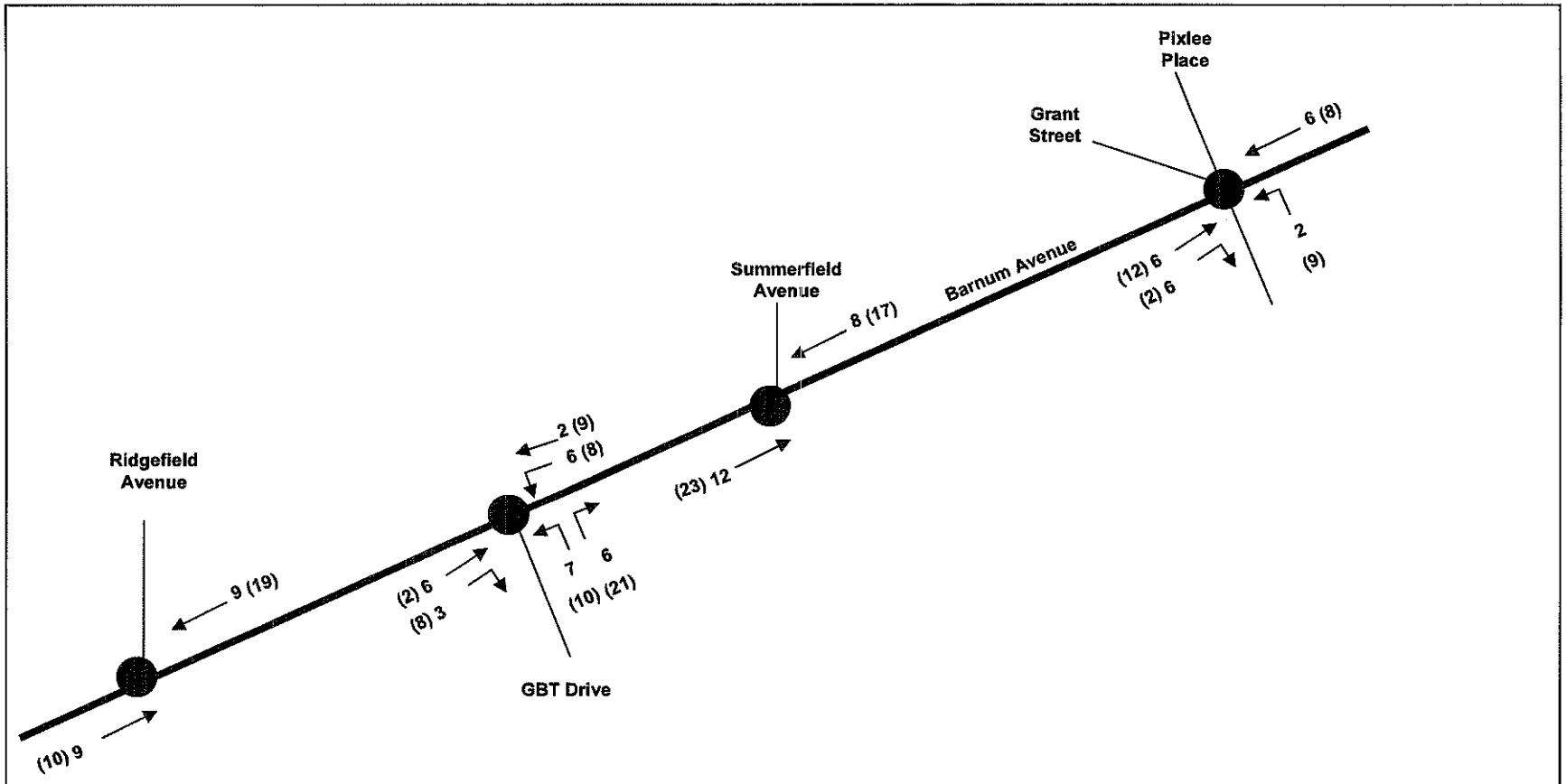
N W E S

XX AM Peak Hour

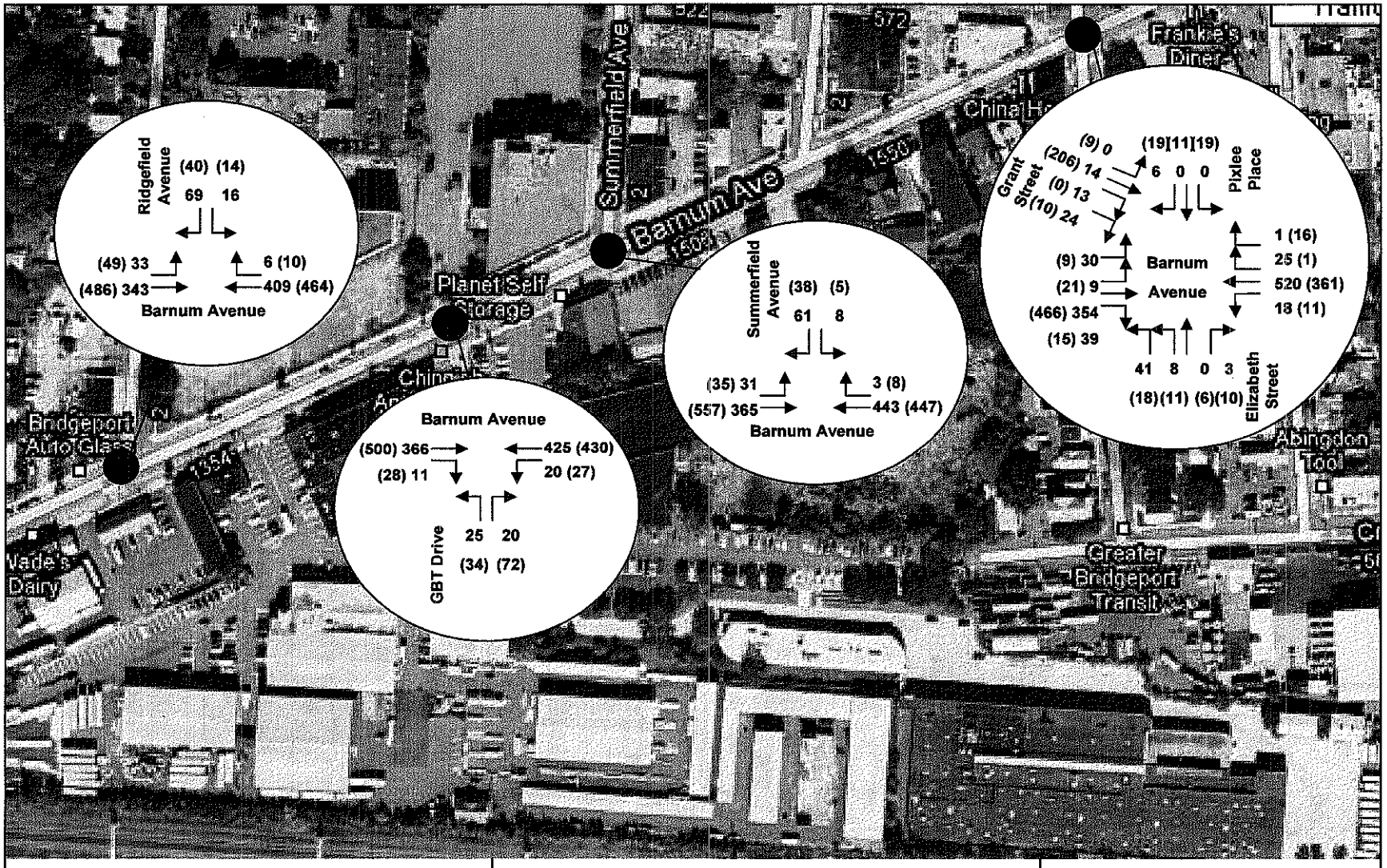
(XX) PM Peak Hour

No-Action Alternative Condition (2024)

Peak Hourly Traffic Volumes



GREATER BRIDGEPORT TRANSIT AUTHORITY **FACILITY EXPANSION AND IMPROVEMENT** **BRIDGEPORT, CONNECTICUT** **State Project No. 0410-T077**	N W E S XX AM Peak Hour (XX) PM Peak Hour	**Site Generated** **Peak Hourly Traffic Volumes**



GREATER BRIDGEPORT TRANSIT AUTHORITY
FACILITY EXPANSION AND IMPROVEMENT
BRIDGEPORT, CONNECTICUT

State Project No. 0410-T077

N
W E
S

XX AM Peak Hour

(XX) PM Peak Hour

Proposed Action Alternative Condition (2024)

Peak Hourly Traffic Volumes

Level-of-Service Analysis Summary
Existing (2010) and Future Conditions (2024)

	Existing Condition 2010		No-Action Condition 2024		Proposed Action Condition 2024	
Intersection	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
Barnum Avenue at Pixlee Place/Grant Street/Elizabeth Street *(signalized)*	B	C	B	C	B	C
Barnum Avenue at Summerfield Avenue *(stop-controlled)*						
Eastbound Left	A	A	A	A	A	A
Southbound Left	B	B	B	B	B	B
Barnum Avenue at GBT Site Drive *(stop-controlled)*						
Westbound Left	A	A	A	A	A	A
Northbound Left	B	B	C	C	C	C
Barnum Avenue at Ridgefield Avenue *(stop-controlled)*						
Eastbound Left	A	A	A	A	A	A
Southbound Left	B	B	B	C	B	C

Source: Fitzgerald & Halliday, Inc., February 2010

APPENDIX D
Air Quality Modeling Results

Appendix ___: MOBILE 6.2 Input and Output Files

MOBILE6.2 2009 Input File - Fairfield County

```
MOBILE6 INPUT FILE :
* For VOC CO and NOx
SPREADSHEET        :
DATABASE OUTPUT    :
POLLUTANTS         : HC CO NOX
DATABASE OPTIONS   : CTdb.opt

RUN DATA
> 2009 input file with 2002 registration data; created 4/8/05 PMB

>********************Fairfield Expressway
**************************************************

* Northeast NLEV inputs
94+ LDG IMP        : NLEVNE.D

* Fuel Data
FUEL PROGRAM       : 2 N
NO REFUELING       :

*2002 registration data is most recent available.
REG DIST           : CTreg02.d

EXPRESS HC AS VOC  :

* I/M Data; reflects assumed Agbar OBD/ASM/Idle tests
I/M DESC FILE      : CTIM05.d
ANTI-TAMP PROG     :
83 71 50 22222 21111111 1 12 096. 12111112

* VMT Data
VMT BY HOUR        : CTHVMT.def
SPEED VMT          : 20sdvmt1.cty
VMT BY FACILITY    : FCVMTF.CTY

* 2009 expressway/ramp VMT fractions
VMT FRACTIONS      :
0.3821      0.0905      0.3013      0.0929      0.0427      0.0288
      0.0028      0.0024      0.0018      0.0064      0.0076      0.0083
      0.0295      0.0015      0.0007      0.0007


SCENARIO RECORD    : Fairfield County 2009 O3 SEASON w/OBD/ASM/idle I/M
W/gascap, ATP, RFG2
CALENDAR YEAR      : 2009
EVALUATION MONTH   : 1
FUEL RVP           : 13.0

* Weather Data for SWCT NA area
MIN/MAX TEMP       : 18. 44.
RELATIVE HUMIDITY  : 73. 73. 73. 53. 53. 53. 40. 40. 40. 39. 39. 39.
                     54. 54. 54. 70. 70. 70. 78. 78. 78. 87. 87. 87.
```

```
END OF RUN

>*****************Fairfield Arterials/Collectors ***************************

* Northeast NLEV inputs
94+ LDG IMP         : NLEVNE.D

* Fuel Data
FUEL PROGRAM        : 2 N
NO REFUELING        :

REG DIST            : CTreg02.d

EXPRESS HC AS VOC   :

* I/M Data; reflects assumed Agbar OBD/ASM/Idle tests
I/M DESC FILE       : CTIM05.d
ANTI-TAMP PROG      :
83 71 50 22222 21111111 1 12 096. 12111112

* VMT Data
VMT BY HOUR         : CTHVMT.def
SPEED VMT           : 20sdvmt1.cty
VMT BY FACILITY     : FCVMTA.CTY

* 2009 arterial/collector VMT fractions
VMT FRACTIONS       :
0.4050      0.0959      0.3195      0.0985      0.0453      0.0107
      0.0010      0.0009      0.0007      0.0024      0.0028      0.0031
      0.0109      0.0005      0.0003      0.0025


SCENARIO RECORD     : Fairfield County 2009 O3 SEASON w/OBD/ASM/idle I/M
W/gascap, ATP, RFG2
CALENDAR YEAR       : 2009
EVALUATION MONTH    : 1
FUEL RVP            : 13.0

* Weather Data for SWCT NA area
MIN/MAX TEMP        : 18. 44.
RELATIVE HUMIDITY   : 73. 73. 73. 53. 53. 53. 40. 40. 40. 39. 39. 39.
                      54. 54. 54. 70. 70. 70. 78. 78. 78. 87. 87. 87.

END OF RUN


>*****************Fairfield  Local
*****************************************

* Northeast NLEV inputs
94+ LDG IMP         : NLEVNE.D

* Fuel Data
FUEL PROGRAM        : 2 N
NO REFUELING        :
```

```
REG DIST            : CTreg02.d

EXPRESS HC AS VOC   :

* I/M Data; reflects assumed Agbar OBD/ASM/Idle tests
I/M DESC FILE       : CTIM05.d
ANTI-TAMP PROG      :
83 71 50 22222 21111111 1 12 096. 12111112

* VMT Data
VMT BY HOUR         : CTHVMT.def
SPEED VMT           : 20sdvmt1.cty
VMT BY FACILITY     : FCVMTL.CTY

* 2009 local VMT fractions
VMT FRACTIONS       :
0.4088      0.0968      0.3225      0.0994      0.0457      0.0070
      0.0007      0.0006      0.0004      0.0016      0.0019      0.0020
      0.0072      0.0004      0.0002      0.0048


SCENARIO RECORD     : Fairfield County 2009 O3 SEASON w/OBD/ASM/idle I/M
W/gascap, ATP, RFG2
CALENDAR YEAR       : 2009
EVALUATION MONTH    : 1
FUEL RVP            : 13.0

* Weather Data for SWCT NA area
MIN/MAX TEMP        : 18. 44.
RELATIVE HUMIDITY   : 73. 73. 73. 53. 53. 53. 40. 40. 40. 39. 39. 39.
                      54. 54. 54. 70. 70. 70. 78. 78. 78. 87. 87. 87.

END OF RUN

>*******************Fairfield Ramp
*****************************************************

* Northeast NLEV inputs
94+ LDG IMP         : NLEVNE.D

* Fuel Data
FUEL PROGRAM        : 2 N
NO REFUELING        :

REG DIST            : CTreg02.d

EXPRESS HC AS VOC   :

* I/M Data; reflects assumed Agbar OBD/ASM/Idle tests
I/M DESC FILE       : CTIM05.d
ANTI-TAMP PROG      :
83 71 50 22222 21111111 1 12 096. 12111112

* VMT Data
VMT BY HOUR         : CTHVMT.def
SPEED VMT           : 20sdvmt1.cty
VMT BY FACILITY     : FCVMTR.CTY
```

```
* 2009 expressway/ramp VMT fractions
VMT FRACTIONS       :
0.3821      0.0905      0.3013      0.0929      0.0427      0.0288
      0.0028      0.0024      0.0018      0.0064      0.0076      0.0083
      0.0295      0.0015      0.0007      0.0007

SCENARIO RECORD     : Fairfield County 2009 O3 SEASON w/OBD/ASM/idle I/M
W/gascap, ATP, RFG2
CALENDAR YEAR       : 2009
EVALUATION MONTH    : 1
FUEL RVP            : 13.0

* Weather Data for SWCT NA area
MIN/MAX TEMP        : 18. 44.
RELATIVE HUMIDITY   : 73. 73. 73. 53. 53. 53. 40. 40. 40. 39. 39. 39.
                      54. 54. 54. 70. 70. 70. 78. 78. 78. 87. 87. 87.

END OF RUN
```

MOBILE6.2 2024 Input File – Fairfield County

```
MOBILE6 INPUT FILE :
* For VOC CO and NOx
SPREADSHEET        :
DATABASE OUTPUT    :
POLLUTANTS         : HC CO NOX
DATABASE OPTIONS   : CTdb.opt

RUN DATA
> 2024 input file with 2002 registration data; created 4/8/05 PMB

>*******************Fairfield Expressway
****************************************************

* Northeast NLEV inputs
94+ LDG IMP        : NLEVNE.D

* Fuel Data
FUEL PROGRAM       : 2 N
NO REFUELING       :

*2002 registration data is most recent available.
REG DIST           : CTreg02.d

EXPRESS HC AS VOC  :

* I/M Data; reflects assumed Agbar OBD/ASM/Idle tests
I/M DESC FILE      : CTIM05.d
ANTI-TAMP PROG     :
83 71 50 22222 21111111 1 12 096. 12111112

* VMT Data
VMT BY HOUR        : CTHVMT.def
SPEED VMT          : 20sdvmt1.cty
VMT BY FACILITY    : FCVMTF.CTY

* 2024 expressway/ramp VMT fractions
VMT FRACTIONS      :
0.2916      0.1062      0.3535      0.1089      0.0501      0.0285
      0.0028      0.0024      0.0018      0.0064      0.0076      0.0082
      0.0292      0.0014      0.0007      0.0007


SCENARIO RECORD    : Fairfield County 2024 O3 SEASON w/OBD/ASM/idle I/M
W/gascap, ATP, RFG2
CALENDAR YEAR      : 2024
EVALUATION MONTH   : 1
FUEL RVP           : 13.0

* Weather Data for SWCT NA area
MIN/MAX TEMP       : 18. 44.
RELATIVE HUMIDITY  : 73. 73. 73. 53. 53. 53. 40. 40. 40. 39. 39. 39.
                     54. 54. 54. 70. 70. 70. 78. 78. 78. 87. 87. 87.

END OF RUN
```

```
>******************Fairfield Arterials/Collectors ***************************

* Northeast NLEV inputs
94+ LDG IMP         : NLEVNE.D

* Fuel Data
FUEL PROGRAM        : 2 N
NO REFUELING        :

REG DIST            : CTreg02.d

EXPRESS HC AS VOC   :

* I/M Data; reflects assumed Agbar OBD/ASM/Idle tests
I/M DESC FILE       : CTIM05.d
ANTI-TAMP PROG      :
83 71 50 22222 21111111 1 12 096. 12111112

* VMT Data
VMT BY HOUR         : CTHVMT.def
SPEED VMT           : 20sdvmt1.cty
VMT BY FACILITY     : FCVMTA.CTY

* 2024 arterial/collector VMT fractions
VMT FRACTIONS       :
0.3090      0.1125      0.3743      0.1154      0.0531      0.0106
      0.0010      0.0009      0.0007      0.0024      0.0028      0.0031
      0.0109      0.0005      0.0003      0.0025


SCENARIO RECORD     : Fairfield County 2024 O3 SEASON w/OBD/ASM/idle I/M
W/gascap, ATP, RFG2
CALENDAR YEAR       : 2024
EVALUATION MONTH    : 1
FUEL RVP            : 13.0

* Weather Data for SWCT NA area
MIN/MAX TEMP        : 18. 44.
RELATIVE HUMIDITY   : 73. 73. 73. 53. 53. 53. 40. 40. 40. 39. 39. 39.
                      54. 54. 54. 70. 70. 70. 78. 78. 78. 87. 87. 87.

END OF RUN


>******************Fairfield  Local
****************************************

* Northeast NLEV inputs
94+ LDG IMP         : NLEVNE.D

* Fuel Data
FUEL PROGRAM        : 2 N
NO REFUELING        :

REG DIST            : CTreg02.d

EXPRESS HC AS VOC   :
```

```
* I/M Data; reflects assumed Agbar OBD/ASM/Idle tests
I/M DESC FILE      : CTIM05.d
ANTI-TAMP PROG     :
83 71 50 22222 21111111 1 12 096. 12111112

* VMT Data
VMT BY HOUR        : CTHVMT.def
SPEED VMT          : 20sdvmt1.cty
VMT BY FACILITY    : FCVMTL.CTY

* 2024 local VMT fractions
VMT FRACTIONS      :
0.3118      0.1135      0.3778      0.1164      0.0536      0.0071
      0.0007      0.0006      0.0004      0.0016      0.0019      0.0020
      0.0072      0.0004      0.0002      0.0048


SCENARIO RECORD    : Fairfield County 2024 O3 SEASON w/OBD/ASM/idle I/M
W/gascap, ATP, RFG2
CALENDAR YEAR      : 2024
EVALUATION MONTH   : 1
FUEL RVP           : 13.0

* Weather Data for SWCT NA area
MIN/MAX TEMP       : 18. 44.
RELATIVE HUMIDITY  : 73. 73. 73. 53. 53. 53. 40. 40. 40. 39. 39. 39.
                     54. 54. 54. 70. 70. 70. 78. 78. 78. 87. 87. 87.

END OF RUN

>*******************Fairfield Ramp
****************************************************

* Northeast NLEV inputs
94+ LDG IMP        : NLEVNE.D

* Fuel Data
FUEL PROGRAM       : 2 N
NO REFUELING       :

REG DIST           : CTreg02.d

EXPRESS HC AS VOC  :

* I/M Data; reflects assumed Agbar OBD/ASM/Idle tests
I/M DESC FILE      : CTIM05.d
ANTI-TAMP PROG     :
83 71 50 22222 21111111 1 12 096. 12111112

* VMT Data
VMT BY HOUR        : CTHVMT.def
SPEED VMT          : 20sdvmt1.cty
VMT BY FACILITY    : FCVMTR.CTY

* 2024 expressway/ramp VMT fractions
VMT FRACTIONS      :
```

```
0.2916      0.1062      0.3535      0.1089      0.0501      0.0285
      0.0028      0.0024      0.0018      0.0064      0.0076      0.0082
      0.0292      0.0014      0.0007      0.0007


SCENARIO RECORD    : Fairfield County 2024 O3 SEASON w/OBD/ASM/idle I/M
W/gascap, ATP, RFG2
CALENDAR YEAR      : 2024
EVALUATION MONTH   : 1
FUEL RVP           : 13.0

* Weather Data for SWCT NA area
MIN/MAX TEMP       : 18. 44.
RELATIVE HUMIDITY  : 73. 73. 73. 53. 53. 53. 40. 40. 40. 39. 39. 39.
                     54. 54. 54. 70. 70. 70. 78. 78. 78. 87. 87. 87.

END OF RUN
```

MOBILE6.2 2009 Output File - Fairfield County

```
*************************************************************************
* MOBILE6.2.03 (24-Sep-2003)                                            *
* Input file: FFJA09.IN (file 1, run 1).                                *
*************************************************************************
* 2009 input file with 2002 registration data; created 4/8/05 PMB
*********************Fairfield Expressway ************************************************

* Reading 94+ LEV IMPLEMENTATION SCHEDULE from the following external
* data file: NLEVNE.D
  M616 Comment:
               User has supplied post-1999 sulfur levels.
  M603 Comment:
               User has disabled the calculation of REFUELING emissions.


* Reading Registration Distributions from the following external
* data file: CTREG02.D

* Reading I/M program description records from the following external
* data file: CTIM05.D
*CT I/M PROGRAMS for all years 2005 and later (modified Jun 05 PMB/AG to reflect DMV info that 8,501-10,000 lb get TSI & GC (no OBD)
*Biennial OBDII I/M "tailpipe" test for post-MY1995 gasoline vehicles up to 8,500 lbs GVWR. Program start year reflects OBD test that
replaced the ASM
*Biennial OBDII evaporative "test" for post-MY1995 gasoline vehicles up to 8,500 lbs GVWR
*Biennial 2500/IDLE I/M tailpipe test for all HDGT 8,501 - 10,000 lbs GVWR (per above comment)
*Biennial GC evaporative "test" for all HDGT 8,501 - 10,000 lbs (per above comment)
*Biennial ASM I/M tailpipe test for pre-96 gasoline vehicles up to 8,500 lbs GVWR

* Reading ASM I/M Test Credits from ASMDATA.D
*Biennial Gas Cap evaporative test for pre-96 gasoline vehicles up to 8,500 lbs GVWR

* Reading Hourly VMT distribution from the following external
* data file: CTHVMT.DEF

* Reading Hourly, Roadway, and Speed VMT dist. from the following external
* data file: 20SDVMT1.CTY

* Reading Hourly Roadway VMT distribution from the following external
* data file: FCVMTF.CTY

  Reading User Supplied ROADWAY VMT Factors
  M615 Comment:
               User supplied VMT mix.

* # # # # # # # # # # # # # # # # # # # # # # # # # # #
* Fairfield County 2009 O3 SEASON w/OBD/ASM/idle I/M W/gascap, ATP, RFG2
* File 1, Run 1, Scenario 1.
* # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M112 Warning:
               Wintertime Reformulated Gasoline Rules Apply
*** I/M credits for Tech1&2 vehicles were read from the following external
    data file: TECH12.D
  M 48 Warning:
               there are no sales for vehicle class HDGV8b

 LEV phase-in data read from file NLEVNE.D
```

```
                Calendar Year:  2009
                        Month:  Jan.
                     Altitude:  Low
           Minimum Temperature:  18.0 (F)
           Maximum Temperature:  44.0 (F)
             Minimum Rel. Hum.:  39.0 (%)
             Maximum Rel. Hum.:  87.0 (%)
           Fuel Sulfur Content:   30. ppm

           Exhaust I/M Program:  Yes
              Evap I/M Program:  Yes
                   ATP Program:  Yes
             Reformulated Gas:   Yes
```

Vehicle Type: / GVWR:	LDGV	LDGT12 <6000	LDGT34 >6000	LDGT (All)	HDGV	LDDV	LDDT	HDDV	MC	All Veh
VMT Distribution:	0.3818	0.3918	0.1336		0.0264	0.0003	0.0020	0.0633	0.0007	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	0.459	0.408	0.645	0.468	0.498	0.156	0.272	0.309	3.66	0.457
Composite CO :	13.97	14.15	16.66	14.78	8.82	0.821	0.519	1.691	16.85	13.455
Composite NOX :	0.645	0.766	1.159	0.866	3.322	0.508	0.773	10.639	2.60	1.467

```
*************************************************************************
* MOBILE6.2.03 (24-Sep-2003)                                            *
* Input file: FFJA09.IN (file 1, run 2).                                *
*************************************************************************
******************Fairfield Arterials/Collectors ***************************

* Reading 94+ LEV IMPLEMENTATION SCHEDULE from the following external
* data file: NLEVNE.D
  M616 Comment:
               User has supplied post-1999 sulfur levels.
  M603 Comment:
               User has disabled the calculation of REFUELING emissions.


* Reading Registration Distributions from the following external
* data file: CTREG02.D

* Reading I/M program description records from the following external
* data file: CTIM05.D
*CT I/M PROGRAMS for all years 2005 and later (modified Jun 05 PMB/AG to reflect DMV info that 8,501-10,000 lb get TSI & GC (no OBD)
*Biennial OBDII I/M "tailpipe" test for post-MY1995 gasoline vehicles up to 8,500 lbs GVWR. Program start year reflects OBD test that
replaced the ASM
*Biennial OBDII evaporative "test" for post-MY1995 gasoline vehicles up to 8,500 lbs GVWR
*Biennial 2500/IDLE I/M tailpipe test for all HDGT 8,501 - 10,000 lbs GVWR (per above comment)
*Biennial GC evaporative "test" for all HDGT 8,501 - 10,000 lbs (per above comment)
*Biennial ASM I/M tailpipe test for pre-96 gasoline vehicles up to 8,500 lbs GVWR

* Reading ASM I/M Test Credits from ASMDATA.D
*Biennial Gas Cap evaporative test for pre-96 gasoline vehicles up to 8,500 lbs GVWR

* Reading Hourly VMT distribution from the following external
* data file: CTHVMT.DEF

* Reading Hourly, Roadway, and Speed VMT dist. from the following external
```

```
* data file: 20SDVMT1.CTY

* Reading Hourly Roadway VMT distribution from the following external
* data file: FCVMTA.CTY

  Reading User Supplied ROADWAY VMT Factors
  M615 Comment:
               User supplied VMT mix.

* # # # # # # # # # # # # # # # # # # # # # # # # #
* Fairfield County 2009 O3 SEASON w/OBD/ASM/idle I/M W/gascap, ATP, RFG2
* File 1, Run 2, Scenario 1.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M112 Warning:
               Wintertime Reformulated Gasoline Rules Apply
*** I/M credits for Tech1&2 vehicles were read from the following external
    data file: TECH12.D
  M 48 Warning:
               there are no sales for vehicle class HDGV8b

 LEV phase-in data read from file NLEVNE.D
                     Calendar Year:  2009
                             Month:  Jan.
                          Altitude:  Low
                Minimum Temperature:  18.0 (F)
                Maximum Temperature:  44.0 (F)
                  Minimum Rel. Hum.:  39.0 (%)
                  Maximum Rel. Hum.:  87.0 (%)
                Fuel Sulfur Content:   30. ppm

                Exhaust I/M Program:  Yes
                   Evap I/M Program:  Yes
                        ATP Program:  Yes
                  Reformulated Gas:  Yes

       Vehicle Type:      LDGV    LDGT12     LDGT34      LDGT       HDGV       LDDV       LDDT       HDDV         MC    All Veh
              GVWR:                <6000      >6000     (All)
                       ------     ------     ------     ------     ------     ------     ------     ------     ------     ------
   VMT Distribution:    0.4046     0.4154     0.1417                0.0098     0.0004     0.0021     0.0235     0.0025     1.0000
  ---------------------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC  :      0.550      0.473      0.760      0.546      0.829      0.204      0.367      0.477       3.95      0.557
     Composite CO   :      12.95      13.03      15.35      13.62      10.32      0.983      0.631      2.302      17.89     13.029
     Composite NOX  :      0.629      0.752      1.155      0.855      2.786      0.373      0.566      7.197       2.04      0.933
  ---------------------------------------------------------------------------------------------------------------------------------
*********************************************************************
* MOBILE6.2.03 (24-Sep-2003)                                        *
* Input file: FFJA09.IN (file 1, run 3).                            *
*********************************************************************
*******************Fairfield  Local ***********************************

* Reading 94+ LEV IMPLEMENTATION SCHEDULE from the following external
* data file: NLEVNE.D
  M616 Comment:
               User has supplied post-1999 sulfur levels.
  M603 Comment:
               User has disabled the calculation of REFUELING emissions.
```

```
* Reading Registration Distributions from the following external
* data file: CTREG02.D

* Reading I/M program description records from the following external
* data file: CTIM05.D
*CT I/M PROGRAMS for all years 2005 and later (modified Jun 05 PMB/AG to reflect DMV info that 8,501-10,000 lb get TSI & GC (no OBD)
*Biennial OBDII I/M "tailpipe" test for post-MY1995 gasoline vehicles up to 8,500 lbs GVWR. Program start year reflects OBD test that
replaced the ASM
*Biennial OBDII evaporative "test" for post-MY1995 gasoline vehicles up to 8,500 lbs GVWR
*Biennial 2500/IDLE I/M tailpipe test for all HDGT 8,501 - 10,000 lbs GVWR (per above comment)
*Biennial GC evaporative "test" for all HDGT 8,501 - 10,000 lbs (per above comment)
*Biennial ASM I/M tailpipe test for pre-96 gasoline vehicles up to 8,500 lbs GVWR

* Reading ASM I/M Test Credits from ASMDATA.D
*Biennial Gas Cap evaporative test for pre-96 gasoline vehicles up to 8,500 lbs GVWR

* Reading Hourly VMT distribution from the following external
* data file: CTHVMT.DEF

* Reading Hourly, Roadway, and Speed VMT dist. from the following external
* data file: 20SDVMT1.CTY

* Reading Hourly Roadway VMT distribution from the following external
* data file: FCVMTL.CTY

  Reading User Supplied ROADWAY VMT Factors
  M615 Comment:
               User supplied VMT mix.

* # # # # # # # # # # # # # # # # # # # # # # # # # # #
* Fairfield County 2009 03 SEASON w/OBD/ASM/idle I/M w/gascap, ATP, RFG2
* File 1, Run 3, Scenario 1.
* # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M112 Warning:
               Wintertime Reformulated Gasoline Rules Apply
*** I/M credits for Tech1&2 vehicles were read from the following external
    data file: TECH12.D
  M 48 Warning:
              there are no sales for vehicle class HDGV8b

 LEV phase-in data read from file NLEVNE.D
                     Calendar Year:  2009
                             Month:  Jan.
                          Altitude:  Low
              Minimum Temperature:  18.0 (F)
              Maximum Temperature:  44.0 (F)
                Minimum Rel. Hum.:  39.0 (%)
                Maximum Rel. Hum.:  87.0 (%)
              Fuel Sulfur Content:   30. ppm

              Exhaust I/M Program:  Yes
                 Evap I/M Program:  Yes
                      ATP Program:  Yes
                  Reformulated Gas:  Yes

       Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
              GVWR:                <6000     >6000     (All)
```

VMT Distribution:	0.4084	0.4193	0.1430		0.0064	0.0004	0.0021	0.0156	0.0048	1.0000

Composite Emission Factors (g/mi):

Composite VOC :	0.661	0.562	0.900	0.648	1.539	0.297	0.553	0.810	4.93	0.682
Composite CO :	11.86	12.03	14.15	12.57	20.06	1.543	1.018	4.414	27.43	12.243
Composite NOX :	0.565	0.696	1.071	0.791	2.393	0.459	0.698	8.274	1.73	0.830

```
*************************************************************************
* MOBILE6.2.03 (24-Sep-2003)                                            *
* Input file: FFJA09.IN (file 1, run 4).                                *
*************************************************************************
********************Fairfield Ramp ***************************************************

* Reading 94+ LEV IMPLEMENTATION SCHEDULE from the following external
* data file: NLEVNE.D
  M616 Comment:
               User has supplied post-1999 sulfur levels.
  M603 Comment:
               User has disabled the calculation of REFUELING emissions.


* Reading Registration Distributions from the following external
* data file: CTREG02.D

* Reading I/M program description records from the following external
* data file: CTIM05.D
*CT I/M PROGRAMS for all years 2005 and later (modified Jun 05 PMB/AG to reflect DMV info that 8,501-10,000 lb get TSI & GC (no OBD)
*Biennial OBDII I/M "tailpipe" test for post-MY1995 gasoline vehicles up to 8,500 lbs GVWR. Program start year reflects OBD test that
replaced the ASM
*Biennial OBDII evaporative "test" for post-MY1995 gasoline vehicles up to 8,500 lbs GVWR
*Biennial 2500/IDLE I/M tailpipe test for all HDGT 8,501 - 10,000 lbs GVWR (per above comment)
*Biennial GC evaporative "test" for all HDGT 8,501 - 10,000 lbs (per above comment)
*Biennial ASM I/M tailpipe test for pre-96 gasoline vehicles up to 8,500 lbs GVWR

* Reading ASM I/M Test Credits from ASMDATA.D
*Biennial Gas Cap evaporative test for pre-96 gasoline vehicles up to 8,500 lbs GVWR

* Reading Hourly VMT distribution from the following external
* data file: CTHVMT.DEF

* Reading Hourly, Roadway, and Speed VMT dist. from the following external
* data file: 20SDVMT1.CTY

* Reading Hourly Roadway VMT distribution from the following external
* data file: FCVMTR.CTY

  Reading User Supplied ROADWAY VMT Factors
  M615 Comment:
               User supplied VMT mix.

* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
* Fairfield County 2009 03 SEASON w/OBD/ASM/idle I/M W/gascap, ATP, RFG2
* File 1, Run 4, Scenario 1.
* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M112 Warning:
               Wintertime Reformulated Gasoline Rules Apply
*** I/M credits for Tech1&2 vehicles were read from the following external
```

```
   data file: TECH12.D
 M 48 Warning:
              there are no sales for vehicle class HDGV8b

LEV phase-in data read from file NLEVNE.D
                    Calendar Year:  2009
                            Month:  Jan.
                         Altitude:  Low
                Minimum Temperature:  18.0 (F)
                Maximum Temperature:  44.0 (F)
                  Minimum Rel. Hum.:  39.0 (%)
                  Maximum Rel. Hum.:  87.0 (%)
                Fuel Sulfur Content:   30. ppm

                Exhaust I/M Program:  Yes
                   Evap I/M Program:  Yes
                        ATP Program:  Yes
                  Reformulated Gas:  Yes
```

Vehicle Type: / GVWR:	LDGV	LDGT12 <6000	LDGT34 >6000	LDGT (All)	HDGV	LDDV	LDDT	HDDV	MC	All Veh
VMT Distribution:	0.3818	0.3918	0.1336		0.0264	0.0003	0.0020	0.0633	0.0007	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	0.550	0.473	0.749	0.543	0.605	0.178	0.315	0.386	3.54	0.539
Composite CO :	17.25	16.70	18.86	17.25	7.42	0.816	0.515	1.671	13.97	15.962
Composite NOX :	0.722	0.822	1.265	0.935	2.876	0.341	0.517	6.215	2.11	1.239

MOBILE6.2 2024 Output File - Fairfield County

```
*****************************************************************************
* MOBILE6.2.03 (24-Sep-2003)                                    *
* Input file: FFJA24.IN (file 1, run 1).                        *
*****************************************************************************
* 2024 input file with 2002 registration data; created 4/8/05 PMB
*********************Fairfield Expressway ***********************************************

* Reading 94+ LEV IMPLEMENTATION SCHEDULE from the following external
* data file: NLEVNE.D
 M616 Comment:
          User has supplied post-1999 sulfur levels.
 M603 Comment:
          User has disabled the calculation of REFUELING emissions.


* Reading Registration Distributions from the following external
* data file: CTREG02.D

* Reading I/M program description records from the following external
* data file: CTIM05.D
*CT I/M PROGRAMS for all years 2005 and later (modified Jun 05 PMB/AG to reflect DMV info that 8,501-10,000 lb get TSI & GC (no OBD)
*Biennial OBDII I/M "tailpipe" test for post-MY1995 gasoline vehicles up to 8,500 lbs GVWR. Program start year reflects OBD test that replaced the ASM
*Biennial OBDII evaporative "test" for post-MY1995 gasoline vehicles up to 8,500 lbs GVWR
*Biennial 2500/IDLE I/M tailpipe test for all HDGT 8,501 - 10,000 lbs GVWR (per above comment)
*Biennial GC evaporative "test" for all HDGT 8,501 - 10,000 lbs (per above comment)
*Biennial ASM I/M tailpipe test for pre-96 gasoline vehicles up to 8,500 lbs GVWR

* Reading ASM I/M Test Credits from ASMDATA.D
*Biennial Gas Cap evaporative test for pre-96 gasoline vehicles up to 8,500 lbs GVWR

* Reading Hourly VMT distribution from the following external
* data file: CTHVMT.DEF

* Reading Hourly, Roadway, and Speed VMT dist. from the following external
* data file: 20SDVMT1.CTY

* Reading Hourly Roadway VMT distribution from the following external
* data file: FCVMTF.CTY

 Reading User Supplied ROADWAY VMT Factors
 M615 Comment:
          User supplied VMT mix.

* ##########################
* Fairfield County 2024 O3 SEASON w/OBD/ASM/idle I/M W/gascap, ATP, RFG2
```

```
* File 1, Run 1, Scenario 1.
* ########################
 M112 Warning:
        Wintertime Reformulated Gasoline Rules Apply
*** I/M credits for Tech1&2 vehicles were read from the following external
   data file: TECH12.D
 M 48 Warning:
        there are no sales for vehicle class HDGV8b
 M 48 Warning:
        there are no sales for vehicle class LDDT12

 LEV phase-in data read from file NLEVNE.D
              Calendar Year:  2024
                   Month:  Jan.
                Altitude:  Low
          Minimum Temperature:  18.0 (F)
          Maximum Temperature:  44.0 (F)
           Minimum Rel. Hum.:  39.0 (%)
           Maximum Rel. Hum.:  87.0 (%)
          Fuel Sulfur Content:  30. ppm

          Exhaust I/M Program:  Yes
            Evap I/M Program:  Yes
               ATP Program:  Yes
            Reformulated Gas:  Yes

    Vehicle Type:     LDGV   LDGT12   LDGT34     LDGT     HDGV     LDDV     LDDT     HDDV      MC   All Veh
          GVWR:             <6000    >6000     (All)
                  ------   ------   ------   ------   ------   ------   ------   ------   ------   ------
 VMT Distribution:  0.2913   0.4597   0.1567           0.0261   0.0003   0.0024   0.0629   0.0007   1.0000
 ---------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
   Composite VOC :    0.168    0.188    0.257    0.206    0.149    0.038    0.084    0.181     2.86    0.193
   Composite CO  :   11.26    10.01    10.71    10.19     7.02    0.508    0.276    0.275    16.85    9.773
   Composite NOX :    0.147    0.223    0.377    0.262    0.469    0.038    0.166    1.368     2.60    0.305
 ---------------------------------------------------------------------------------------------------------
*****************************************************************************
* MOBILE6.2.03 (24-Sep-2003)                                    *
* Input file: FFJA24.IN (file 1, run 2).                        *
*****************************************************************************
*******************Fairfield Arterials/Collectors ***************************

* Reading 94+ LEV IMPLEMENTATION SCHEDULE from the following external
* data file: NLEVNE.D
 M616 Comment:
        User has supplied post-1999 sulfur levels.
 M603 Comment:
        User has disabled the calculation of REFUELING emissions.
```

* Reading Registration Distributions from the following external
* data file: CTREG02.D

* Reading I/M program description records from the following external
* data file: CTIM05.D
*CT I/M PROGRAMS for all years 2005 and later (modified Jun 05 PMB/AG to reflect DMV info that 8,501-10,000 lb get TSI & GC (no OBD)
*Biennial OBDII I/M "tailpipe" test for post-MY1995 gasoline vehicles up to 8,500 lbs GVWR. Program start year reflects OBD test that replaced the ASM
*Biennial OBDII evaporative "test" for post-MY1995 gasoline vehicles up to 8,500 lbs GVWR
*Biennial 2500/IDLE I/M tailpipe test for all HDGT 8,501 - 10,000 lbs GVWR (per above comment)
*Biennial GC evaporative "test" for all HDGT 8,501 - 10,000 lbs (per above comment)
*Biennial ASM I/M tailpipe test for pre-96 gasoline vehicles up to 8,500 lbs GVWR

* Reading ASM I/M Test Credits from ASMDATA.D
*Biennial Gas Cap evaporative test for pre-96 gasoline vehicles up to 8,500 lbs GVWR

* Reading Hourly VMT distribution from the following external
* data file: CTHVMT.DEF

* Reading Hourly, Roadway, and Speed VMT dist. from the following external
* data file: 20SDVMT1.CTY

* Reading Hourly Roadway VMT distribution from the following external
* data file: FCVMTA.CTY

Reading User Supplied ROADWAY VMT Factors
M615 Comment:
User supplied VMT mix.

* ##########################
* Fairfield County 2024 O3 SEASON w/OBD/ASM/idle I/M W/gascap, ATP, RFG2
* File 1, Run 2, Scenario 1.
* ##########################
M112 Warning:
Wintertime Reformulated Gasoline Rules Apply
*** I/M credits for Tech1&2 vehicles were read from the following external
data file: TECH12.D
M 48 Warning:
there are no sales for vehicle class HDGV8b
M 48 Warning:
there are no sales for vehicle class LDDT12

LEV phase-in data read from file NLEVNE.D
Calendar Year: 2024
Month: Jan.
Altitude: Low
Minimum Temperature: 18.0 (F)
Maximum Temperature: 44.0 (F)
Minimum Rel. Hum.: 39.0 (%)

Maximum Rel. Hum.: 87.0 (%)
Fuel Sulfur Content: 30. ppm

Exhaust I/M Program: Yes
Evap I/M Program: Yes
ATP Program: Yes
Reformulated Gas: Yes

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:	<6000	>6000	(All)							
VMT Distribution:	0.3087	0.4868	0.1660		0.0097	0.0003	0.0025	0.0235	0.0025	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	0.200	0.214	0.294	0.234	0.260	0.051	0.113	0.280	3.13	0.232
Composite CO :	10.49	9.17	9.79	9.33	8.22	0.614	0.340	0.374	17.89	9.462
Composite NOX :	0.142	0.217	0.371	0.256	0.394	0.028	0.121	0.962	2.04	0.243

****
* MOBILE6.2.03 (24-Sep-2003) *
* Input file: FFJA24.IN (file 1, run 3). *
****
**********Fairfield Local **********

* Reading 94+ LEV IMPLEMENTATION SCHEDULE from the following external
* data file: NLEVNE.D
M616 Comment:
User has supplied post-1999 sulfur levels.
M603 Comment:
User has disabled the calculation of REFUELING emissions.

* Reading Registration Distributions from the following external
* data file: CTREG02.D

* Reading I/M program description records from the following external
* data file: CTIM05.D
*CT I/M PROGRAMS for all years 2005 and later (modified Jun 05 PMB/AG to reflect DMV info that 8,501-10,000 lb get TSI & GC (no OBD)
*Biennial OBDII I/M "tailpipe" test for post-MY1995 gasoline vehicles up to 8,500 lbs GVWR. Program start year reflects OBD test that replaced the ASM
*Biennial OBDII evaporative "test" for post-MY1995 gasoline vehicles up to 8,500 lbs GVWR
*Biennial 2500/IDLE I/M tailpipe test for all HDGT 8,501 - 10,000 lbs GVWR (per above comment)
*Biennial GC evaporative "test" for all HDGT 8,501 - 10,000 lbs (per above comment)
*Biennial ASM I/M tailpipe test for pre-96 gasoline vehicles up to 8,500 lbs GVWR

* Reading ASM I/M Test Credits from ASMDATA.D
*Biennial Gas Cap evaporative test for pre-96 gasoline vehicles up to 8,500 lbs GVWR

* Reading Hourly VMT distribution from the following external
* data file: CTHVMT.DEF

```
* Reading Hourly, Roadway, and Speed VMT dist. from the following external
* data file: 20SDVMT1.CTY

* Reading Hourly Roadway VMT distribution from the following external
* data file: FCVMTL.CTY

 Reading User Supplied ROADWAY VMT Factors
 M615 Comment:
          User supplied VMT mix.

* ##########################
* Fairfield County 2024 O3 SEASON w/OBD/ASM/idle I/M W/gascap, ATP, RFG2
* File 1, Run 3, Scenario 1.
* ##########################
 M112 Warning:
          Wintertime Reformulated Gasoline Rules Apply
*** I/M credits for Tech1&2 vehicles were read from the following external
   data file: TECH12.D
 M 48 Warning:
          there are no sales for vehicle class HDGV8b
 M 48 Warning:
          there are no sales for vehicle class LDDT12

LEV phase-in data read from file NLEVNE.D
                Calendar Year:  2024
                        Month:  Jan.
                     Altitude:  Low
           Minimum Temperature:  18.0 (F)
           Maximum Temperature:  44.0 (F)
            Minimum Rel. Hum.:  39.0 (%)
            Maximum Rel. Hum.:  87.0 (%)
           Fuel Sulfur Content:  30. ppm

           Exhaust I/M Program:  Yes
             Evap I/M Program:  Yes
                ATP Program:  Yes
             Reformulated Gas:  Yes

    Vehicle Type:     LDGV   LDGT12   LDGT34     LDGT      HDGV     LDDV     LDDT     HDDV      MC   All Veh
         GVWR:          <6000    >6000    (All)
                ------  ------  ------  ------  ------  ------  ------  ------  ------  ------
 VMT Distribution:  0.3115  0.4913  0.1675          0.0065  0.0003  0.0025  0.0156  0.0048  1.0000
 ---------------------------------------------------------------------------------------------------
Composite Emission Factors (g/mi):
   Composite VOC :    0.249   0.262   0.357   0.287   0.485   0.077   0.172   0.474    4.10   0.297
   Composite CO  :   10.21    8.86    9.47    9.01   15.92   0.978   0.559   0.719   27.43   9.363
   Composite NOX :    0.128   0.202   0.332   0.235   0.338   0.034   0.150   1.167    1.73   0.224
 ---------------------------------------------------------------------------------------------------
```

data file: TECH12.D
M 48 Warning:
there are no sales for vehicle class HDGV8b
M 48 Warning:
there are no sales for vehicle class LDDT12

LEV phase-in data read from file NLEVNE.D
Calendar Year: 2024
Month: Jan.
Altitude: Low
Minimum Temperature: 18.0 (F)
Maximum Temperature: 44.0 (F)
Minimum Rel. Hum.: 39.0 (%)
Maximum Rel. Hum.: 87.0 (%)
Fuel Sulfur Content: 30. ppm

Exhaust I/M Program: Yes
Evap I/M Program: Yes
ATP Program: Yes
Reformulated Gas: Yes

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:		<6000	>6000	(All)						
VMT Distribution:	0.2913	0.4597	0.1567		0.0261	0.0003	0.0024	0.0629	0.0007	1.0000

Composite Emission Factors (g/mi):

Composite VOC :	0.188	0.201	0.284	0.222	0.186	0.044	0.097	0.226	2.74	0.213
Composite CO :	12.68	11.21	11.89	11.38	5.90	0.505	0.274	0.272	13.97	10.892
Composite NOX :	0.165	0.233	0.426	0.282	0.406	0.026	0.111	0.866	2.11	0.289

Act) mandates that the participants in each TIA prepare an initial TIA Corridor Plan for submission to the TSB. The City of Bridgeport falls within the Coastal Corridor Transportation Investment Area (CCTIA). The 20-year plan for this area is highlighted below.

Coastal Corridor Transportation Investment Area: *Twenty-Year Strategic Plan for Transportation in the Coastal Corridor Transportation Investment Area* (Coastal Corridor TIA Board, November 6, 2002, and subsequent 2004 update). One of the key observations within this plan is that congestion on highways in the CCTIA is severe, particularly on Interstates 95 and 84. The plan concludes that there is an opportunity to develop alternative modes of transportation in the CCTIA, including bus transit, to help address the many issues raised by this congestion. The plan notes that based on return from the farebox, Connecticut's public bus system is one of the most productive in the country, suggesting that there is potential for increased ridership. The CCTIA plan makes a general recommendation to increase the commitment to transit in the region.

Relevant to the Proposed Action, the CCTIA recommends:

- "Expand Fairfield County inter-regional service by purchasing ten new buses (including articulated buses for the coastal link) and provide funding for additional local bus service, as proposed in Section 16.(a)(11) of the Act."
- "Where the demand exists, provide for more inter-district, inter-town, inter-regional bus routes like the Coastal Link, including routes linking rural communities."
- "Improve bus services for the elderly and the disabled."
- "Fund the Jobs Access Program that provides later evening bus service route extensions and customized paratransit services for residents in the cities of Bridgeport, New Haven and Waterbury, as proposed in Section 16.(a)(1) of the Act."

Connecticut Department of Transportation: In CTDOT's *Connecticut on the Move: Strategic Long-Range Transportation Plan 2009-2035* (June 2009), the Proposed Action is applicable to the following action item:

- "Provide for routine maintenance and upgrading of components of the bus transportation system such as rolling stock, bus maintenance facilities, information systems for passengers, revenue collection systems, etc."

Direct and Indirect Impacts

Land Use

The No Action Alternative would be a continuance of existing conditions, such that no direct or indirect impacts relative to land use or zoning would occur.

Impacts to land use associated with the Proposed Action were evaluated based on the effect that it will have on compatibility of land uses, land use patterns, and access to land. The Proposed Action will occur entirely within the property boundaries of the existing GBT maintenance and administration facility; therefore it would be a continuation of an existing land use, be consistent with surrounding land uses, and will not impact land use patterns or access to land.

The few residences that are located near the Proposed Action site currently co-exist with the existing GBT facility. As designed, the new GBT maintenance and operations facility will be state-of-the art, and will include special features such as vegetative roofing and planters as well as dark-sky compliant lighting fixtures that will lessen or eliminate adverse impacts on the nearby residential areas.

The Proposed Action will not result in any land acquisitions or displacements as the project will occur entirely on property currently owned and occupied by GBT.

Zoning

The Proposed Action will be a continuation of an existing bus maintenance and operations facility, and will therefore be consistent and compatible with the uses permitted within the I-HI (High Industrial) zone. As currently designed, the Proposed Action will be a sustainable facility that will create better working environments for employees of GBT and will reduce negative impacts on the environment and the surrounding community. Through sustainable design features such as using renewable or recycled resources during construction, vegetative roofing on many of the buildings to reduce stormwater runoff, and generating power on-site, the Proposed Action will achieve a LEED rating of Silver and will provide many benefits to GBT employees and the community.

Consistency with Local and Regional Development Plans

The No-Action Alternative would not support the recommended bus and transportation system improvements articulated in the local, regional, and state plans and policies; therefore it is not consistent with these plans.

Conversely, the Proposed Action is consistent with the local, regional, and state plans as it supports the policies and responds to the recommended actions in those plans. The City of Bridgeport is well-positioned for a substantial amount of infill development/redevelopment. The Proposed Action will provide a state-of-the art bus maintenance and operations facility that will allow the GBT bus fleet to grow in such a way that it meets future demand for bus services within the City; increased transit services and access to jobs are two strategies that are supported by local and regional development plans.

Proposed Mitigation

Land Use and Zoning

The Proposed Action will not result in any adverse land use or zoning effects, therefore, no mitigation is proposed as the Proposed Action is a continuance of an existing use. Additionally, the Proposed Action will not require any property acquisitions or displacements, therefore mitigation is not required.

Consistency with Local and Regional Development Plans

The Proposed Action is consistent with all local, regional, and state plans; therefore, no mitigation is proposed or required.

3.2 CONSISTENCY WITH STATE PLAN OF CONSERVATION AND DEVELOPMENT

Existing Setting

The Connecticut Office of Policy and Management (OPM) *Conservation and Development Policies Plan for Connecticut (2004-2009)* (the SPOCD) contains growth management, economic, environmental quality, and public service infrastructure guidelines and goals for the State of Connecticut. The overall strategy of the C&D Plan is to reinforce and conserve existing urban areas, to promote staged, appropriate, sustainable development, and to preserve areas of significant environmental value. The Locational Guide Map which accompanies the C&D Plan provides a geographical interpretation of the State's conservation and development policies.

As depicted on the 2004–2009 *Locational Guide Map*, the Proposed Action site in Bridgeport is located within a Regional Center. The State Action Strategy for Regional Centers is:

- Highest priority for affirmatively supporting rehabilitation and further development toward revitalization of the economic, social, and physical environment of Regional Centers.

The C&D Plan also contains six broad growth management principles and related policies to guide future development. Those pertinent to the Proposed Action include:

- Principle — Redevelop and revitalize Regional Centers and areas with existing or currently planned physical infrastructure.

Policy: Focus urban design to help old and new neighborhoods to function by mixing housing types and land uses, creating meaningful central places, and introducing new forms of open space. These communities should be distinguished by attractive design, and a diversity of people, places, open space, recreational opportunities, transportation options and economic opportunity.

Policy: Support existing communities and neighborhoods by targeting state resources to support infrastructure improvement and development in areas where the infrastructure is already in place.

Policy: Promote an urban economy that will attract and retain businesses, sustain business investment and create individual economic opportunity and jobs.

These policies provide support for the following actions:

- Bridgeport – new multi-modal transportation center, Harbor Yard entertainment complex, and maritime infrastructure improvements.

Consistency

The No-Action Alternative would not support maintenance, operations and other transportation improvements at the GBT's existing facility, nor would it promote the revitalization of this Regional Center with improvements to existing infrastructure. Consequently, the No-Action Alternative is not consistent with the policies and recommendations expressed in the SPOCD.

The Proposed Action is consistent with the vision, goals, and recommendations expressed in the SPOCD as it provides state-of-the-art improvements to existing infrastructure and also creates a transportation node that will enhance intra-community mobility and access to jobs. The Proposed Action would adhere to the SPOCD growth management principle "redevelop and revitalize regional centers and areas with existing or currently planned physical infrastructure."

3.3 TRAFFIC

This section describes existing traffic and parking conditions in the study area and the potential traffic and parking impacts associated with the Proposed Action. The construction of the Proposed Action will provide additional space for vehicle maintenance and indoor vehicle storage, along with additional space for training, operations, and administrative space to accommodate expected agency growth. A new 185-space employee parking deck will also be constructed as part of the expansion project.

Existing Setting

The GBT facility is located in the eastern section of Bridgeport. It is surrounded by Barnum Avenue and Cross Street. Barnum Avenue is characterized as an east-west minor arterial that provides two lanes of travel in each direction with surrounding commercial and residential uses. Adjacent parking is permitted on both sides of the roadway. Cross Street is a local road surrounded by residential and industrial uses. Speeds in the vicinity of the GBT range from 25 to 30 miles per hour.

A site drive is located off Barnum Avenue approximately 900 feet west of the five-leg intersection of Barnum Avenue with Pixlee Place/Grant Street/Elizabeth Street. The Barnum Avenue access to GBT is shared with People's Bank, Planet Self-Storage, and Bridgeport Lumber and is used only by GBT buses. Access to the GBT facility off Cross Street is primarily used for employees and visitors and maybe used as an emergency access for buses. The roadway transportation system in the vicinity of the GBT is shown in Figure 4.

Traffic Flow and Operations

An evaluation of intersections that are likely to be impacted the most by the Proposed Action was conducted. The intersections, as listed below, were selected for this evaluation in coordination with CTDOT. They are identified also in Figure 4.

1. Barnum Avenue & Pixlee Place/Grant Street/Elizabeth Street (signalized)
2. Barnum Avenue & Summerfield Avenue (stop-controlled)
3. Barnum Avenue & GBT Site Drive (stop-controlled)
4. Barnum Avenue & Ridgefield Avenue (stop-controlled)

Existing turning movement count data was collected in January 2010, for the morning (7:00 AM – 9:00 AM) and afternoon (4:00 PM – 6:00 PM) peak travel periods. All traffic counts were collected under typical weekday conditions. In general, the peak hours of Barnum Avenue were observed between 8:00 AM - 9:00 AM and 4:00 PM - 5:00 PM. Signal phasing and timing data was observed in the field and was utilized for the operational evaluation of the signalized intersection.

Automatic traffic recorder (ATR) counts were collected over a 48-hour period bi-directionally at four locations. Locations selected, along with the daily count are provided below:

- Barnum Avenue east of the GBT site drive (10,200 vehicles per day)
- Barnum Avenue west of the GBT site drive (9,100 vehicles per day)
- GBT Site drive off Barnum Avenue (1,000 vehicles per day)
- Cross Street (400 vehicles per day)

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15
0.	5.5	5.1	4.5	4.5	5.2	4.8	4.3	4.3	4.3	4.4	4.3	4.3	4.4	4.6	4.3
10.	5.6	5.1	4.5	4.5	5.2	4.7	4.3	4.3	4.3	4.4	4.3	4.3	4.5	4.7	4.3
20.	5.4	5.0	4.5	4.5	5.1	4.6	4.3	4.3	4.3	4.4	4.3	4.3	4.4	4.9	4.3
30.	5.5	5.1	4.5	4.5	5.2	4.5	4.3	4.3	4.3	4.4	4.3	4.3	4.4	5.1	4.3
40.	5.5	5.1	4.5	4.4	5.2	4.5	4.3	4.3	4.3	4.4	4.3	4.3	4.3	5.2	4.3
50.	5.6	5.2	4.5	4.3	5.3	4.5	4.3	4.3	4.3	4.4	4.3	4.3	4.3	5.3	4.3
60.	5.7	5.4	4.5	4.3	5.4	4.6	4.3	4.3	4.3	4.3	4.3	4.3	4.3	5.4	4.3
70.	5.6	5.3	4.6	4.3	5.4	4.6	4.3	4.4	4.3	4.3	4.3	4.3	4.4	5.4	4.3
80.	5.4	5.1	4.6	4.3	5.1	4.5	4.3	4.6	4.3	4.3	4.5	4.3	4.4	5.4	4.3
90.	4.9	4.8	4.6	4.3	4.7	4.4	4.4	5.1	4.3	4.3	4.9	4.3	4.8	5.4	4.3
100.	4.5	4.5	4.5	4.3	4.5	4.3	4.5	5.5	4.3	4.3	5.5	4.5	5.4	5.4	4.3
110.	4.4	4.3	4.4	4.3	4.3	4.3	4.5	5.7	4.3	4.3	5.9	4.8	5.8	5.5	4.3
120.	4.3	4.3	4.3	4.3	4.3	4.3	4.5	5.7	4.3	4.4	6.0	5.0	5.9	5.4	4.4
130.	4.3	4.3	4.3	4.3	4.3	4.3	4.5	5.6	4.4	4.5	5.9	5.1	5.9	5.2	4.5
140.	4.3	4.3	4.3	4.3	4.3	4.3	4.5	5.5	4.5	4.5	5.8	5.1	5.8	4.9	4.5
150.	4.3	4.3	4.3	4.3	4.3	4.3	4.6	5.5	4.5	4.6	5.7	4.9	5.7	4.7	4.6
160.	4.3	4.3	4.3	4.3	4.3	4.3	4.7	5.4	4.6	4.6	5.6	4.9	5.7	4.6	4.7
170.	4.3	4.3	4.3	4.3	4.3	4.3	4.8	5.4	4.6	4.6	5.6	4.9	5.6	4.6	4.9
180.	4.3	4.3	4.3	4.3	4.3	4.3	4.9	5.4	4.6	4.6	5.6	5.0	5.5	4.6	5.1
190.	4.3	4.3	4.3	4.3	4.3	4.3	5.1	5.4	4.6	4.6	5.6	5.0	5.6	4.6	5.2
200.	4.3	4.3	4.3	4.3	4.3	4.3	5.3	5.3	4.6	4.6	5.6	5.0	5.5	4.6	5.2
210.	4.3	4.3	4.3	4.3	4.3	4.3	5.4	5.4	4.6	4.6	5.6	5.0	5.5	4.6	5.1
220.	4.3	4.3	4.3	4.3	4.3	4.3	5.5	5.4	4.6	4.6	5.6	5.0	5.6	4.6	5.0
230.	4.3	4.3	4.3	4.3	4.3	4.3	5.6	5.5	4.6	4.6	5.7	5.1	5.6	4.6	4.9
240.	4.3	4.3	4.3	4.3	4.3	4.3	5.8	5.7	4.6	4.6	5.8	5.2	5.7	4.6	4.8
250.	4.4	4.4	4.3	4.4	4.4	4.4	5.9	5.9	4.7	4.7	6.0	5.2	5.9	4.6	4.6
260.	4.6	4.6	4.3	4.5	4.6	4.6	6.0	5.9	4.6	4.5	6.2	5.3	6.0	4.5	4.6
270.	5.1	5.1	4.3	4.7	5.2	5.2	5.5	5.6	4.5	4.4	5.8	5.1	6.0	4.4	4.5
280.	5.5	5.5	4.4	4.8	5.5	5.5	4.9	4.9	4.3	4.4	5.0	4.8	5.5	4.3	4.4
290.	5.7	5.5	4.5	4.9	5.5	5.6	4.5	4.6	4.3	4.3	4.5	4.6	4.8	4.3	4.4
300.	5.6	5.4	4.6	4.9	5.3	5.5	4.3	4.5	4.3	4.3	4.4	4.5	4.5	4.3	4.4
310.	5.4	5.4	4.6	4.8	5.3	5.3	4.3	4.5	4.4	4.3	4.4	4.5	4.3	4.3	4.4
320.	5.3	5.3	4.5	4.6	5.4	5.2	4.3	4.3	4.4	4.3	4.4	4.5	4.3	4.3	4.4
330.	5.3	5.3	4.5	4.5	5.2	5.2	4.3	4.3	4.4	4.3	4.4	4.4	4.3	4.4	4.3
340.	5.2	5.0	4.5	4.5	5.1	5.1	4.3	4.3	4.4	4.3	4.5	4.3	4.3	4.4	4.3
350.	5.4	5.1	4.5	4.5	5.2	4.9	4.3	4.3	4.4	4.3	4.4	4.3	4.3	4.4	4.3
360.	5.5	5.1	4.5	4.5	5.2	4.8	4.3	4.3	4.4	4.3	4.4	4.3	4.4	4.5	4.3
MAX	5.7	5.5	4.6	4.9	5.5	5.6	6.0	5.9	4.7	4.7	6.2	5.3	6.0	5.5	5.2
DEGR.	60	280	70	290	280	290	260	250	250	250	260	250	250	100	180

THE HIGHEST CONCENTRATION OF 6.20 PPM OCCURRED AT RECEPTOR REC11.

DATE : 2/28/10
TIME : 13:57:49

RECEPTOR - LINK MATRIX FOR THE ANGLE PRODUCING
THE MAXIMUM CONCENTRATION FOR EACH RECEPTOR

CO/LINK (PPM)
ANGLE (DEGREES)

LINK #	REC1 60	REC2 280	REC3 70	REC4 290	REC5 280	REC6 290	REC7 260	REC8 250	REC9 250	REC10 250	REC11 260	REC12 250	REC13 250	REC14 100	REC15 180
1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0
2	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3	.0	.0	.0	.0	.0	.2	.1	.0	.0	.0	.0	.0	.0	.0	.0
4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5	1.0	1.1	.0	.2	1.1	1.1	1.6	1.5	.3	.3	1.8	.8	1.5	.1	.2
6	.1	.1	.0	.0	.1	.0	.0	.1	.0	.0	.1	.1	.1	.0	.0
7	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8	.0	.0	.3	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15	.0	.0	.0	.0	.0	.0	.0	.0	.1	.1	.0	.0	.0	1.1	.6
									.0	.0	.0	.1	.0	.0	.1

CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 95221

JOB: BarnumPixlee2024NoBuildAM

RUN: BarnumPixlee2024NoBuildAM

DATE : 2/28/10
TIME : 14: 5:33

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 175. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = 4.3 PPM

LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (FT) X1	Y1	X2	Y2	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. Barnum Ave EB in	.0	430.0	200.0	430.0	200.	90.	AG	419.	9.5	.0	12.0		
2. Barnum Ave EB LTR	200.0	430.0	243.5	430.0	44.	90.	AG	100.	100.0	.0	12.0	.40	2.2
3. Barnum Ave EB out	440.0	430.0	848.0	430.0	408.	90.	AG	419.	9.5	.0	12.0		
4. Barnum Ave WB in	848.0	444.0	648.0	444.0	200.	270.	AG	558.	9.5	.0	12.0		
5. Barnum Ave WB LTR	648.0	444.0	-3051.0	444.0	3699.	270.	AG	304.	100.0	.0	14.0		
6. Barnum Ave WB out	394.0	442.0	.0	442.0	394.	270.	AG	558.	9.5	.0	14.0	2.62	187.9
7. Elizabeth St NB in	430.0	.0	430.0	200.0	200.	360.	AG	49.	9.5	.0	12.0		
8. Elizabeth St NB LTR	430.0	200.0	430.0	215.5	16.	360.	AG	304.	100.0	.0	14.0		
9. Pixlee Pl NB out	436.0	468.0	436.0	836.0	368.	360.	AG	49.	9.5	.0	12.0	.20	.8
10. Pixlee Pl SB in	424.0	836.0	424.0	700.0	136.	180.	AG	6.	9.5	.0	12.0		
11. Pixlee Pl SB LTR	424.0	700.0	424.0	698.1	2.	180.	AG	304.	100.0	.0	12.0		
12. Elizabeth St SB out	416.0	420.0	416.0	.0	420.	180.	AG	6.	9.5	.0	12.0	.03	.1
13. Grant St SEB in	.0	836.0	200.0	634.0	284.	135.	AG	50.	9.5	.0	12.0		
14. Grant St SEB LTR	200.0	634.0	211.8	623.4	16.	132.	AG	304.	100.0	.0	12.0		
15. Grant St NEB out	12.0	848.0	412.0	466.0	553.	134.	AG	50.	9.5	.0	12.0	.22	.8

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
2. Barnum Ave EB LTR	75	19	5.0	419	1587	146.70	2	4
5. Barnum Ave WB LTR	75	58	5.0	558	1600	146.70	2	4
8. Elizabeth St NB LTR	75	58	5.0	49	1804	146.70	2	3
11. Pixlee Pl SB LTR	75	58	5.0	6	1644	146.70	2	3
14. Grant St SEB LTR	75	58	5.0	50	1690	146.70	2	3

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. EB W Midblock	196.0	410.0	6.0
2. SW Corner	400.0	410.0	6.0
3. SB S Midblock	400.0	200.0	6.0
4. NB S Midblock	454.0	200.0	6.0
5. SE Corner	454.0	410.0	6.0
6. EB E Midblock	648.0	410.0	6.0
7. WB E Midblock	648.0	464.0	6.0
8. NE Corner	454.0	464.0	6.0
9. NB N Midblock	454.0	640.0	6.0
10. SB N Midblock	400.0	640.0	6.0
11. NW Corner (btwn Barn	370.0	460.0	6.0
12. NW Corner (btwn Gran	400.0	500.0	6.0
13. WB W Midblock	196.0	464.0	6.0
14. SEB W Midblock	194.0	616.0	6.0
15. NWB W Midblock	224.0	670.0	6.0

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	* CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15
0.	5.2	4.9	4.5	4.5	5.0	4.7	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.5	4.3
10.	5.1	4.9	4.5	4.5	5.0	4.7	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.6	4.3
20.	5.1	4.8	4.5	4.5	4.9	4.6	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.7	4.3
30.	5.2	4.9	4.5	4.4	5.0	4.5	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.8	4.3
40.	5.2	4.9	4.5	4.4	5.0	4.5	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.9	4.3
50.	5.3	5.0	4.6	4.3	5.1	4.5	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.9	4.3
60.	5.3	5.1	4.6	4.3	5.1	4.5	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.8	4.3
70.	5.2	5.1	4.6	4.3	5.0	4.5	4.3	4.4	4.3	4.3	4.3	4.3	4.3	4.7	4.3
80.	5.2	4.9	4.6	4.3	4.9	4.5	4.3	4.5	4.3	4.3	4.4	4.3	4.4	4.7	4.3
90.	4.7	4.7	4.6	4.3	4.6	4.4	4.4	4.9	4.3	4.3	4.7	4.3	4.7	4.5	4.3
100.	4.5	4.4	4.5	4.3	4.4	4.3	4.5	5.2	4.3	4.3	5.2	4.4	5.2	4.4	4.3
110.	4.3	4.3	4.4	4.3	4.3	4.3	4.6	5.4	4.3	4.3	5.5	4.6	5.4	4.4	4.3
120.	4.3	4.3	4.3	4.3	4.3	4.3	4.6	5.4	4.3	4.4	5.6	4.8	5.5	4.4	4.4
130.	4.3	4.3	4.3	4.3	4.3	4.3	4.6	5.3	4.4	4.4	5.5	4.9	5.5	4.5	4.4
140.	4.3	4.3	4.3	4.3	4.3	4.3	4.5	5.2	4.4	4.5	5.4	4.8	5.4	4.5	4.5
150.	4.3	4.3	4.3	4.3	4.3	4.3	4.5	5.2	4.5	4.5	5.3	4.7	5.4	4.5	4.5
160.	4.3	4.3	4.3	4.3	4.3	4.3	4.6	5.2	4.5	4.5	5.3	4.7	5.4	4.5	4.5
170.	4.3	4.3	4.3	4.3	4.3	4.3	4.7	5.2	4.5	4.5	5.3	4.7	5.3	4.5	4.5
180.	4.3	4.3	4.3	4.3	4.3	4.3	4.9	5.1	4.5	4.5	5.2	4.7	5.3	4.5	4.5
190.	4.3	4.3	4.3	4.3	4.3	4.3	4.9	5.2	4.5	4.5	5.3	4.7	5.2	4.5	4.6
200.	4.3	4.3	4.3	4.3	4.3	4.3	5.1	5.1	4.5	4.5	5.3	4.8	5.3	4.5	4.6
210.	4.3	4.3	4.3	4.3	4.3	4.3	5.1	5.1	4.5	4.5	5.3	4.8	5.3	4.5	4.7
220.	4.3	4.3	4.3	4.3	4.3	4.3	5.2	5.1	4.5	4.5	5.3	4.8	5.3	4.5	4.7
230.	4.3	4.3	4.3	4.3	4.3	4.3	5.3	5.2	4.5	4.5	5.5	4.9	5.4	4.5	4.6
240.	4.3	4.3	4.3	4.3	4.3	4.3	5.4	5.3	4.5	4.5	5.6	4.9	5.5	4.6	4.5
250.	4.4	4.4	4.3	4.4	4.4	4.4	5.5	5.5	4.6	4.6	5.8	5.0	5.6	4.6	4.5
260.	4.6	4.6	4.3	4.5	4.6	4.6	5.6	5.6	4.6	4.6	5.9	5.0	5.7	4.6	4.5
270.	5.1	5.1	4.4	4.7	5.1	5.1	5.3	5.4	4.5	4.5	5.6	4.8	5.4	4.5	4.4
280.	5.4	5.3	4.5	4.9	5.3	5.3	4.8	4.8	4.3	4.3	5.0	4.5	4.8	4.3	4.3
290.	5.3	5.2	4.5	4.9	5.2	5.2	4.4	4.4	4.3	4.3	4.5	4.3	4.4	4.3	4.3
300.	5.2	5.1	4.5	4.9	5.1	5.1	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
310.	5.2	5.1	4.5	4.8	5.0	5.1	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
320.	5.1	5.0	4.5	4.6	4.9	5.0	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
330.	5.1	5.0	4.5	4.6	5.0	5.0	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
340.	5.0	4.9	4.5	4.5	4.9	4.9	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
350.	5.1	4.9	4.5	4.5	5.0	4.8	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
360.	5.2	4.9	4.5	4.5	5.0	4.7	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.4	4.3
MAX	5.4	5.3	4.6	4.9	5.3	5.3	5.6	5.6	4.6	4.6	5.9	5.0	5.7	4.9	4.7
DEGR.	280	280	50	280	280	280	260	260	250	250	260	250	260	40	200

THE HIGHEST CONCENTRATION OF 5.90 PPM OCCURRED AT RECEPTOR REC11.

RECEPTOR - LINK MATRIX FOR THE ANGLE PRODUCING
THE MAXIMUM CONCENTRATION FOR EACH RECEPTOR

CO/LINK (PPM)
ANGLE (DEGREES)

LINK #	REC1 280	REC2 280	REC3 50	REC4 280	REC5 280	REC6 280	REC7 260	REC8 260	REC9 250	REC10 250	REC11 260	REC12 250	REC13 260	REC14 40	REC15 200
1	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0
2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3	.0	.0	.0	.0	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0
4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5	.9	.9	.1	.2	.9	.9	1.2	1.2	.3	.3	1.4	.6	1.2	.0	.2
6	.1	.1	.0	.0	.1	.0	.0	.1	.0	.0	.2	.1	.1	.0	.0
7	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8	.0	.0	.2	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.6	.2
														.0	.0

CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 95221

JOB: BarnumPixlee2024NoBuildPM

RUN: BarnumPixlee2024NoBuildPM

DATE : 2/28/10
TIME : 14: 8:58

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 175. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = 4.3 PPM

LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (FT) X1	Y1	X2	Y2	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. Barnum Ave EB in	.0	430.0	200.0	430.0	200.	90.	AG	488.	9.5	.0	12.0		
2. Barnum Ave EB LTR	200.0	430.0	250.7	430.0	51.	90.	AG	100.	100.0	.0	12.0	.45	2.6
3. Barnum Ave EB out	440.0	430.0	848.0	430.0	408.	90.	AG	488.	9.5	.0	12.0		
4. Barnum Ave WB in	848.0	444.0	648.0	444.0	200.	270.	AG	381.	9.5	.0	14.0		
5. Barnum Ave WB LTR	648.0	444.0	-1172.4	444.0	1820.	270.	AG	304.	100.0	.0	14.0	1.76	92.5
6. Barnum Ave WB out	394.0	442.0	.0	442.0	394.	270.	AG	381.	9.5	.0	12.0		
7. Elizabeth St NB in	430.0	.0	430.0	200.0	200.	360.	AG	36.	9.5	.0	14.0		
8. Elizabeth St NB LTR	430.0	200.0	430.0	211.4	11.	360.	AG	304.	100.0	.0	14.0	.15	.6
9. Pixlee Pl NB out	436.0	468.0	436.0	836.0	368.	360.	AG	36.	9.5	.0	12.0		
10. Pixlee Pl SB in	424.0	836.0	424.0	700.0	136.	180.	AG	49.	9.5	.0	12.0		
11. Pixlee Pl SB LTR	424.0	700.0	424.0	684.5	16.	180.	AG	304.	100.0	.0	12.0	.24	.8
12. Elizabeth St SB out	416.0	420.0	416.0	.0	420.	180.	AG	49.	9.5	.0	12.0		
13. Grant St SEB in	.0	836.0	200.0	634.0	284.	135.	AG	225.	9.5	.0	12.0		
14. Grant St SEB LTR	200.0	634.0	278.4	563.5	105.	132.	AG	304.	100.0	.0	12.0	.94	5.4
15. Grant St NEB out	12.0	848.0	412.0	466.0	553.	134.	AG	225.	9.5	.0	12.0		

DATE : 2/28/10
TIME : 14: 8:58

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
2. Barnum Ave EB LTR	75	19	5.0	488	1665	146.70	2	4
5. Barnum Ave WB LTR	75	58	5.0	381	1633	146.70	2	4
8. Elizabeth St NB LTR	75	58	5.0	36	1780	146.70	2	3
11. Pixlee Pl SB LTR	75	58	5.0	49	1538	146.70	2	3
14. Grant St SEB LTR	75	58	5.0	225	1802	146.70	2	3

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. EB W Midblock	196.0	410.0	6.0
2. SW Corner	400.0	410.0	6.0
3. SB S Midblock	400.0	200.0	6.0
4. NB S Midblock	454.0	200.0	6.0
5. SE Corner	454.0	410.0	6.0
6. EB E Midblock	648.0	410.0	6.0
7. WB E Midblock	648.0	464.0	6.0
8. NE Corner	454.0	464.0	6.0
9. NB N Midblock	454.0	640.0	6.0
10. SB N Midblock	400.0	640.0	6.0
11. NW Corner (btwn Barn	370.0	460.0	6.0
12. NW Corner (btwn Gran	400.0	500.0	6.0
13. WB W Midblock	196.0	464.0	6.0
14. SEB W Midblock	194.0	616.0	6.0
15. NWB W Midblock	224.0	670.0	6.0

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15
0.	5.3	4.9	4.5	4.5	5.0	4.7	4.3	4.3	4.3	4.3	4.3	4.3	4.4	4.5	4.3
10.	5.3	4.9	4.5	4.5	5.0	4.6	4.3	4.3	4.3	4.4	4.3	4.3	4.5	4.6	4.3
20.	5.2	4.8	4.5	4.5	4.9	4.6	4.3	4.3	4.3	4.4	4.3	4.3	4.5	4.7	4.3
30.	5.3	4.9	4.5	4.4	5.0	4.5	4.3	4.3	4.3	4.4	4.3	4.3	4.5	4.9	4.3
40.	5.2	4.9	4.4	4.4	5.0	4.5	4.3	4.3	4.3	4.4	4.3	4.3	4.4	5.0	4.3
50.	5.3	5.0	4.5	4.3	5.1	4.5	4.3	4.3	4.3	4.4	4.3	4.3	4.4	5.0	4.3
60.	5.3	5.1	4.5	4.3	5.1	4.5	4.3	4.3	4.3	4.3	4.3	4.3	4.4	5.0	4.3
70.	5.3	5.1	4.5	4.3	5.1	4.5	4.3	4.3	4.3	4.3	4.3	4.3	4.3	5.1	4.3
80.	5.2	4.9	4.6	4.3	4.9	4.5	4.3	4.4	4.3	4.3	4.4	4.3	4.4	5.1	4.3
90.	4.7	4.7	4.5	4.3	4.6	4.4	4.4	4.5	4.3	4.3	4.7	4.3	4.7	5.1	4.3
100.	4.5	4.4	4.5	4.3	4.4	4.3	4.5	4.9	4.3	4.3	5.2	4.4	5.2	5.2	4.3
110.	4.3	4.3	4.4	4.3	4.3	4.3	4.5	5.2	4.3	4.3	5.5	4.6	5.4	5.3	4.3
120.	4.3	4.3	4.3	4.3	4.3	4.3	4.5	5.4	4.3	4.3	5.6	4.8	5.6	5.3	4.4
130.	4.3	4.3	4.3	4.3	4.3	4.3	4.5	5.4	4.3	4.4	5.4	4.9	5.5	5.2	4.4
140.	4.3	4.3	4.3	4.3	4.3	4.3	4.5	5.3	4.4	4.4	5.4	4.9	5.4	4.9	4.5
150.	4.3	4.3	4.3	4.3	4.3	4.3	4.5	5.2	4.4	4.5	5.3	4.7	5.4	4.7	4.7
160.	4.3	4.3	4.3	4.3	4.3	4.3	4.5	5.2	4.5	4.5	5.3	4.7	5.4	4.6	4.9
170.	4.3	4.3	4.3	4.3	4.3	4.3	4.6	5.2	4.5	4.5	5.3	4.7	5.3	4.5	5.0
180.	4.3	4.3	4.3	4.3	4.3	4.3	4.7	5.2	4.5	4.5	5.3	4.7	5.3	4.5	5.1
190.	4.3	4.3	4.3	4.3	4.3	4.3	4.8	5.1	4.5	4.5	5.2	4.8	5.3	4.5	5.1
200.	4.3	4.3	4.3	4.3	4.3	4.3	4.9	5.2	4.5	4.5	5.3	4.8	5.3	4.5	5.0
210.	4.3	4.3	4.3	4.3	4.3	4.3	5.1	5.1	4.5	4.5	5.3	4.8	5.3	4.5	5.0
220.	4.3	4.3	4.3	4.3	4.3	4.3	5.1	5.1	4.5	4.5	5.3	4.8	5.3	4.5	4.9
230.	4.3	4.3	4.3	4.3	4.3	4.3	5.2	5.1	4.5	4.5	5.3	4.8	5.3	4.5	4.8
240.	4.3	4.3	4.3	4.3	4.3	4.3	5.3	5.2	4.5	4.6	5.4	5.0	5.4	4.5	4.7
250.	4.4	4.4	4.3	4.4	4.4	4.4	5.4	5.3	4.6	4.6	5.5	5.0	5.5	4.6	4.6
260.	4.6	4.6	4.3	4.5	4.6	4.6	5.5	5.5	4.7	4.8	5.7	5.1	5.6	4.6	4.6
270.	5.0	4.9	4.4	4.7	4.9	5.1	5.6	5.6	4.6	4.7	5.8	5.0	5.7	4.5	4.6
280.	5.3	5.2	4.5	4.8	5.2	5.2	5.3	5.4	4.5	4.5	5.5	4.8	5.3	4.4	4.5
290.	5.3	5.2	4.5	4.8	5.2	5.2	4.8	4.8	4.3	4.4	4.9	4.7	4.8	4.3	4.4
300.	5.2	5.1	4.5	4.8	5.1	5.1	4.5	4.5	4.3	4.3	4.5	4.5	4.4	4.3	4.4
310.	5.2	5.2	4.5	4.7	5.1	5.1	4.3	4.4	4.4	4.3	4.5	4.5	4.3	4.3	4.4
320.	5.1	5.1	4.5	4.6	5.0	5.0	4.3	4.3	4.4	4.3	4.5	4.4	4.3	4.4	4.3
330.	5.1	5.1	4.5	4.5	5.0	5.0	4.3	4.3	4.4	4.3	4.5	4.3	4.3	4.4	4.3
340.	5.0	4.8	4.6	4.5	4.9	4.9	4.3	4.3	4.4	4.3	4.3	4.3	4.3	4.4	4.3
350.	5.1	4.9	4.5	4.5	5.0	4.8	4.3	4.3	4.4	4.3	4.3	4.3	4.4	4.5	4.3
360.	5.3	4.9	4.5	4.5	5.0	4.7	4.3	4.3	4.3	4.3	4.3	4.3	4.4	4.5	4.3
MAX	5.3	5.2	4.6	4.8	5.2	5.2	5.6	5.6	4.7	4.8	5.8	5.1	5.7	5.3	5.1
DEGR.	0	280	80	280	280	280	260	260	250	250	260	250	260	100	170

THE HIGHEST CONCENTRATION OF 5.80 PPM OCCURRED AT RECEPTOR REC11.

DATE : 2/28/10
TIME : 14: 8:58

RECEPTOR - LINK MATRIX FOR THE ANGLE PRODUCING
THE MAXIMUM CONCENTRATION FOR EACH RECEPTOR

	*	CO/LINK (PPM) ANGLE (DEGREES)														
LINK #	*	REC1 0	REC2 280	REC3 80	REC4 280	REC5 280	REC6 280	REC7 260	REC8 260	REC9 250	REC10 250	REC11 260	REC12 250	REC13 260	REC14 100	REC15 170
1	*	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0
2	*	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3	*	.0	.0	.0	.0	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0
4	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5	*	.6	.8	.0	.2	.8	.8	1.2	1.2	.3	.3	1.4	.6	1.2	.1	.2
6	*	.1	.1	.0	.0	.1	.0	.0	.1	.0	.0	.1	.1	.1	.0	.0
7	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8	*	.0	.0	.3	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14	*	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15	*	.0	.0	.0	.0	.0	.0	.0	.0	.1	.2	.0	.0	.0	.9	.5
										.0	.0	.0	.1	.0	.0	.1

JOB: BarnumPixlee2024BuildAM RUN: BarnumPixlee2024BuildAM

DATE : 2/28/10
TIME : 14:16:52

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 175. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = 4.3 PPM

LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (FT) X1	Y1	X2	Y2	*	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. Barnum Ave EB in	*	.0	430.0	200.0	430.0	*	200.	90.	AG	432.	9.5	.0	12.0		
2. Barnum Ave EB LTR	*	200.0	430.0	244.9	430.0	*	45.	90.	AG	100.	100.0	.0	12.0	.42	2.3
3. Barnum Ave EB out	*	440.0	430.0	848.0	430.0	*	408.	90.	AG	432.	9.5	.0	12.0		
4. Barnum Ave WB in	*	848.0	444.0	648.0	444.0	*	200.	270.	AG	564.	9.5	.0	14.0		
5. Barnum Ave WB LTR	*	648.0	444.0	-3113.4	444.0	*	3761.	270.	AG	304.	100.0	.0	14.0	2.65	191.1
6. Barnum Ave WB out	*	394.0	442.0	.0	442.0	*	394.	270.	AG	564.	9.5	.0	12.0		
7. Elizabeth St NB in	*	430.0	.0	430.0	200.0	*	200.	360.	AG	52.	9.5	.0	14.0		
8. Elizabeth St NB LTR	*	430.0	200.0	430.0	216.5	*	16.	360.	AG	304.	100.0	.0	14.0	.22	.8
9. Pixlee Pl NB out	*	436.0	468.0	436.0	836.0	*	368.	360.	AG	52.	9.5	.0	12.0		
10. Pixlee Pl SB in	*	424.0	836.0	424.0	700.0	*	136.	180.	AG	6.	9.5	.0	12.0		
11. Pixlee Pl SB LTR	*	424.0	700.0	424.0	698.1	*	2.	180.	AG	304.	100.0	.0	12.0	.03	.1
12. Elizabeth St SB out	*	416.0	420.0	416.0	.0	*	420.	180.	AG	6.	9.5	.0	12.0		
13. Grant St SEB in	*	.0	836.0	200.0	634.0	*	284.	135.	AG	51.	9.5	.0	12.0		
14. Grant St SEB LTR	*	200.0	634.0	212.0	623.2	*	16.	132.	AG	304.	100.0	.0	12.0	.23	.8
15. Grant St NEB out	*	12.0	848.0	412.0	466.0	*	553.	134.	AG	51.	9.5	.0	12.0		

JOB: BarnumPixlee2024BuildAM RUN: BarnumPixlee2024BuildAM

DATE : 2/28/10
TIME : 14:16:52

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
2. Barnum Ave EB LTR	75	19	5.0	432	1586	146.70	2	4
5. Barnum Ave WB LTR	75	58	5.0	564	1600	146.70	2	4
8. Elizabeth St NB LTR	75	58	5.0	52	1800	146.70	2	3
11. Pixlee Pl SB LTR	75	58	5.0	6	1644	146.70	2	3
14. Grant St SEB LTR	75	58	5.0	51	1692	146.70	2	3

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. EB W Midblock	196.0	410.0	6.0
2. SW Corner	400.0	410.0	6.0
3. SB S Midblock	400.0	200.0	6.0
4. NB S Midblock	454.0	200.0	6.0
5. SE Corner	454.0	410.0	6.0
6. EB E Midblock	648.0	410.0	6.0
7. WB E Midblock	648.0	464.0	6.0
8. NE Corner	454.0	464.0	6.0
9. NB N Midblock	454.0	640.0	6.0
10. SB N Midblock	400.0	640.0	6.0
11. NW Corner (btwn Barn	370.0	460.0	6.0
12. NW Corner (btwn Gran	400.0	500.0	6.0
13. WB W Midblock	196.0	464.0	6.0
14. SEB W Midblock	194.0	616.0	6.0
15. NWB W Midblock	224.0	670.0	6.0

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	* CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15
0.	5.2	4.9	4.5	4.5	5.0	4.7	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.5	4.3
10.	5.1	4.9	4.5	4.5	5.0	4.7	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.6	4.3
20.	5.1	4.8	4.5	4.5	4.9	4.6	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.7	4.3
30.	5.2	4.9	4.5	4.4	5.0	4.5	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.8	4.3
40.	5.2	4.9	4.5	4.4	5.0	4.5	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.9	4.3
50.	5.3	5.0	4.6	4.3	5.1	4.5	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.9	4.3
60.	5.3	5.1	4.6	4.3	5.1	4.5	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.8	4.3
70.	5.3	5.1	4.6	4.3	5.0	4.5	4.3	4.4	4.3	4.3	4.4	4.3	4.4	4.7	4.3
80.	5.2	4.9	4.6	4.3	4.9	4.5	4.3	4.5	4.3	4.3	4.7	4.3	4.7	4.5	4.3
90.	4.7	4.7	4.6	4.3	4.6	4.4	4.4	4.9	4.3	4.3	5.2	4.4	5.2	4.4	4.3
100.	4.5	4.4	4.5	4.3	4.4	4.3	4.5	5.2	4.3	4.3	5.5	4.6	5.4	4.5	4.3
110.	4.3	4.3	4.4	4.3	4.3	4.3	4.6	5.4	4.3	4.3	5.6	4.8	5.6	4.4	4.4
120.	4.3	4.3	4.3	4.3	4.3	4.3	4.6	5.4	4.3	4.4	5.5	4.9	5.6	4.5	4.4
130.	4.3	4.3	4.3	4.3	4.3	4.3	4.6	5.3	4.4	4.4	5.4	4.8	5.4	4.5	4.5
140.	4.3	4.3	4.3	4.3	4.3	4.3	4.5	5.2	4.4	4.5	5.3	4.7	5.4	4.5	4.5
150.	4.3	4.3	4.3	4.3	4.3	4.3	4.5	5.2	4.5	4.5	5.3	4.7	5.4	4.5	4.5
160.	4.3	4.3	4.3	4.3	4.3	4.3	4.6	5.2	4.5	4.5	5.3	4.7	5.3	4.5	4.5
170.	4.3	4.3	4.3	4.3	4.3	4.3	4.7	5.2	4.5	4.5	5.3	4.7	5.3	4.5	4.5
180.	4.3	4.3	4.3	4.3	4.3	4.3	4.9	5.1	4.5	4.5	5.2	4.7	5.2	4.5	4.6
190.	4.3	4.3	4.3	4.3	4.3	4.3	4.9	5.2	4.5	4.5	5.3	4.7	5.3	4.5	4.7
200.	4.3	4.3	4.3	4.3	4.3	4.3	5.1	5.1	4.5	4.5	5.3	4.8	5.3	4.5	4.7
210.	4.3	4.3	4.3	4.3	4.3	4.3	5.1	5.1	4.5	4.5	5.3	4.8	5.3	4.5	4.7
220.	4.3	4.3	4.3	4.3	4.3	4.3	5.2	5.1	4.5	4.5	5.3	4.8	5.3	4.5	4.6
230.	4.3	4.3	4.3	4.3	4.3	4.3	5.3	5.2	4.5	4.5	5.5	4.9	5.4	4.5	4.6
240.	4.3	4.3	4.3	4.3	4.3	4.3	5.4	5.3	4.5	4.5	5.6	4.9	5.6	4.6	4.5
250.	4.4	4.4	4.3	4.4	4.4	4.4	5.5	5.5	4.6	4.6	5.8	5.0	5.6	4.6	4.5
260.	4.6	4.6	4.3	4.5	4.6	4.6	5.6	5.6	4.6	4.6	5.9	5.0	5.7	4.6	4.5
270.	5.1	5.1	4.4	4.7	5.1	5.1	5.3	5.4	4.5	4.5	5.6	4.8	5.4	4.5	4.4
280.	5.4	5.3	4.5	4.9	5.3	5.3	4.8	4.8	4.3	4.3	5.0	4.5	4.8	4.3	4.3
290.	5.3	5.2	4.5	4.9	5.2	5.2	4.4	4.4	4.3	4.3	4.5	4.3	4.4	4.3	4.3
300.	5.2	5.1	4.5	4.9	5.1	5.1	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
310.	5.2	5.1	4.5	4.8	5.0	5.1	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
320.	5.1	5.0	4.5	4.7	4.9	5.0	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
330.	5.1	5.0	4.5	4.6	5.0	5.0	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
340.	5.0	4.9	4.5	4.5	4.9	4.9	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
350.	5.1	4.9	4.5	4.5	5.0	4.8	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
360.	5.2	4.9	4.5	4.5	5.0	4.7	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.4	4.3
MAX	5.4	5.3	4.6	4.9	5.3	5.3	5.6	5.6	4.6	4.6	5.9	5.0	5.7	4.9	4.7
DEGR.	280	280	50	280	280	280	260	260	250	250	260	250	260	40	190

THE HIGHEST CONCENTRATION OF 5.90 PPM OCCURRED AT RECEPTOR REC11.

DATE : 2/28/10
TIME : 14:16:52

RECEPTOR - LINK MATRIX FOR THE ANGLE PRODUCING
THE MAXIMUM CONCENTRATION FOR EACH RECEPTOR

CO/LINK (PPM)
ANGLE (DEGREES)

LINK #	REC1 280	REC2 280	REC3 50	REC4 280	REC5 280	REC6 280	REC7 260	REC8 260	REC9 250	REC10 250	REC11 260	REC12 250	REC13 260	REC14 40	REC15 190
1	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0
2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3	.0	.0	.0	.0	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0
4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5	.9	.9	.1	.2	.9	.9	1.2	1.2	.3	.3	1.4	.6	1.2	.0	.2
6	.1	.1	.0	.0	.1	.0	.0	.1	.0	.0	.2	.1	.1	.0	.0
7	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8	.0	.0	.2	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.6	.2
														.0	.0

JOB: BarnumPixlee2024BuildPM RUN: BarnumPixlee2024BuildPM

DATE : 2/28/10
TIME : 14:19:55

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 175. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = 4.3 PPM

LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (FT) X1	Y1	X2	Y2	*	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. Barnum Ave EB in	*	.0	430.0	200.0	430.0	*	200.	90.	AG	511.	9.5	.0	12.0		
2. Barnum Ave EB LTR	*	200.0	430.0	253.1	430.0	*	53.	90.	AG	100.	100.0	.0	12.0	.47	2.7
3. Barnum Ave EB out	*	440.0	430.0	848.0	430.0	*	408.	90.	AG	511.	9.5	.0	12.0		
4. Barnum Ave WB in	*	848.0	444.0	648.0	444.0	*	200.	270.	AG	389.	9.5	.0	14.0		
5. Barnum Ave WB LTR	*	648.0	444.0	-1255.5	444.0	*	1903.	270.	AG	304.	100.0	.0	14.0	1.79	96.7
6. Barnum Ave WB out	*	394.0	442.0	.0	442.0	*	394.	270.	AG	389.	9.5	.0	12.0		
7. Elizabeth St NB in	*	430.0	.0	430.0	200.0	*	200.	360.	AG	45.	9.5	.0	14.0		
8. Elizabeth St NB LTR	*	430.0	200.0	430.0	214.3	*	14.	360.	AG	304.	100.0	.0	14.0	.19	.7
9. Pixlee Pl NB out	*	436.0	468.0	436.0	836.0	*	368.	360.	AG	45.	9.5	.0	12.0		
10. Pixlee Pl SB in	*	424.0	836.0	424.0	700.0	*	136.	180.	AG	49.	9.5	.0	12.0		
11. Pixlee Pl SB LTR	*	424.0	700.0	424.0	684.5	*	16.	180.	AG	304.	100.0	.0	12.0	.21	.8
12. Elizabeth St SB out	*	416.0	420.0	416.0	.0	*	420.	180.	AG	49.	9.5	.0	12.0		
13. Grant St SEB in	*	.0	836.0	200.0	634.0	*	284.	135.	AG	225.	9.5	.0	12.0		
14. Grant St SEB LTR	*	200.0	634.0	278.4	563.5	*	105.	132.	AG	304.	100.0	.0	12.0	.94	5.4
15. Grant St NEB out	*	12.0	848.0	412.0	466.0	*	553.	134.	AG	225.	9.5	.0	12.0		

DATE : 2/28/10
TIME : 14:19:55

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
2. Barnum Ave EB LTR	75	19	5.0	511	1665	146.70	2	4
5. Barnum Ave WB LTR	75	58	5.0	389	1633	146.70	2	4
8. Elizabeth St NB LTR	75	58	5.0	45	1786	146.70	2	3
11. Pixlee Pl SB LTR	75	58	5.0	49	1767	146.70	2	3
14. Grant St SEB LTR	75	58	5.0	225	1802	146.70	2	3

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. EB W Midblock	196.0	410.0	6.0
2. SW Corner	400.0	410.0	6.0
3. SB S Midblock	400.0	200.0	6.0
4. NB S Midblock	454.0	200.0	6.0
5. SE Corner	454.0	410.0	6.0
6. EB E Midblock	648.0	410.0	6.0
7. WB E Midblock	648.0	464.0	6.0
8. NE Corner	454.0	464.0	6.0
9. NB N Midblock	454.0	640.0	6.0
10. SB N Midblock	400.0	640.0	6.0
11. NW Corner (btwn Barn	370.0	460.0	6.0
12. NW Corner (btwn Gran	400.0	500.0	6.0
13. WB W Midblock	196.0	464.0	6.0
14. SEB W Midblock	194.0	616.0	6.0
15. NWB W Midblock	224.0	670.0	6.0

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	* CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15
0.	5.3	4.9	4.5	4.5	5.0	4.7	4.3	4.3	4.3	4.3	4.3	4.3	4.4	4.5	4.3
10.	5.3	4.9	4.5	4.5	5.0	4.6	4.3	4.3	4.3	4.4	4.3	4.3	4.5	4.6	4.3
20.	5.3	4.9	4.5	4.5	5.0	4.6	4.3	4.3	4.3	4.4	4.3	4.3	4.5	4.7	4.3
30.	5.3	4.9	4.5	4.4	5.0	4.5	4.3	4.3	4.3	4.4	4.3	4.3	4.5	4.9	4.3
40.	5.2	4.9	4.5	4.4	5.0	4.5	4.3	4.3	4.3	4.4	4.3	4.3	4.4	5.0	4.3
50.	5.3	5.0	4.5	4.3	5.1	4.5	4.3	4.3	4.3	4.3	4.3	4.3	4.4	5.0	4.3
60.	5.3	5.1	4.5	4.3	5.1	4.5	4.3	4.3	4.3	4.3	4.3	4.3	4.3	5.1	4.3
70.	5.4	5.1	4.6	4.3	5.1	4.5	4.3	4.4	4.3	4.3	4.4	4.3	4.4	5.1	4.3
80.	5.2	4.9	4.6	4.3	5.0	4.5	4.3	4.5	4.3	4.3	4.7	4.3	4.7	5.1	4.3
90.	4.7	4.7	4.6	4.3	4.6	4.4	4.4	4.9	4.3	4.3	5.2	4.4	5.2	5.2	4.3
100.	4.5	4.5	4.5	4.3	4.5	4.3	4.5	5.2	4.3	4.3	5.5	4.6	5.4	5.3	4.3
110.	4.3	4.3	4.4	4.3	4.3	4.3	4.5	5.4	4.3	4.3	5.6	4.8	5.6	5.3	4.4
120.	4.3	4.3	4.3	4.3	4.3	4.3	4.5	5.4	4.3	4.4	5.4	4.9	5.5	5.2	4.4
130.	4.3	4.3	4.3	4.3	4.3	4.3	4.5	5.3	4.4	4.4	5.4	4.9	5.4	4.9	4.5
140.	4.3	4.3	4.3	4.3	4.3	4.3	4.5	5.2	4.4	4.5	5.3	4.7	5.4	4.7	4.7
150.	4.3	4.3	4.3	4.3	4.3	4.3	4.5	5.2	4.5	4.5	5.3	4.7	5.4	4.6	4.9
160.	4.3	4.3	4.3	4.3	4.3	4.3	4.6	5.2	4.5	4.5	5.3	4.7	5.3	4.5	5.0
170.	4.3	4.3	4.3	4.3	4.3	4.3	4.7	5.2	4.5	4.5	5.3	4.7	5.3	4.5	5.1
180.	4.3	4.3	4.3	4.3	4.3	4.3	4.8	5.1	4.5	4.5	5.2	4.8	5.3	4.5	5.1
190.	4.3	4.3	4.3	4.3	4.3	4.3	4.9	5.2	4.5	4.5	5.3	4.8	5.3	4.5	5.0
200.	4.3	4.3	4.3	4.3	4.3	4.3	5.1	5.1	4.5	4.5	5.3	4.8	5.3	4.5	5.0
210.	4.3	4.3	4.3	4.3	4.3	4.3	5.1	5.1	4.5	4.5	5.3	4.8	5.3	4.5	4.9
220.	4.3	4.3	4.3	4.3	4.3	4.3	5.2	5.1	4.5	4.5	5.3	5.0	5.3	4.5	4.8
230.	4.3	4.3	4.3	4.3	4.3	4.3	5.3	5.2	4.5	4.6	5.4	5.0	5.4	4.5	4.7
240.	4.3	4.3	4.3	4.3	4.3	4.3	5.4	5.3	4.6	4.6	5.5	5.0	5.5	4.6	4.6
250.	4.4	4.4	4.3	4.4	4.4	4.4	5.5	5.5	4.7	4.8	5.7	5.1	5.6	4.6	4.6
260.	4.6	4.6	4.3	4.5	4.6	4.6	5.6	5.6	4.6	4.7	5.8	5.0	5.7	4.5	4.6
270.	5.0	5.0	4.4	4.7	5.0	5.1	5.3	5.4	4.5	4.5	5.5	4.8	5.3	4.4	4.5
280.	5.3	5.2	4.5	4.9	5.2	5.3	4.8	4.8	4.3	4.4	4.9	4.7	4.8	4.3	4.4
290.	5.3	5.2	4.5	4.9	5.2	5.2	4.5	4.5	4.3	4.3	4.5	4.5	4.4	4.3	4.4
300.	5.2	5.1	4.5	4.8	5.1	5.1	4.3	4.5	4.3	4.3	4.4	4.6	4.3	4.3	4.4
310.	5.2	5.2	4.5	4.7	5.1	5.1	4.3	4.4	4.4	4.3	4.5	4.5	4.3	4.3	4.4
320.	5.1	5.1	4.5	4.6	5.1	5.0	4.3	4.3	4.4	4.3	4.5	4.4	4.3	4.4	4.3
330.	5.1	5.1	4.5	4.5	5.0	5.0	4.3	4.3	4.4	4.3	4.5	4.3	4.3	4.4	4.3
340.	5.0	4.8	4.6	4.5	4.9	4.9	4.3	4.3	4.4	4.3	4.3	4.3	4.3	4.4	4.3
350.	5.1	4.9	4.5	4.5	5.0	4.8	4.3	4.3	4.4	4.3	4.3	4.3	4.4	4.5	4.3
360.	5.3	4.9	4.5	4.5	5.0	4.7	4.3	4.3	4.3	4.3	4.3	4.3	4.4	4.5	4.3
MAX	5.4	5.2	4.6	4.9	5.2	5.3	5.6	5.6	4.7	4.8	5.8	5.1	5.7	5.3	5.1
DEGR.	70	280	70	280	280	280	260	260	250	250	260	250	260	100	170

THE HIGHEST CONCENTRATION OF 5.80 PPM OCCURRED AT RECEPTOR REC11.

JOB: BarnumPixlee2024BuildPM RUN: BarnumPixlee2024BuildPM

DATE : 2/28/10
TIME : 14:19:55

RECEPTOR - LINK MATRIX FOR THE ANGLE PRODUCING
THE MAXIMUM CONCENTRATION FOR EACH RECEPTOR

	*	CO/LINK (PPM) ANGLE (DEGREES)														
LINK #	*	REC1 70	REC2 280	REC3 70	REC4 280	REC5 280	REC6 280	REC7 260	REC8 260	REC9 250	REC10 250	REC11 260	REC12 250	REC13 260	REC14 100	REC15 170
1	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0
2	*	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3	*	.0	.0	.0	.0	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0
4	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5	*	.8	.8	.0	.2	.8	.9	1.2	1.2	.3	.3	1.4	.6	1.2	.1	.2
6	*	.1	.1	.0	.0	.1	.0	.0	.1	.0	.0	.1	.1	.1	.0	.0
7	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8	*	.0	.0	.3	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14	*	.0	.0	.0	.0	.0	.0	.0	.0	.1	.2	.0	.0	.0	.9	.5
15	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.1

APPENDIX E
Noise Modeling Results

Federal Transit Adminstration
General Transit Noise Assessment
Case: GBT - Receiver N1 (2024)
Residence at western terminus of Cross Street

RESULTS

Noise Source	Ldn (dB)	Leq - daytime (dB)	Leq - nighttime (dB)
All Sources	57	52	50
Source 1	57	52	50
Source 2	22	17	15
Source 3	0	0	0

Enter noise receiver land use category below.

LAND USE CATEGORY	
Noise receiver land use category (1, 2 or 3)	2

Enter data for each noise source below - see reference list for source numbers.

NOISE SOURCE PARAMETERS

Parameter	Source 1		Source 2		Source 3	
Source Num.	Bus Op. Facility	15	Parking Garage	17		
Dist. to receiver	distance (ft)	325	distance (ft)	285		
Daytime Hours (7 AM - 10 PM)	buses/hour	22	autos/hour	8		
	buses serviced/hour	8		3		
Nighttime Hours (10 PM - 7 AM)	buses/hour	3	autos/hour	6		
	buses serviced/hour	8				
Jointed Track?		Y		N		
Embedded Track?		N		N		
Aerial Structure?		N		N		
Barrier Present?	Y/N	N	Y/N	N		
Intervening Rows of Buildings	number	0	number	0		

Federal Transit Adminstration
General Transit Noise Assessment
Case: GBT - Receiver N2 (2024)
Residence at northwest corner of Cross & Elizabeth Streets

RESULTS			
Noise Source	**Ldn (dB)**	**Leq - daytime (dB)**	**Leq - nighttime (dB)**
All Sources	56	52	49
Source 1	56	52	49
Source 2	20	14	13
Source 3	0	0	0

Enter noise receiver land use category below.

LAND USE CATEGORY	
Noise receiver land use category (1, 2 or 3)	2

Enter data for each noise source below - see reference list for source numbers.

NOISE SOURCE PARAMETERS							
Parameter	**Source 1**		**Source 2**		**Source 3**		
Source Num.	Bus Op. Facility	15	Parking Garage	17			
Dist. to receiver	distance (ft)	335	distance (ft)	350			
Daytime Hours (7 AM - 10 PM)	buses/hour buses serviced/hour	22 8	autos/hour	8 3			
Nighttime Hours (10 PM - 7 AM)	buses/hour buses serviced/hour	3 8	autos/hour	6			
Jointed Track?		N		N			
Embedded Track?		N		N			
Aerial Structure?		N		N			
Barrier Present?	Y/N	N	Y/N	N			
Intervening Rows of Buildings	number	0	number	0			

Federal Transit Adminstration
General Transit Noise Assessment
Case: GBT - Receiver N3 (2024)
Residence at northeast corner of Cross & Elizabeth Streets

RESULTS			
Noise Source	**Ldn (dB)**	**Leq - daytime (dB)**	**Leq - nighttime (dB)**
All Sources	55	50	48
Source 1	55	50	48
Source 2	16	11	10
Source 3	0	0	0

Enter noise receiver land use category below.

LAND USE CATEGORY	
Noise receiver land use category (1, 2 or 3)	2

Enter data for each noise source below - see reference list for source numbers.

NOISE SOURCE PARAMETERS					
Parameter	**Source 1**		**Source 2**		**Source 3**
Source Num.	Bus Op. Facility	15	Parking Garage	17	
Dist. to receiver	distance (ft)	380	distance (ft)	480	
Daytime Hours (7 AM - 10 PM)	buses/hour buses serviced/hour	22 8	autos/hour	8 3	
Nighttime Hours (10 PM - 7 AM)	buses/hour buses serviced/hour	3 8	autos/hour	6	
Jointed Track?		N		N	
Embedded Track?		N		N	
Aerial Structure?		N		N	
Barrier Present?	Y/N	N	Y/N	N	
Intervening Rows of Buildings	number	0	number	0	

APPENDIX D: CALQVIEW2 Model Results

CALQVIEW2 modeling results are presented in the order indicated below. Model run names are indicated in the text of each run.

Barnum Ave & Pixlee Pl / Elizabeth St / Grant St 2009 Existing AM
Barnum Ave & Pixlee Pl / Elizabeth St / Grant St 2009Existing PM
Barnum Ave & Pixlee Pl / Elizabeth St / Grant St 2024 No Build AM
Barnum Ave & Pixlee Pl / Elizabeth St / Grant St 2024 No Build PM
Barnum Ave & Pixlee Pl / Elizabeth St / Grant St 2024 Build AM
Barnum Ave & Pixlee Pl / Elizabeth St / Grant St 2024Build PM

CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 95221

JOB: BarnumPixlee2009ExistingAM

RUN: BarnumPixlee2009ExistingAM

DATE : 2/28/10
TIME : 13:59:18

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 175. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = 4.3 PPM

LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (FT) X1	Y1	X2	Y2	*	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. Barnum Ave EB in	*	.0	430.0	200.0	430.0	*	200.	90.	AG	335.	13.0	.0	12.0		
2. Barnum Ave EB LTR	*	200.0	430.0	234.8	430.0	*	35.	90.	AG	137.	100.0	.0	12.0	.32	1.8
3. Barnum Ave EB out	*	440.0	430.0	848.0	430.0	*	408.	90.	AG	335.	13.0	.0	12.0		
4. Barnum Ave WB in	*	848.0	444.0	648.0	444.0	*	200.	270.	AG	446.	13.0	.0	14.0		
5. Barnum Ave WB LTR	*	648.0	444.0	-1887.8	444.0	*	2536.	270.	AG	419.	100.0	.0	14.0	2.09	128.8
6. Barnum Ave WB out	*	394.0	442.0	.0	442.0	*	394.	270.	AG	446.	13.0	.0	12.0		
7. Elizabeth St NB in	*	430.0	.0	430.0	200.0	*	200.	360.	AG	39.	13.0	.0	14.0		
8. Elizabeth St NB LTR	*	430.0	200.0	430.0	212.4	*	12.	360.	AG	419.	100.0	.0	14.0	.16	.6
9. Pixlee Pl NB out	*	436.0	468.0	436.0	836.0	*	368.	360.	AG	39.	13.0	.0	12.0		
10. Pixlee Pl SB in	*	424.0	836.0	424.0	700.0	*	136.	180.	AG	5.	13.0	.0	12.0		
11. Pixlee Pl SB LTR	*	424.0	700.0	424.0	698.4	*	2.	180.	AG	419.	100.0	.0	12.0	.02	.1
12. Elizabeth St SB out	*	416.0	420.0	416.0	.0	*	420.	180.	AG	5.	13.0	.0	12.0		
13. Grant St SEB in	*	.0	836.0	200.0	634.0	*	284.	135.	AG	40.	13.0	.0	12.0		
14. Grant St SEB LTR	*	200.0	634.0	209.4	625.5	*	13.	132.	AG	419.	100.0	.0	12.0	.18	.6
15. Grant St NEB out	*	12.0	848.0	412.0	466.0	*	553.	134.	AG	40.	13.0	.0	12.0		

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
2. Barnum Ave EB LTR	75	19	5.0	335	1589	202.00	2	4
5. Barnum Ave WB LTR	75	58	5.0	446	1600	202.00	2	4
8. Elizabeth St NB LTR	75	58	5.0	39	1800	202.00	2	3
11. Pixlee Pl SB LTR	75	58	5.0	5	1644	202.00	2	3
14. Grant St SEB LTR	75	58	5.0	40	1690	202.00	2	3

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. EB W Midblock	196.0	410.0	6.0
2. SW Corner	400.0	410.0	6.0
3. SB S Midblock	400.0	200.0	6.0
4. NB S Midblock	454.0	200.0	6.0
5. SE Corner	454.0	410.0	6.0
6. EB E Midblock	648.0	410.0	6.0
7. WB E Midblock	648.0	464.0	6.0
8. NE Corner	454.0	464.0	6.0
9. NB N Midblock	454.0	640.0	6.0
10. SB N Midblock	400.0	640.0	6.0
11. NW Corner (btwn Barn	370.0	460.0	6.0
12. NW Corner (btwn Gran	400.0	500.0	6.0
13. WB W Midblock	196.0	464.0	6.0
14. SEB W Midblock	194.0	616.0	6.0
15. NWB W Midblock	224.0	670.0	6.0

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15
0.	5.4	5.1	4.5	4.5	5.2	4.9	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.5	4.3
10.	5.5	5.1	4.5	4.5	5.2	4.7	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.7	4.3
20.	5.4	5.1	4.5	4.5	5.2	4.6	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.8	4.3
30.	5.5	5.1	4.5	4.5	5.2	4.5	4.3	4.3	4.3	4.3	4.3	4.3	4.3	5.0	4.3
40.	5.5	5.1	4.6	4.4	5.2	4.5	4.3	4.3	4.3	4.3	4.3	4.3	4.3	5.0	4.3
50.	5.6	5.2	4.5	4.3	5.3	4.5	4.3	4.3	4.3	4.3	4.3	4.3	4.3	5.0	4.3
60.	5.6	5.4	4.6	4.3	5.3	4.5	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.8	4.3
70.	5.6	5.3	4.7	4.3	5.3	4.5	4.3	4.4	4.3	4.3	4.5	4.3	4.4	4.6	4.3
80.	5.4	5.1	4.7	4.3	5.0	4.5	4.3	4.6	4.3	4.3	4.9	4.3	4.8	4.5	4.3
90.	4.9	4.8	4.6	4.3	4.7	4.4	4.4	5.1	4.3	4.3	5.5	4.5	5.4	4.4	4.3
100.	4.5	4.4	4.5	4.3	4.4	4.3	4.6	5.5	4.3	4.3	5.9	4.7	5.8	4.4	4.3
110.	4.4	4.3	4.4	4.3	4.3	4.3	4.6	5.7	4.3	4.3	6.0	5.0	6.0	4.5	4.4
120.	4.3	4.3	4.3	4.3	4.3	4.3	4.6	5.7	4.3	4.4	6.0	5.1	6.0	4.6	4.5
130.	4.3	4.3	4.3	4.3	4.3	4.3	4.6	5.6	4.4	4.5	5.8	5.1	5.8	4.6	4.5
140.	4.3	4.3	4.3	4.3	4.3	4.3	4.6	5.5	4.5	4.5	5.7	4.9	5.7	4.6	4.5
150.	4.3	4.3	4.3	4.3	4.3	4.3	4.6	5.5	4.5	4.6	5.6	4.9	5.7	4.6	4.5
160.	4.3	4.3	4.3	4.3	4.3	4.3	4.7	5.4	4.6	4.6	5.6	4.9	5.6	4.6	4.5
170.	4.3	4.3	4.3	4.3	4.3	4.3	4.8	5.4	4.6	4.6	5.6	4.9	5.5	4.6	4.5
180.	4.3	4.3	4.3	4.3	4.3	4.3	5.0	5.4	4.6	4.6	5.6	4.9	5.5	4.6	4.6
190.	4.3	4.3	4.3	4.3	4.3	4.3	5.1	5.4	4.6	4.6	5.6	4.9	5.5	4.6	4.7
200.	4.3	4.3	4.3	4.3	4.3	4.3	5.3	5.3	4.6	4.6	5.6	5.0	5.5	4.6	4.7
210.	4.3	4.3	4.3	4.3	4.3	4.3	5.4	5.4	4.6	4.6	5.6	5.0	5.6	4.6	4.8
220.	4.3	4.3	4.3	4.3	4.3	4.3	5.5	5.4	4.6	4.6	5.8	5.0	5.6	4.6	4.8
230.	4.3	4.3	4.3	4.3	4.3	4.3	5.6	5.5	4.6	4.6	5.9	5.1	5.8	4.6	4.7
240.	4.3	4.3	4.3	4.3	4.3	4.3	5.8	5.7	4.6	4.6	6.1	5.1	6.0	4.7	4.6
250.	4.4	4.4	4.3	4.4	4.4	4.4	6.0	6.0	4.7	4.7	6.3	5.2	6.2	4.7	4.6
260.	4.7	4.7	4.3	4.6	4.7	4.7	6.1	6.1	4.6	4.6	6.4	5.3	6.2	4.7	4.6
270.	5.3	5.3	4.4	4.8	5.3	5.3	5.7	5.8	4.5	4.5	6.0	4.9	5.8	4.5	4.4
280.	5.7	5.6	4.6	5.1	5.6	5.6	5.0	5.1	4.3	4.3	5.2	4.5	5.0	4.3	4.3
290.	5.6	5.5	4.6	5.1	5.5	5.5	4.5	4.5	4.3	4.3	4.6	4.3	4.5	4.3	4.3
300.	5.5	5.4	4.6	5.0	5.4	5.4	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
310.	5.4	5.3	4.6	4.9	5.2	5.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
320.	5.3	5.2	4.5	4.6	5.1	5.2	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
330.	5.3	5.2	4.5	4.5	5.2	5.2	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
340.	5.2	5.1	4.5	4.5	5.1	5.1	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
350.	5.3	5.1	4.5	4.5	5.2	4.9	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
360.	5.4	5.1	4.5	4.5	5.2	4.9	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.4	4.3
MAX	5.7	5.6	4.7	5.1	5.6	5.6	6.1	6.1	4.7	4.7	6.4	5.3	6.2	5.0	4.8
DEGR.	280	280	70	280	280	280	260	260	250	250	260	260	250	30	210

THE HIGHEST CONCENTRATION OF 6.40 PPM OCCURRED AT RECEPTOR REC11.

DATE : 2/28/10
TIME : 13:59:18

RECEPTOR - LINK MATRIX FOR THE ANGLE PRODUCING
THE MAXIMUM CONCENTRATION FOR EACH RECEPTOR

CO/LINK (PPM)
ANGLE (DEGREES)

LINK #	REC1 280	REC2 280	REC3 70	REC4 280	REC5 280	REC6 280	REC7 260	REC8 260	REC9 250	REC10 250	REC11 260	REC12 260	REC13 250	REC14 30	REC15 210
1	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0
2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3	.0	.0	.0	.0	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0
4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5	1.2	1.2	.0	.3	1.2	1.2	1.7	1.7	.4	.4	1.9	.9	1.6	.0	.3
6	.1	.1	.0	.0	.1	.0	.0	.1	.0	.0	.2	.1	.2	.0	.0
7	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8	.0	.0	.4	.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.7	.2
														.0	.0

CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 95221

JOB: BarnumPixlee2009ExistingPM

RUN: BarnumPixlee2009ExistingPM

DATE : 2/28/10
TIME : 13:57:49

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 175. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = 4.3 PPM

LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (FT) X1	Y1	X2	Y2	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. Barnum Ave EB in	.0	430.0	200.0	430.0	200.	90.	AG	390.	13.0	.0	12.0		
2. Barnum Ave EB LTR	200.0	430.0	240.5	430.0	41.	90.	AG	137.	100.0	.0	12.0	.36	2.1
3. Barnum Ave EB out	440.0	430.0	848.0	430.0	408.	90.	AG	390.	13.0	.0	12.0		
4. Barnum Ave WB in	848.0	444.0	648.0	444.0	200.	270.	AG	305.	13.0	.0	14.0		
5. Barnum Ave WB LTR	648.0	444.0	-383.2	444.0	1031.	270.	AG	419.	100.0	.0	14.0	1.41	52.4
6. Barnum Ave WB out	394.0	442.0	.0	442.0	394.	270.	AG	305.	13.0	.0	12.0		
7. Elizabeth St NB in	430.0	.0	430.0	200.0	200.	360.	AG	29.	13.0	.0	14.0		
8. Elizabeth St NB LTR	430.0	200.0	430.0	209.2	9.	360.	AG	419.	100.0	.0	14.0	.12	.5
9. Pixlee Pl NB out	436.0	468.0	436.0	836.0	368.	360.	AG	29.	13.0	.0	12.0		
10. Pixlee Pl SB in	424.0	836.0	424.0	700.0	136.	180.	AG	39.	13.0	.0	12.0		
11. Pixlee Pl SB LTR	424.0	700.0	424.0	687.6	12.	180.	AG	419.	100.0	.0	12.0	.17	.6
12. Elizabeth St SB out	416.0	420.0	416.0	.0	420.	180.	AG	39.	13.0	.0	12.0		
13. Grant St SEB in	.0	836.0	200.0	634.0	284.	135.	AG	180.	13.0	.0	12.0		
14. Grant St SEB LTR	200.0	634.0	244.5	593.9	60.	132.	AG	419.	100.0	.0	12.0	.75	3.0
15. Grant St NEB out	12.0	848.0	412.0	466.0	553.	134.	AG	180.	13.0	.0	12.0		

DATE : 2/28/10
TIME : 13:57:49

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
2. Barnum Ave EB LTR	75	19	5.0	390	1666	202.00	2	4
5. Barnum Ave WB LTR	75	58	5.0	305	1633	202.00	2	4
8. Elizabeth St NB LTR	75	58	5.0	29	1778	202.00	2	3
11. Pixlee Pl SB LTR	75	58	5.0	39	1767	202.00	2	3
14. Grant St SEB LTR	75	58	5.0	180	1802	202.00	2	3

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. EB W Midblock	196.0	410.0	6.0
2. SW Corner	400.0	410.0	6.0
3. SB S Midblock	400.0	200.0	6.0
4. NB S Midblock	454.0	200.0	6.0
5. SE Corner	454.0	410.0	6.0
6. EB E Midblock	648.0	410.0	6.0
7. WB E Midblock	648.0	464.0	6.0
8. NE Corner	454.0	464.0	6.0
9. NB N Midblock	454.0	640.0	6.0
10. SB N Midblock	400.0	640.0	6.0
11. NW Corner (btwn Barn	370.0	460.0	6.0
12. NW Corner (btwn Gran	400.0	500.0	6.0
13. WB W Midblock	196.0	464.0	6.0
14. SEB W Midblock	194.0	616.0	6.0
15. NWB W Midblock	224.0	670.0	6.0

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15
0.	5.5	5.1	4.5	4.5	5.2	4.8	4.3	4.3	4.3	4.4	4.3	4.3	4.4	4.6	4.3
10.	5.6	5.1	4.5	4.5	5.2	4.7	4.3	4.3	4.3	4.4	4.3	4.3	4.5	4.7	4.3
20.	5.4	5.0	4.5	4.5	5.1	4.6	4.3	4.3	4.3	4.4	4.3	4.3	4.4	4.9	4.3
30.	5.5	5.1	4.5	4.5	5.2	4.5	4.3	4.3	4.3	4.4	4.3	4.3	4.4	5.1	4.3
40.	5.5	5.1	4.5	4.4	5.2	4.5	4.3	4.3	4.3	4.4	4.3	4.3	4.3	5.2	4.3
50.	5.6	5.2	4.5	4.3	5.3	4.5	4.3	4.3	4.3	4.3	4.3	4.3	4.3	5.3	4.3
60.	5.7	5.4	4.5	4.3	5.4	4.6	4.3	4.3	4.3	4.3	4.3	4.3	4.3	5.4	4.3
70.	5.6	5.3	4.6	4.3	5.4	4.6	4.3	4.4	4.3	4.3	4.5	4.3	4.4	5.4	4.3
80.	5.4	5.1	4.6	4.3	5.1	4.5	4.3	4.6	4.3	4.3	4.9	4.3	4.8	5.4	4.3
90.	4.9	4.8	4.6	4.3	4.7	4.4	4.4	5.1	4.3	4.3	5.5	4.5	5.4	5.4	4.3
100.	4.5	4.5	4.5	4.3	4.5	4.3	4.5	5.5	4.3	4.3	5.9	4.8	5.8	5.5	4.3
110.	4.4	4.3	4.4	4.3	4.3	4.3	4.5	5.7	4.3	4.3	6.0	5.0	5.9	5.4	4.4
120.	4.3	4.3	4.3	4.3	4.3	4.3	4.5	5.7	4.3	4.4	5.9	5.1	5.9	5.2	4.5
130.	4.3	4.3	4.3	4.3	4.3	4.3	4.5	5.6	4.4	4.5	5.8	5.1	5.8	4.9	4.5
140.	4.3	4.3	4.3	4.3	4.3	4.3	4.5	5.5	4.5	4.5	5.7	4.9	5.7	4.7	4.6
150.	4.3	4.3	4.3	4.3	4.3	4.3	4.6	5.5	4.5	4.6	5.6	4.9	5.7	4.6	4.7
160.	4.3	4.3	4.3	4.3	4.3	4.3	4.7	5.4	4.6	4.6	5.6	4.9	5.6	4.6	4.9
170.	4.3	4.3	4.3	4.3	4.3	4.3	4.8	5.4	4.6	4.6	5.6	5.0	5.5	4.6	5.1
180.	4.3	4.3	4.3	4.3	4.3	4.3	4.9	5.4	4.6	4.6	5.6	5.0	5.6	4.6	5.2
190.	4.3	4.3	4.3	4.3	4.3	4.3	5.1	5.4	4.6	4.6	5.6	5.0	5.5	4.6	5.2
200.	4.3	4.3	4.3	4.3	4.3	4.3	5.3	5.3	4.6	4.6	5.6	5.0	5.5	4.6	5.1
210.	4.3	4.3	4.3	4.3	4.3	4.3	5.4	5.4	4.6	4.6	5.6	5.0	5.6	4.6	5.0
220.	4.3	4.3	4.3	4.3	4.3	4.3	5.5	5.4	4.6	4.6	5.7	5.1	5.6	4.6	4.9
230.	4.3	4.3	4.3	4.3	4.3	4.3	5.6	5.5	4.6	4.6	5.8	5.2	5.7	4.6	4.8
240.	4.3	4.3	4.3	4.3	4.3	4.3	5.8	5.7	4.6	4.6	6.0	5.2	5.9	4.6	4.6
250.	4.4	4.4	4.3	4.4	4.4	4.4	5.9	5.9	4.7	4.7	6.1	5.3	6.0	4.5	4.6
260.	4.6	4.6	4.3	4.5	4.6	4.6	6.0	5.9	4.6	4.5	6.2	5.1	6.0	4.4	4.5
270.	5.1	5.1	4.3	4.7	5.2	5.2	5.5	5.6	4.5	4.4	5.8	4.8	5.5	4.3	4.4
280.	5.5	5.5	4.4	4.8	5.5	5.5	4.9	4.9	4.3	4.4	5.0	4.6	4.8	4.3	4.4
290.	5.7	5.5	4.5	4.9	5.5	5.6	4.5	4.6	4.3	4.3	4.5	4.5	4.5	4.3	4.4
300.	5.6	5.4	4.6	4.9	5.3	5.5	4.3	4.5	4.3	4.3	4.4	4.5	4.3	4.3	4.4
310.	5.4	5.4	4.6	4.8	5.3	5.3	4.3	4.5	4.4	4.3	4.4	4.5	4.3	4.3	4.4
320.	5.3	5.3	4.5	4.6	5.4	5.2	4.3	4.3	4.4	4.3	4.4	4.4	4.3	4.4	4.3
330.	5.3	5.3	4.5	4.5	5.2	5.2	4.3	4.3	4.4	4.3	4.5	4.3	4.3	4.4	4.3
340.	5.2	5.0	4.5	4.5	5.1	5.1	4.3	4.3	4.4	4.3	4.4	4.3	4.4	4.4	4.3
350.	5.4	5.1	4.5	4.5	5.2	4.9	4.3	4.3	4.4	4.3	4.3	4.3	4.4	4.5	4.3
360.	5.5	5.1	4.5	4.5	5.2	4.8	4.3	4.3	4.3	4.4	4.3	4.3	4.4	4.6	4.3
MAX	5.7	5.5	4.6	4.9	5.5	5.6	6.0	5.9	4.7	4.7	6.2	5.3	6.0	5.5	5.2
DEGR.	60	280	70	290	280	290	260	250	250	250	260	250	250	100	180

THE HIGHEST CONCENTRATION OF 6.20 PPM OCCURRED AT RECEPTOR REC11.

DATE : 2/28/10
TIME : 13:57:49

RECEPTOR - LINK MATRIX FOR THE ANGLE PRODUCING
THE MAXIMUM CONCENTRATION FOR EACH RECEPTOR

	*	CO/LINK (PPM) ANGLE (DEGREES)														
LINK #	*	REC1 60	REC2 280	REC3 70	REC4 290	REC5 280	REC6 290	REC7 260	REC8 250	REC9 250	REC10 250	REC11 260	REC12 250	REC13 250	REC14 100	REC15 180
1	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0
2	*	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3	*	.0	.0	.0	.0	.0	.2	.1	.0	.0	.0	.0	.0	.0	.0	.0
4	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5	*	1.0	1.1	.0	.2	1.1	1.1	1.6	1.5	.3	.3	1.8	.8	1.5	.1	.2
6	*	.1	.1	.0	.0	.1	.0	.0	.1	.0	.0	.1	.1	.1	.0	.0
7	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8	*	.0	.0	.3	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15	*	.0	.0	.0	.0	.0	.0	.0	.0	.1	.1	.0	.0	.0	1.1	.6
										.0	.0	.0	.1	.0	.0	.1

CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 95221

JOB: BarnumPixlee2024NoBuildAM

RUN: BarnumPixlee2024NoBuildAM

DATE : 2/28/10
TIME : 14: 5:33

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 175. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = 4.3 PPM

LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (FT) X1	Y1	X2	Y2	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. Barnum Ave EB in	.0	430.0	200.0	430.0	200.	90.	AG	419.	9.5	.0	12.0		
2. Barnum Ave EB LTR	200.0	430.0	243.5	430.0	44.	90.	AG	100.	100.0	.0	12.0	.40	2.2
3. Barnum Ave EB out	440.0	430.0	848.0	430.0	408.	90.	AG	419.	9.5	.0	12.0		
4. Barnum Ave WB in	848.0	444.0	648.0	444.0	200.	270.	AG	558.	9.5	.0	14.0		
5. Barnum Ave WB LTR	648.0	444.0	-3051.0	444.0	3699.	270.	AG	304.	100.0	.0	14.0	2.62	187.9
6. Barnum Ave WB out	394.0	442.0	.0	442.0	394.	270.	AG	558.	9.5	.0	12.0		
7. Elizabeth St NB in	430.0	.0	430.0	200.0	200.	360.	AG	49.	9.5	.0	14.0		
8. Elizabeth St NB LTR	430.0	200.0	430.0	215.5	16.	360.	AG	304.	100.0	.0	14.0	.20	.8
9. Pixlee Pl NB out	436.0	468.0	436.0	836.0	368.	360.	AG	49.	9.5	.0	12.0		
10. Pixlee Pl SB in	424.0	836.0	424.0	700.0	136.	180.	AG	6.	9.5	.0	12.0		
11. Pixlee Pl SB LTR	424.0	700.0	424.0	698.1	2.	180.	AG	304.	100.0	.0	12.0	.03	.1
12. Elizabeth St SB out	416.0	420.0	416.0	.0	420.	180.	AG	6.	9.5	.0	12.0		
13. Grant St SEB in	.0	836.0	200.0	634.0	284.	135.	AG	50.	9.5	.0	12.0		
14. Grant St SEB LTR	200.0	634.0	211.8	623.4	16.	132.	AG	304.	100.0	.0	12.0	.22	.8
15. Grant St NEB out	12.0	848.0	412.0	466.0	553.	134.	AG	50.	9.5	.0	12.0		

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
2. Barnum Ave EB LTR	75	19	5.0	419	1587	146.70	2	4
5. Barnum Ave WB LTR	75	58	5.0	558	1600	146.70	2	4
8. Elizabeth St NB LTR	75	58	5.0	49	1804	146.70	2	3
11. Pixlee Pl SB LTR	75	58	5.0	6	1644	146.70	2	3
14. Grant St SEB LTR	75	58	5.0	50	1690	146.70	2	3

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. EB W Midblock	196.0	410.0	6.0
2. SW Corner	400.0	410.0	6.0
3. SB S Midblock	400.0	200.0	6.0
4. NB S Midblock	454.0	200.0	6.0
5. SE Corner	454.0	410.0	6.0
6. EB E Midblock	648.0	410.0	6.0
7. WB E Midblock	648.0	464.0	6.0
8. NE Corner	454.0	464.0	6.0
9. NB N Midblock	454.0	640.0	6.0
10. SB N Midblock	400.0	640.0	6.0
11. NW Corner (btwn Barn	370.0	460.0	6.0
12. NW Corner (btwn Gran	400.0	500.0	6.0
13. WB W Midblock	196.0	464.0	6.0
14. SEB W Midblock	194.0	616.0	6.0
15. NWB W Midblock	224.0	670.0	6.0

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	*	CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15
0.	*	5.2	4.9	4.5	4.5	5.0	4.7	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.5	4.3
10.	*	5.1	4.9	4.5	4.5	5.0	4.7	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.6	4.3
20.	*	5.1	4.8	4.5	4.5	4.9	4.6	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.7	4.3
30.	*	5.2	4.9	4.5	4.4	5.0	4.5	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.8	4.3
40.	*	5.2	4.9	4.5	4.4	5.0	4.5	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.9	4.3
50.	*	5.3	5.0	4.6	4.3	5.1	4.5	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.9	4.3
60.	*	5.3	5.1	4.6	4.3	5.1	4.5	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.8	4.3
70.	*	5.2	5.1	4.6	4.3	5.0	4.5	4.3	4.4	4.3	4.3	4.4	4.3	4.4	4.7	4.3
80.	*	5.2	4.9	4.6	4.3	4.9	4.5	4.3	4.5	4.3	4.3	4.7	4.3	4.7	4.5	4.3
90.	*	4.7	4.7	4.6	4.3	4.6	4.4	4.4	4.9	4.3	4.3	5.2	4.4	5.2	4.4	4.3
100.	*	4.5	4.4	4.5	4.3	4.4	4.3	4.5	5.2	4.3	4.3	5.5	4.6	5.4	4.4	4.3
110.	*	4.3	4.3	4.4	4.3	4.3	4.3	4.6	5.4	4.3	4.3	5.6	4.8	5.5	4.4	4.4
120.	*	4.3	4.3	4.3	4.3	4.3	4.3	4.6	5.4	4.3	4.4	5.5	4.9	5.5	4.5	4.4
130.	*	4.3	4.3	4.3	4.3	4.3	4.3	4.6	5.3	4.4	4.4	5.4	4.8	5.4	4.5	4.5
140.	*	4.3	4.3	4.3	4.3	4.3	4.3	4.5	5.2	4.4	4.5	5.3	4.7	5.4	4.5	4.5
150.	*	4.3	4.3	4.3	4.3	4.3	4.3	4.5	5.2	4.5	4.5	5.3	4.7	5.4	4.5	4.5
160.	*	4.3	4.3	4.3	4.3	4.3	4.3	4.6	5.2	4.5	4.5	5.3	4.7	5.4	4.5	4.5
170.	*	4.3	4.3	4.3	4.3	4.3	4.3	4.7	5.2	4.5	4.5	5.3	4.7	5.3	4.5	4.5
180.	*	4.3	4.3	4.3	4.3	4.3	4.3	4.9	5.1	4.5	4.5	5.2	4.7	5.3	4.5	4.5
190.	*	4.3	4.3	4.3	4.3	4.3	4.3	4.9	5.2	4.5	4.5	5.3	4.7	5.2	4.5	4.6
200.	*	4.3	4.3	4.3	4.3	4.3	4.3	5.1	5.1	4.5	4.5	5.3	4.7	5.3	4.5	4.6
210.	*	4.3	4.3	4.3	4.3	4.3	4.3	5.1	5.1	4.5	4.5	5.3	4.8	5.3	4.5	4.7
220.	*	4.3	4.3	4.3	4.3	4.3	4.3	5.2	5.1	4.5	4.5	5.3	4.8	5.3	4.5	4.7
230.	*	4.3	4.3	4.3	4.3	4.3	4.3	5.3	5.2	4.5	4.5	5.5	4.9	5.4	4.5	4.6
240.	*	4.3	4.3	4.3	4.3	4.3	4.3	5.4	5.3	4.5	4.5	5.6	4.9	5.5	4.6	4.5
250.	*	4.4	4.4	4.3	4.4	4.4	4.4	5.5	5.5	4.6	4.6	5.8	5.0	5.6	4.6	4.5
260.	*	4.6	4.6	4.3	4.5	4.6	4.6	5.6	5.6	4.6	4.6	5.9	5.0	5.7	4.6	4.5
270.	*	5.1	5.1	4.4	4.7	5.1	5.1	5.3	5.4	4.5	4.5	5.6	4.8	5.4	4.5	4.4
280.	*	5.4	5.3	4.5	4.9	5.3	5.3	4.8	4.8	4.3	4.3	5.0	4.5	4.8	4.3	4.3
290.	*	5.3	5.2	4.5	4.9	5.2	5.2	4.4	4.4	4.3	4.3	4.5	4.3	4.4	4.3	4.3
300.	*	5.2	5.1	4.5	4.9	5.1	5.1	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
310.	*	5.2	5.1	4.5	4.8	5.0	5.1	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
320.	*	5.1	5.0	4.5	4.6	4.9	5.0	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
330.	*	5.1	5.0	4.5	4.6	5.0	5.0	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
340.	*	5.0	4.9	4.5	4.5	4.9	4.9	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
350.	*	5.1	4.9	4.5	4.5	5.0	4.8	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
360.	*	5.2	4.9	4.5	4.5	5.0	4.7	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.4	4.3
MAX	*	5.4	5.3	4.6	4.9	5.3	5.3	5.6	5.6	4.6	4.6	5.9	5.0	5.7	4.9	4.7
DEGR.	*	280	280	50	280	280	280	260	260	250	250	260	250	260	40	200

THE HIGHEST CONCENTRATION OF 5.90 PPM OCCURRED AT RECEPTOR REC11.

DATE : 2/28/10
TIME : 14: 5:33

RECEPTOR - LINK MATRIX FOR THE ANGLE PRODUCING
THE MAXIMUM CONCENTRATION FOR EACH RECEPTOR

CO/LINK (PPM)
ANGLE (DEGREES)

LINK #	REC1 280	REC2 280	REC3 50	REC4 280	REC5 280	REC6 280	REC7 260	REC8 260	REC9 250	REC10 250	REC11 260	REC12 250	REC13 260	REC14 40	REC15 200
1	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0
2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3	.0	.0	.0	.0	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0
4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5	.9	.9	.1	.2	.9	.9	1.2	1.2	.3	.3	1.4	.6	1.2	.0	.2
6	.1	.1	.0	.0	.1	.0	.0	.1	.0	.0	.2	.1	.1	.0	.0
7	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8	.0	.0	.2	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.6	.2
														.0	.0

CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 95221

JOB: BarnumPixlee2024NoBuildPM

RUN: BarnumPixlee2024NoBuildPM

DATE : 2/28/10
TIME : 14: 8:58

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 175. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = 4.3 PPM

LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (FT) X1	Y1	X2	Y2	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. Barnum Ave EB in	.0	430.0	200.0	430.0	200.	90.	AG	488.	9.5	.0	12.0		
2. Barnum Ave EB LTR	200.0	430.0	250.7	430.0	51.	90.	AG	100.	100.0	.0	12.0	.45	2.6
3. Barnum Ave EB out	440.0	430.0	848.0	430.0	408.	90.	AG	488.	9.5	.0	12.0		
4. Barnum Ave WB in	848.0	444.0	648.0	444.0	200.	270.	AG	381.	9.5	.0	14.0		
5. Barnum Ave WB LTR	648.0	444.0	-1172.4	444.0	1820.	270.	AG	304.	100.0	.0	14.0	1.76	92.5
6. Barnum Ave WB out	394.0	442.0	.0	442.0	394.	270.	AG	381.	9.5	.0	12.0		
7. Elizabeth St NB in	430.0	.0	430.0	200.0	200.	360.	AG	36.	9.5	.0	14.0		
8. Elizabeth St NB LTR	430.0	200.0	430.0	211.4	11.	360.	AG	304.	100.0	.0	14.0	.15	.6
9. Pixlee Pl NB out	436.0	468.0	436.0	836.0	368.	360.	AG	36.	9.5	.0	12.0		
10. Pixlee Pl SB in	424.0	836.0	424.0	700.0	136.	180.	AG	49.	9.5	.0	12.0		
11. Pixlee Pl SB LTR	424.0	700.0	424.0	684.5	16.	180.	AG	304.	100.0	.0	12.0	.24	.8
12. Elizabeth St SB out	416.0	420.0	416.0	.0	420.	180.	AG	49.	9.5	.0	12.0		
13. Grant St SEB in	.0	836.0	200.0	634.0	284.	135.	AG	225.	9.5	.0	12.0		
14. Grant St SEB LTR	200.0	634.0	278.4	563.5	105.	132.	AG	304.	100.0	.0	12.0	.94	5.4
15. Grant St NEB out	12.0	848.0	412.0	466.0	553.	134.	AG	225.	9.5	.0	12.0		

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	*	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
2. Barnum Ave EB LTR	*	75	19	5.0	488	1665	146.70	2	4
5. Barnum Ave WB LTR	*	75	58	5.0	381	1633	146.70	2	4
8. Elizabeth St NB LTR	*	75	58	5.0	36	1780	146.70	2	3
11. Pixlee Pl SB LTR	*	75	58	5.0	49	1538	146.70	2	3
14. Grant St SEB LTR	*	75	58	5.0	225	1802	146.70	2	3

RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (FT) X	Y	Z	*
1. EB W Midblock	*	196.0	410.0	6.0	*
2. SW Corner	*	400.0	410.0	6.0	*
3. SB S Midblock	*	400.0	200.0	6.0	*
4. NB S Midblock	*	454.0	200.0	6.0	*
5. SE Corner	*	454.0	410.0	6.0	*
6. EB E Midblock	*	648.0	410.0	6.0	*
7. WB E Midblock	*	648.0	464.0	6.0	*
8. NE Corner	*	454.0	464.0	6.0	*
9. NB N Midblock	*	454.0	640.0	6.0	*
10. SB N Midblock	*	400.0	640.0	6.0	*
11. NW Corner (btwn Barn	*	370.0	460.0	6.0	*
12. NW Corner (btwn Gran	*	400.0	500.0	6.0	*
13. WB W Midblock	*	196.0	464.0	6.0	*
14. SEB W Midblock	*	194.0	616.0	6.0	*
15. NWB W Midblock	*	224.0	670.0	6.0	*

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15
0.	5.3	4.9	4.5	4.5	5.0	4.7	4.3	4.3	4.3	4.3	4.3	4.3	4.4	4.5	4.3
10.	5.3	4.9	4.5	4.5	5.0	4.6	4.3	4.3	4.3	4.4	4.3	4.3	4.5	4.6	4.3
20.	5.2	4.8	4.5	4.5	4.9	4.6	4.3	4.3	4.3	4.4	4.3	4.3	4.5	4.7	4.3
30.	5.3	4.9	4.5	4.4	5.0	4.5	4.3	4.3	4.3	4.4	4.3	4.3	4.5	4.9	4.3
40.	5.2	4.9	4.4	4.4	5.0	4.5	4.3	4.3	4.3	4.4	4.3	4.3	4.4	5.0	4.3
50.	5.3	5.0	4.5	4.3	5.1	4.5	4.3	4.3	4.3	4.4	4.3	4.3	4.4	5.0	4.3
60.	5.3	5.1	4.5	4.3	5.1	4.5	4.3	4.3	4.3	4.3	4.3	4.3	4.4	5.0	4.3
70.	5.3	5.1	4.5	4.3	5.1	4.5	4.3	4.3	4.3	4.3	4.3	4.3	4.3	5.1	4.3
80.	5.2	4.9	4.6	4.3	4.9	4.5	4.3	4.4	4.3	4.3	4.4	4.3	4.4	5.1	4.3
90.	4.7	4.7	4.5	4.3	4.6	4.4	4.4	4.5	4.3	4.3	4.7	4.3	4.7	5.1	4.3
100.	4.5	4.4	4.5	4.3	4.4	4.3	4.5	4.9	4.3	4.3	5.2	4.4	5.2	5.2	4.3
110.	4.3	4.3	4.4	4.3	4.3	4.3	4.5	5.2	4.3	4.3	5.5	4.6	5.4	5.3	4.3
120.	4.3	4.3	4.3	4.3	4.3	4.3	4.5	5.4	4.3	4.3	5.6	4.8	5.6	5.3	4.4
130.	4.3	4.3	4.3	4.3	4.3	4.3	4.5	5.4	4.3	4.4	5.4	4.9	5.5	5.2	4.4
140.	4.3	4.3	4.3	4.3	4.3	4.3	4.5	5.3	4.4	4.4	5.4	4.9	5.4	4.9	4.5
150.	4.3	4.3	4.3	4.3	4.3	4.3	4.5	5.2	4.4	4.5	5.3	4.7	5.4	4.7	4.7
160.	4.3	4.3	4.3	4.3	4.3	4.3	4.5	5.2	4.5	4.5	5.3	4.7	5.4	4.6	4.9
170.	4.3	4.3	4.3	4.3	4.3	4.3	4.6	5.2	4.5	4.5	5.3	4.7	5.3	4.5	5.0
180.	4.3	4.3	4.3	4.3	4.3	4.3	4.7	5.2	4.5	4.5	5.3	4.7	5.3	4.5	5.1
190.	4.3	4.3	4.3	4.3	4.3	4.3	4.8	5.1	4.5	4.5	5.2	4.8	5.3	4.5	5.1
200.	4.3	4.3	4.3	4.3	4.3	4.3	4.9	5.2	4.5	4.5	5.3	4.8	5.3	4.5	5.0
210.	4.3	4.3	4.3	4.3	4.3	4.3	5.1	5.1	4.5	4.5	5.3	4.8	5.3	4.5	5.0
220.	4.3	4.3	4.3	4.3	4.3	4.3	5.1	5.1	4.5	4.5	5.3	4.8	5.3	4.5	4.9
230.	4.3	4.3	4.3	4.3	4.3	4.3	5.2	5.1	4.5	4.5	5.3	4.8	5.3	4.5	4.8
240.	4.3	4.3	4.3	4.3	4.3	4.3	5.3	5.2	4.5	4.6	5.4	5.0	5.4	4.5	4.7
250.	4.4	4.4	4.3	4.4	4.4	4.4	5.4	5.3	4.6	4.6	5.5	5.0	5.5	4.6	4.6
260.	4.6	4.6	4.3	4.5	4.6	4.6	5.5	5.5	4.7	4.8	5.7	5.1	5.6	4.6	4.6
270.	5.0	4.9	4.4	4.7	4.9	5.1	5.6	5.6	4.6	4.7	5.8	5.0	5.7	4.5	4.6
280.	5.3	5.2	4.5	4.8	5.2	5.2	5.3	5.4	4.5	4.5	5.5	4.8	5.3	4.4	4.5
290.	5.3	5.2	4.5	4.8	5.2	5.2	4.8	4.8	4.3	4.4	4.9	4.7	4.8	4.3	4.4
300.	5.2	5.1	4.5	4.8	5.1	5.1	4.5	4.5	4.3	4.3	4.5	4.5	4.4	4.3	4.4
310.	5.2	5.2	4.5	4.7	5.1	5.1	4.3	4.5	4.3	4.3	4.4	4.6	4.3	4.3	4.4
320.	5.1	5.1	4.5	4.6	5.0	5.0	4.3	4.4	4.4	4.3	4.5	4.5	4.3	4.3	4.4
330.	5.1	5.1	4.5	4.5	5.0	5.0	4.3	4.3	4.4	4.3	4.5	4.4	4.3	4.4	4.3
340.	5.0	4.8	4.6	4.5	4.9	4.9	4.3	4.3	4.4	4.3	4.5	4.3	4.3	4.4	4.3
350.	5.1	4.9	4.5	4.5	5.0	4.8	4.3	4.3	4.4	4.3	4.3	4.3	4.3	4.4	4.3
360.	5.3	4.9	4.5	4.5	5.0	4.7	4.3	4.3	4.3	4.3	4.3	4.3	4.4	4.5	4.3
MAX	5.3	5.2	4.6	4.8	5.2	5.2	5.6	5.6	4.7	4.8	5.8	5.1	5.7	5.3	5.1
DEGR.	0	280	80	280	280	280	260	260	250	250	260	250	260	100	170

THE HIGHEST CONCENTRATION OF 5.80 PPM OCCURRED AT RECEPTOR REC11.

RECEPTOR - LINK MATRIX FOR THE ANGLE PRODUCING
THE MAXIMUM CONCENTRATION FOR EACH RECEPTOR

LINK #	*	CO/LINK (PPM) ANGLE (DEGREES) REC1 0	REC2 280	REC3 80	REC4 280	REC5 280	REC6 280	REC7 260	REC8 260	REC9 250	REC10 250	REC11 260	REC12 250	REC13 260	REC14 100	REC15 170
1	*	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0
2	*	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3	*	.0	.0	.0	.0	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0
4	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5	*	.6	.8	.0	.2	.8	.8	1.2	1.2	.3	.3	1.4	.6	1.2	.1	.2
6	*	.1	.1	.0	.0	.1	.0	.0	.1	.0	.0	.1	.1	.1	.0	.0
7	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8	*	.0	.0	.3	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14	*	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15	*	.0	.0	.0	.0	.0	.0	.0	.0	.1	.2	.0	.0	.0	.9	.5
										.0	.0	.0	.1	.0	.0	.1

CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 95221

JOB: BarnumPixlee2024BuildAM

RUN: BarnumPixlee2024BuildAM

DATE : 2/28/10
TIME : 14:16:52

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 175. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = 4.3 PPM

LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (FT) X1	Y1	X2	Y2	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. Barnum Ave EB in	.0	430.0	200.0	430.0	200.	90.	AG	432.	9.5	.0	12.0		
2. Barnum Ave EB LTR	200.0	430.0	244.9	430.0	45.	90.	AG	100.	100.0	.0	12.0	.42	2.3
3. Barnum Ave EB out	440.0	430.0	848.0	430.0	408.	90.	AG	432.	9.5	.0	12.0		
4. Barnum Ave WB in	848.0	444.0	648.0	444.0	200.	270.	AG	564.	9.5	.0	14.0		
5. Barnum Ave WB LTR	648.0	444.0	-3113.4	444.0	3761.	270.	AG	304.	100.0	.0	14.0	2.65	191.1
6. Barnum Ave WB out	394.0	442.0	.0	442.0	394.	270.	AG	564.	9.5	.0	12.0		
7. Elizabeth St NB in	430.0	.0	430.0	200.0	200.	360.	AG	52.	9.5	.0	14.0		
8. Elizabeth St NB LTR	430.0	200.0	430.0	216.5	16.	360.	AG	304.	100.0	.0	14.0	.22	.8
9. Pixlee Pl NB out	436.0	468.0	436.0	836.0	368.	360.	AG	52.	9.5	.0	12.0		
10. Pixlee Pl SB in	424.0	836.0	424.0	700.0	136.	180.	AG	6.	9.5	.0	12.0		
11. Pixlee Pl SB LTR	424.0	700.0	424.0	698.1	2.	180.	AG	304.	100.0	.0	12.0	.03	.1
12. Elizabeth St SB out	416.0	420.0	416.0	.0	420.	180.	AG	6.	9.5	.0	12.0		
13. Grant St SEB in	.0	836.0	200.0	634.0	284.	135.	AG	51.	9.5	.0	12.0		
14. Grant St SEB LTR	200.0	634.0	212.0	623.2	16.	132.	AG	304.	100.0	.0	12.0	.23	.8
15. Grant St NEB out	12.0	848.0	412.0	466.0	553.	134.	AG	51.	9.5	.0	12.0		

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	*	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
2. Barnum Ave EB LTR	*	75	19	5.0	432	1586	146.70	2	4
5. Barnum Ave WB LTR	*	75	58	5.0	564	1600	146.70	2	4
8. Elizabeth St NB LTR	*	75	58	5.0	52	1800	146.70	2	3
11. Pixlee Pl SB LTR	*	75	58	5.0	6	1644	146.70	2	3
14. Grant St SEB LTR	*	75	58	5.0	51	1692	146.70	2	3

RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (FT) X	Y	Z	*
1. EB W Midblock	*	196.0	410.0	6.0	*
2. SW Corner	*	400.0	410.0	6.0	*
3. SB S Midblock	*	400.0	200.0	6.0	*
4. NB S Midblock	*	454.0	200.0	6.0	*
5. SE Corner	*	454.0	410.0	6.0	*
6. EB E Midblock	*	648.0	410.0	6.0	*
7. WB E Midblock	*	648.0	464.0	6.0	*
8. NE Corner	*	454.0	464.0	6.0	*
9. NB N Midblock	*	454.0	640.0	6.0	*
10. SB N Midblock	*	400.0	640.0	6.0	*
11. NW Corner (btwn Barn	*	370.0	460.0	6.0	*
12. NW Corner (btwn Gran	*	400.0	500.0	6.0	*
13. WB W Midblock	*	196.0	464.0	6.0	*
14. SEB W Midblock	*	194.0	616.0	6.0	*
15. NWB W Midblock	*	224.0	670.0	6.0	*

JOB: BarnumPixlee2009ExistingAM RUN: BarnumPixlee2009ExistingAM

DATE : 2/28/10
TIME : 13:59:18

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 175. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = 4.3 PPM

LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (FT) X1	Y1	X2	Y2	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. Barnum Ave EB in	.0	430.0	200.0	430.0	200.	90.	AG	335.	13.0	.0	12.0		
2. Barnum Ave EB LTR	200.0	430.0	234.8	430.0	35.	90.	AG	137.	100.0	.0	12.0	.32	1.8
3. Barnum Ave EB out	440.0	430.0	848.0	430.0	408.	90.	AG	335.	13.0	.0	12.0		
4. Barnum Ave WB in	848.0	444.0	648.0	444.0	200.	270.	AG	446.	13.0	.0	14.0		
5. Barnum Ave WB LTR	648.0	444.0	-1887.8	444.0	2536.	270.	AG	419.	100.0	.0	14.0	2.09	128.8
6. Barnum Ave WB out	394.0	442.0	.0	442.0	394.	270.	AG	446.	13.0	.0	12.0		
7. Elizabeth St NB in	430.0	.0	430.0	200.0	200.	360.	AG	39.	13.0	.0	14.0		
8. Elizabeth St NB LTR	430.0	200.0	430.0	212.4	12.	360.	AG	419.	100.0	.0	14.0	.16	.6
9. Pixlee Pl NB out	436.0	468.0	436.0	836.0	368.	360.	AG	39.	13.0	.0	12.0		
10. Pixlee Pl SB in	424.0	836.0	424.0	700.0	136.	180.	AG	5.	13.0	.0	12.0		
11. Pixlee Pl SB LTR	424.0	700.0	424.0	698.4	2.	180.	AG	419.	100.0	.0	12.0	.02	.1
12. Elizabeth St SB out	416.0	420.0	416.0	.0	420.	180.	AG	5.	13.0	.0	12.0		
13. Grant St SEB in	.0	836.0	200.0	634.0	284.	135.	AG	40.	13.0	.0	12.0		
14. Grant St SEB LTR	200.0	634.0	209.4	625.5	13.	132.	AG	419.	100.0	.0	12.0	.18	.6
15. Grant St NEB out	12.0	848.0	412.0	466.0	553.	134.	AG	40.	13.0	.0	12.0		

DATE : 2/28/10
TIME : 13:59:18

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
2. Barnum Ave EB LTR	75	19	5.0	335	1589	202.00	2	4
5. Barnum Ave WB LTR	75	58	5.0	446	1600	202.00	2	4
8. Elizabeth St NB LTR	75	58	5.0	39	1800	202.00	2	3
11. Pixlee Pl SB LTR	75	58	5.0	5	1644	202.00	2	3
14. Grant St SEB LTR	75	58	5.0	40	1690	202.00	2	3

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. EB W Midblock	196.0	410.0	6.0
2. SW Corner	400.0	410.0	6.0
3. SB S Midblock	400.0	200.0	6.0
4. NB S Midblock	454.0	200.0	6.0
5. SE Corner	454.0	410.0	6.0
6. EB E Midblock	648.0	410.0	6.0
7. WB E Midblock	648.0	464.0	6.0
8. NE Corner	454.0	464.0	6.0
9. NB N Midblock	454.0	640.0	6.0
10. SB N Midblock	400.0	640.0	6.0
11. NW Corner (btwn Barn	370.0	460.0	6.0
12. NW Corner (btwn Gran	400.0	500.0	6.0
13. WB W Midblock	196.0	464.0	6.0
14. SEB W Midblock	194.0	616.0	6.0
15. NWB W Midblock	224.0	670.0	6.0

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	* CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15
0.	* 5.4	5.1	4.5	4.5	5.2	4.9	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.5	4.3
10.	* 5.5	5.1	4.5	4.5	5.2	4.7	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.7	4.3
20.	* 5.4	5.1	4.5	4.5	5.2	4.6	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.8	4.3
30.	* 5.5	5.1	4.5	4.5	5.2	4.5	4.3	4.3	4.3	4.3	4.3	4.3	4.3	5.0	4.3
40.	* 5.5	5.1	4.6	4.4	5.2	4.5	4.3	4.3	4.3	4.3	4.3	4.3	4.3	5.0	4.3
50.	* 5.6	5.2	4.5	4.3	5.3	4.5	4.3	4.3	4.3	4.3	4.3	4.3	4.3	5.0	4.3
60.	* 5.6	5.4	4.6	4.3	5.3	4.5	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.8	4.3
70.	* 5.6	5.3	4.7	4.3	5.3	4.5	4.3	4.4	4.3	4.3	4.3	4.3	4.3	4.8	4.3
80.	* 5.4	5.1	4.7	4.3	5.0	4.5	4.3	4.6	4.3	4.3	4.5	4.3	4.4	4.6	4.3
90.	* 4.9	4.8	4.6	4.3	4.7	4.4	4.4	5.1	4.3	4.3	4.9	4.3	4.8	4.5	4.3
100.	* 4.5	4.4	4.5	4.3	4.4	4.3	4.6	5.5	4.3	4.3	5.5	4.5	5.4	4.4	4.3
110.	* 4.4	4.3	4.4	4.3	4.3	4.3	4.6	5.7	4.3	4.3	5.9	4.7	5.8	4.4	4.3
120.	* 4.3	4.3	4.3	4.3	4.3	4.3	4.6	5.7	4.3	4.3	6.0	5.0	6.0	4.5	4.4
130.	* 4.3	4.3	4.3	4.3	4.3	4.3	4.6	5.6	4.4	4.4	6.0	5.1	6.0	4.6	4.5
140.	* 4.3	4.3	4.3	4.3	4.3	4.3	4.6	5.5	4.5	4.5	5.8	5.1	5.8	4.6	4.5
150.	* 4.3	4.3	4.3	4.3	4.3	4.3	4.6	5.5	4.5	4.6	5.7	4.9	5.7	4.6	4.5
160.	* 4.3	4.3	4.3	4.3	4.3	4.3	4.7	5.4	4.6	4.6	5.6	4.9	5.7	4.6	4.5
170.	* 4.3	4.3	4.3	4.3	4.3	4.3	4.8	5.4	4.6	4.6	5.6	4.9	5.6	4.6	4.5
180.	* 4.3	4.3	4.3	4.3	4.3	4.3	5.0	5.4	4.6	4.6	5.6	4.9	5.5	4.6	4.5
190.	* 4.3	4.3	4.3	4.3	4.3	4.3	5.1	5.4	4.6	4.6	5.6	4.9	5.5	4.6	4.6
200.	* 4.3	4.3	4.3	4.3	4.3	4.3	5.3	5.3	4.6	4.6	5.6	5.0	5.5	4.6	4.7
210.	* 4.3	4.3	4.3	4.3	4.3	4.3	5.4	5.4	4.6	4.6	5.6	5.0	5.5	4.6	4.7
220.	* 4.3	4.3	4.3	4.3	4.3	4.3	5.5	5.4	4.6	4.6	5.8	5.0	5.6	4.6	4.8
230.	* 4.3	4.3	4.3	4.3	4.3	4.3	5.6	5.5	4.6	4.6	5.9	5.1	5.8	4.6	4.7
240.	* 4.3	4.3	4.3	4.3	4.3	4.3	5.8	5.7	4.6	4.6	6.1	5.1	6.0	4.7	4.6
250.	* 4.4	4.4	4.3	4.4	4.4	4.4	6.0	6.0	4.7	4.7	6.3	5.2	6.2	4.7	4.6
260.	* 4.7	4.7	4.3	4.6	4.7	4.7	6.1	6.1	4.6	4.6	6.4	5.3	6.2	4.7	4.6
270.	* 5.3	5.3	4.4	4.8	5.3	5.3	5.7	5.8	4.5	4.5	6.0	4.9	5.8	4.5	4.4
280.	* 5.7	5.6	4.6	5.1	5.6	5.6	5.0	5.1	4.3	4.3	5.2	4.5	5.0	4.3	4.3
290.	* 5.6	5.5	4.6	5.1	5.5	5.5	4.5	4.5	4.3	4.3	4.6	4.3	4.5	4.3	4.3
300.	* 5.5	5.4	4.6	5.0	5.4	5.4	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
310.	* 5.4	5.3	4.6	4.9	5.2	5.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
320.	* 5.3	5.2	4.5	4.6	5.1	5.2	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
330.	* 5.3	5.2	4.5	4.5	5.2	5.2	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
340.	* 5.2	5.1	4.5	4.5	5.1	5.1	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
350.	* 5.3	5.1	4.5	4.5	5.2	4.9	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
360.	* 5.4	5.1	4.5	4.5	5.2	4.9	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.4	4.3
MAX	* 5.7	5.6	4.7	5.1	5.6	5.6	6.1	6.1	4.7	4.7	6.4	5.3	6.2	5.0	4.8
DEGR.	* 280	280	70	280	280	280	260	260	250	250	260	260	250	30	210

THE HIGHEST CONCENTRATION OF 6.40 PPM OCCURRED AT RECEPTOR REC11.

DATE : 2/28/10
TIME : 13:59:18

RECEPTOR - LINK MATRIX FOR THE ANGLE PRODUCING
THE MAXIMUM CONCENTRATION FOR EACH RECEPTOR

	*	CO/LINK (PPM) ANGLE (DEGREES)														
LINK #	*	REC1 280	REC2 280	REC3 70	REC4 280	REC5 280	REC6 280	REC7 260	REC8 260	REC9 250	REC10 250	REC11 260	REC12 260	REC13 250	REC14 30	REC15 210
1	*	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0
2	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3	*	.0	.0	.0	.0	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0
4	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5	*	1.2	1.2	.0	.3	1.2	1.2	1.7	1.7	.4	.4	1.9	.9	1.6	.0	.3
6	*	.1	.1	.0	.0	.1	.0	.0	.1	.0	.0	.2	.1	.2	.0	.0
7	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8	*	.0	.0	.4	.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.7	.2
															.0	.0

CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 95221

JOB: BarnumPixlee2009ExistingPM

RUN: BarnumPixlee2009ExistingPM

DATE : 2/28/10
TIME : 13:57:49

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 175. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = 4.3 PPM

LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (FT) X1	Y1	X2	Y2	*	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. Barnum Ave EB in	*	.0	430.0	200.0	430.0	*	200.	90.	AG	390.	13.0	.0	12.0		
2. Barnum Ave EB LTR	*	200.0	430.0	240.5	430.0	*	41.	90.	AG	137.	100.0	.0	12.0	.36	2.1
3. Barnum Ave EB out	*	440.0	430.0	848.0	430.0	*	408.	90.	AG	390.	13.0	.0	12.0		
4. Barnum Ave WB in	*	848.0	444.0	648.0	444.0	*	200.	270.	AG	305.	13.0	.0	14.0		
5. Barnum Ave WB LTR	*	648.0	444.0	-383.2	444.0	*	1031.	270.	AG	419.	100.0	.0	14.0	1.41	52.4
6. Barnum Ave WB out	*	394.0	442.0	.0	442.0	*	394.	270.	AG	305.	13.0	.0	12.0		
7. Elizabeth St NB in	*	430.0	.0	430.0	200.0	*	200.	360.	AG	29.	13.0	.0	14.0		
8. Elizabeth St NB LTR	*	430.0	200.0	430.0	209.2	*	9.	360.	AG	419.	100.0	.0	14.0	.12	.5
9. Pixlee Pl NB out	*	436.0	468.0	436.0	836.0	*	368.	360.	AG	29.	13.0	.0	12.0		
10. Pixlee Pl SB in	*	424.0	836.0	424.0	700.0	*	136.	180.	AG	39.	13.0	.0	12.0		
11. Pixlee Pl SB LTR	*	424.0	700.0	424.0	687.6	*	12.	180.	AG	419.	100.0	.0	12.0	.17	.6
12. Elizabeth St SB out	*	416.0	420.0	416.0	.0	*	420.	180.	AG	39.	13.0	.0	12.0		
13. Grant St SEB in	*	.0	836.0	200.0	634.0	*	284.	135.	AG	180.	13.0	.0	12.0		
14. Grant St SEB LTR	*	200.0	634.0	244.5	593.9	*	60.	132.	AG	419.	100.0	.0	12.0	.75	3.0
15. Grant St NEB out	*	12.0	848.0	412.0	466.0	*	553.	134.	AG	180.	13.0	.0	12.0		

DATE : 2/28/10
TIME : 13:57:49

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
2. Barnum Ave EB LTR	75	19	5.0	390	1666	202.00	2	4
5. Barnum Ave WB LTR	75	58	5.0	305	1633	202.00	2	4
8. Elizabeth St NB LTR	75	58	5.0	29	1778	202.00	2	3
11. Pixlee Pl SB LTR	75	58	5.0	39	1767	202.00	2	3
14. Grant St SEB LTR	75	58	5.0	180	1802	202.00	2	3

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. EB W Midblock	196.0	410.0	6.0
2. SW Corner	400.0	410.0	6.0
3. SB S Midblock	400.0	200.0	6.0
4. NB S Midblock	454.0	200.0	6.0
5. SE Corner	454.0	410.0	6.0
6. EB E Midblock	648.0	410.0	6.0
7. WB E Midblock	648.0	464.0	6.0
8. NE Corner	454.0	464.0	6.0
9. NB N Midblock	454.0	640.0	6.0
10. SB N Midblock	400.0	640.0	6.0
11. NW Corner (btwn Barn	370.0	460.0	6.0
12. NW Corner (btwn Gran	400.0	500.0	6.0
13. WB W Midblock	196.0	464.0	6.0
14. SEB W Midblock	194.0	616.0	6.0
15. NWB W Midblock	224.0	670.0	6.0

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	* CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15
0.	5.2	4.9	4.5	4.5	5.0	4.7	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.5	4.3
10.	5.1	4.9	4.5	4.5	5.0	4.7	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.6	4.3
20.	5.1	4.8	4.5	4.5	4.9	4.6	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.7	4.3
30.	5.2	4.9	4.5	4.4	5.0	4.5	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.8	4.3
40.	5.2	4.9	4.5	4.4	5.0	4.5	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.9	4.3
50.	5.3	5.0	4.6	4.3	5.1	4.5	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.9	4.3
60.	5.3	5.1	4.6	4.3	5.1	4.5	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.8	4.3
70.	5.3	5.1	4.6	4.3	5.0	4.5	4.3	4.4	4.3	4.3	4.4	4.3	4.4	4.7	4.3
80.	5.2	4.9	4.6	4.3	4.9	4.5	4.3	4.5	4.3	4.3	4.7	4.3	4.7	4.5	4.3
90.	4.7	4.7	4.6	4.3	4.6	4.4	4.4	4.9	4.3	4.3	5.2	4.4	5.2	4.4	4.3
100.	4.5	4.4	4.5	4.3	4.4	4.3	4.5	5.2	4.3	4.3	5.5	4.6	5.4	4.5	4.3
110.	4.3	4.3	4.4	4.3	4.3	4.3	4.6	5.4	4.3	4.3	5.6	4.8	5.6	4.4	4.4
120.	4.3	4.3	4.3	4.3	4.3	4.3	4.6	5.4	4.3	4.4	5.5	4.9	5.6	4.5	4.4
130.	4.3	4.3	4.3	4.3	4.3	4.3	4.6	5.3	4.4	4.4	5.4	4.8	5.4	4.5	4.5
140.	4.3	4.3	4.3	4.3	4.3	4.3	4.5	5.2	4.4	4.5	5.3	4.7	5.4	4.5	4.5
150.	4.3	4.3	4.3	4.3	4.3	4.3	4.5	5.2	4.5	4.5	5.3	4.7	5.4	4.5	4.5
160.	4.3	4.3	4.3	4.3	4.3	4.3	4.6	5.2	4.5	4.5	5.3	4.7	5.3	4.5	4.5
170.	4.3	4.3	4.3	4.3	4.3	4.3	4.7	5.2	4.5	4.5	5.3	4.7	5.3	4.5	4.5
180.	4.3	4.3	4.3	4.3	4.3	4.3	4.9	5.1	4.5	4.5	5.2	4.7	5.2	4.5	4.6
190.	4.3	4.3	4.3	4.3	4.3	4.3	4.9	5.2	4.5	4.5	5.3	4.7	5.3	4.5	4.7
200.	4.3	4.3	4.3	4.3	4.3	4.3	5.1	5.1	4.5	4.5	5.3	4.8	5.3	4.5	4.7
210.	4.3	4.3	4.3	4.3	4.3	4.3	5.1	5.1	4.5	4.5	5.3	4.8	5.3	4.5	4.7
220.	4.3	4.3	4.3	4.3	4.3	4.3	5.2	5.1	4.5	4.5	5.3	4.8	5.3	4.5	4.6
230.	4.3	4.3	4.3	4.3	4.3	4.3	5.3	5.2	4.5	4.5	5.5	4.9	5.4	4.5	4.6
240.	4.3	4.3	4.3	4.3	4.3	4.3	5.4	5.3	4.5	4.5	5.6	4.9	5.6	4.6	4.5
250.	4.4	4.4	4.3	4.4	4.4	4.4	5.5	5.5	4.6	4.6	5.8	5.0	5.6	4.6	4.5
260.	4.6	4.6	4.3	4.5	4.6	4.6	5.6	5.6	4.6	4.6	5.9	5.0	5.7	4.6	4.5
270.	5.1	5.1	4.4	4.7	5.1	5.1	5.3	5.4	4.5	4.5	5.6	4.8	5.4	4.5	4.4
280.	5.4	5.3	4.5	4.9	5.3	5.3	4.8	4.8	4.3	4.3	5.0	4.5	4.8	4.3	4.3
290.	5.3	5.2	4.5	4.9	5.2	5.2	4.4	4.4	4.3	4.3	4.5	4.3	4.4	4.3	4.3
300.	5.2	5.1	4.5	4.9	5.1	5.1	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
310.	5.2	5.1	4.5	4.8	5.0	5.1	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
320.	5.1	5.0	4.5	4.7	4.9	5.0	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
330.	5.1	5.0	4.5	4.6	5.0	5.0	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
340.	5.0	4.9	4.5	4.5	4.9	4.9	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
350.	5.1	4.9	4.5	4.5	5.0	4.8	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
360.	5.2	4.9	4.5	4.5	5.0	4.7	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.4	4.3
MAX	5.4	5.3	4.6	4.9	5.3	5.3	5.6	5.6	4.6	4.6	5.9	5.0	5.7	4.9	4.7
DEGR.	280	280	50	280	280	280	260	260	250	250	260	250	260	40	190

THE HIGHEST CONCENTRATION OF 5.90 PPM OCCURRED AT RECEPTOR REC11.

DATE : 2/28/10
TIME : 14:16:52

RECEPTOR - LINK MATRIX FOR THE ANGLE PRODUCING
THE MAXIMUM CONCENTRATION FOR EACH RECEPTOR

	*	CO/LINK (PPM) ANGLE (DEGREES)														
LINK #	*	REC1 280	REC2 280	REC3 50	REC4 280	REC5 280	REC6 280	REC7 260	REC8 260	REC9 250	REC10 250	REC11 260	REC12 250	REC13 260	REC14 40	REC15 190
1	*	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0
2	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3	*	.0	.0	.0	.0	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0
4	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5	*	.9	.9	.1	.2	.9	.9	1.2	1.2	.3	.3	1.4	.6	1.2	.0	.2
6	*	.1	.1	.0	.0	.1	.0	.0	.1	.0	.0	.2	.1	.1	.0	.0
7	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8	*	.0	.0	.2	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.6	.2
															.0	.0

CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0 Dated 95221

JOB: BarnumPixlee2024BuildPM

RUN: BarnumPixlee2024BuildPM

DATE : 2/28/10
TIME : 14:19:55

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 175. CM
U = 1.0 M/S CLAS = 4 (D) ATIM = 60. MINUTES MIXH = 1000. M AMB = 4.3 PPM

LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (FT) X1	Y1	X2	Y2	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. Barnum Ave EB in	.0	430.0	200.0	430.0	200.	90.	AG	511.	9.5	.0	12.0		
2. Barnum Ave EB LTR	200.0	430.0	253.1	430.0	53.	90.	AG	100.	100.0	.0	12.0	.47	2.7
3. Barnum Ave EB out	440.0	430.0	848.0	430.0	408.	90.	AG	511.	9.5	.0	12.0		
4. Barnum Ave WB in	848.0	444.0	648.0	444.0	200.	270.	AG	389.	9.5	.0	14.0		
5. Barnum Ave WB LTR	648.0	444.0	-1255.5	444.0	1903.	270.	AG	304.	100.0	.0	14.0	1.79	96.7
6. Barnum Ave WB out	394.0	442.0	.0	442.0	394.	270.	AG	389.	9.5	.0	12.0		
7. Elizabeth St NB in	430.0	.0	430.0	200.0	200.	360.	AG	45.	9.5	.0	14.0		
8. Elizabeth St NB LTR	430.0	200.0	430.0	214.3	14.	360.	AG	304.	100.0	.0	14.0	.19	.7
9. Pixlee Pl NB out	436.0	468.0	436.0	836.0	368.	360.	AG	45.	9.5	.0	12.0		
10. Pixlee Pl SB in	424.0	836.0	424.0	700.0	136.	180.	AG	49.	9.5	.0	12.0		
11. Pixlee Pl SB LTR	424.0	700.0	424.0	684.5	16.	180.	AG	304.	100.0	.0	12.0	.21	.8
12. Elizabeth St SB out	416.0	420.0	416.0	.0	420.	180.	AG	49.	9.5	.0	12.0		
13. Grant St SEB in	.0	836.0	200.0	634.0	284.	135.	AG	225.	9.5	.0	12.0		
14. Grant St SEB LTR	200.0	634.0	278.4	563.5	105.	132.	AG	304.	100.0	.0	12.0	.94	5.4
15. Grant St NEB out	12.0	848.0	412.0	466.0	553.	134.	AG	225.	9.5	.0	12.0		

DATE : 2/28/10
TIME : 14:19:55

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
2. Barnum Ave EB LTR	75	19	5.0	511	1665	146.70	2	4
5. Barnum Ave WB LTR	75	58	5.0	389	1633	146.70	2	4
8. Elizabeth St NB LTR	75	58	5.0	45	1786	146.70	2	3
11. Pixlee Pl SB LTR	75	58	5.0	49	1767	146.70	2	3
14. Grant St SEB LTR	75	58	5.0	225	1802	146.70	2	3

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. EB W Midblock	196.0	410.0	6.0
2. SW Corner	400.0	410.0	6.0
3. SB S Midblock	400.0	200.0	6.0
4. NB S Midblock	454.0	200.0	6.0
5. SE Corner	454.0	410.0	6.0
6. EB E Midblock	648.0	410.0	6.0
7. WB E Midblock	648.0	464.0	6.0
8. NE Corner	454.0	464.0	6.0
9. NB N Midblock	454.0	640.0	6.0
10. SB N Midblock	400.0	640.0	6.0
11. NW Corner (btwn Barn	370.0	460.0	6.0
12. NW Corner (btwn Gran	400.0	500.0	6.0
13. WB W Midblock	196.0	464.0	6.0
14. SEB W Midblock	194.0	616.0	6.0
15. NWB W Midblock	224.0	670.0	6.0

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15
0.	5.3	4.9	4.5	4.5	5.0	4.7	4.3	4.3	4.3	4.3	4.3	4.3	4.4	4.5	4.3
10.	5.3	4.9	4.5	4.5	5.0	4.6	4.3	4.3	4.3	4.4	4.3	4.3	4.5	4.6	4.3
20.	5.3	4.9	4.5	4.5	5.0	4.6	4.3	4.3	4.3	4.4	4.3	4.3	4.5	4.7	4.3
30.	5.3	4.9	4.5	4.4	5.0	4.5	4.3	4.3	4.3	4.4	4.3	4.3	4.5	4.9	4.3
40.	5.2	4.9	4.5	4.4	5.0	4.5	4.3	4.3	4.3	4.4	4.3	4.3	4.4	5.0	4.3
50.	5.3	5.0	4.5	4.3	5.1	4.5	4.3	4.3	4.3	4.4	4.3	4.3	4.4	5.0	4.3
60.	5.3	5.1	4.5	4.3	5.1	4.5	4.3	4.3	4.3	4.3	4.3	4.3	4.3	5.1	4.3
70.	5.4	5.1	4.6	4.3	5.1	4.5	4.3	4.3	4.3	4.3	4.3	4.3	4.4	5.1	4.3
80.	5.2	4.9	4.6	4.3	5.0	4.5	4.3	4.4	4.3	4.3	4.4	4.3	4.4	5.1	4.3
90.	4.7	4.7	4.6	4.3	4.6	4.4	4.4	4.5	4.3	4.3	4.7	4.3	4.7	5.1	4.3
100.	4.5	4.5	4.5	4.3	4.5	4.3	4.5	4.9	4.3	4.3	5.2	4.4	5.2	5.2	4.3
110.	4.3	4.3	4.4	4.3	4.3	4.3	4.5	5.2	4.3	4.3	5.5	4.6	5.4	5.3	4.3
120.	4.3	4.3	4.3	4.3	4.3	4.3	4.5	5.4	4.3	4.3	5.6	4.8	5.6	5.3	4.4
130.	4.3	4.3	4.3	4.3	4.3	4.3	4.5	5.4	4.3	4.4	5.4	4.9	5.5	5.2	4.4
140.	4.3	4.3	4.3	4.3	4.3	4.3	4.5	5.3	4.4	4.4	5.4	4.9	5.4	4.9	4.5
150.	4.3	4.3	4.3	4.3	4.3	4.3	4.5	5.2	4.4	4.5	5.3	4.7	5.4	4.7	4.7
160.	4.3	4.3	4.3	4.3	4.3	4.3	4.5	5.2	4.5	4.5	5.3	4.7	5.4	4.6	4.9
170.	4.3	4.3	4.3	4.3	4.3	4.3	4.6	5.2	4.5	4.5	5.3	4.7	5.3	4.5	5.0
180.	4.3	4.3	4.3	4.3	4.3	4.3	4.7	5.2	4.5	4.5	5.3	4.7	5.3	4.5	5.1
190.	4.3	4.3	4.3	4.3	4.3	4.3	4.8	5.1	4.5	4.5	5.2	4.8	5.3	4.5	5.1
200.	4.3	4.3	4.3	4.3	4.3	4.3	4.9	5.2	4.5	4.5	5.3	4.8	5.3	4.5	5.0
210.	4.3	4.3	4.3	4.3	4.3	4.3	5.1	5.1	4.5	4.5	5.3	4.8	5.3	4.5	5.0
220.	4.3	4.3	4.3	4.3	4.3	4.3	5.1	5.1	4.5	4.5	5.3	4.8	5.3	4.5	4.9
230.	4.3	4.3	4.3	4.3	4.3	4.3	5.2	5.1	4.5	4.5	5.3	5.0	5.3	4.5	4.8
240.	4.3	4.3	4.3	4.3	4.3	4.3	5.3	5.2	4.5	4.6	5.4	5.0	5.4	4.5	4.7
250.	4.4	4.4	4.3	4.4	4.4	4.4	5.5	5.5	4.7	4.8	5.7	5.1	5.6	4.6	4.6
260.	4.6	4.6	4.3	4.5	4.6	4.6	5.6	5.6	4.6	4.7	5.8	5.0	5.7	4.5	4.6
270.	5.0	5.0	4.4	4.7	5.0	5.1	5.3	5.4	4.5	4.5	5.5	4.8	5.3	4.4	4.5
280.	5.3	5.2	4.5	4.9	5.2	5.3	4.8	4.8	4.3	4.4	4.9	4.7	4.8	4.3	4.4
290.	5.3	5.2	4.5	4.9	5.2	5.2	4.5	4.5	4.3	4.3	4.5	4.5	4.4	4.3	4.4
300.	5.2	5.1	4.5	4.8	5.1	5.1	4.3	4.5	4.3	4.3	4.4	4.6	4.3	4.3	4.4
310.	5.2	5.2	4.5	4.7	5.1	5.1	4.3	4.4	4.4	4.3	4.5	4.5	4.3	4.3	4.4
320.	5.1	5.1	4.5	4.6	5.1	5.0	4.3	4.3	4.4	4.3	4.5	4.4	4.3	4.4	4.3
330.	5.1	5.1	4.5	4.5	5.0	5.0	4.3	4.3	4.4	4.3	4.5	4.3	4.3	4.4	4.3
340.	5.0	4.8	4.6	4.5	4.9	4.9	4.3	4.3	4.4	4.3	4.3	4.3	4.3	4.4	4.3
350.	5.1	4.9	4.5	4.5	5.0	4.8	4.3	4.3	4.4	4.3	4.3	4.3	4.4	4.5	4.3
360.	5.3	4.9	4.5	4.5	5.0	4.7	4.3	4.3	4.3	4.3	4.3	4.3	4.4	4.5	4.3
MAX	5.4	5.2	4.6	4.9	5.2	5.3	5.6	5.6	4.7	4.8	5.8	5.1	5.7	5.3	5.1
DEGR.	70	280	70	280	280	280	260	260	250	250	260	250	260	100	170

THE HIGHEST CONCENTRATION OF 5.80 PPM OCCURRED AT RECEPTOR REC11.

RECEPTOR - LINK MATRIX FOR THE ANGLE PRODUCING
THE MAXIMUM CONCENTRATION FOR EACH RECEPTOR

		CO/LINK (PPM) ANGLE (DEGREES)														
LINK #	*	REC1 70	REC2 280	REC3 70	REC4 280	REC5 280	REC6 280	REC7 260	REC8 260	REC9 250	REC10 250	REC11 260	REC12 250	REC13 260	REC14 100	REC15 170
1	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0
2	*	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3	*	.0	.0	.0	.0	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0
4	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5	*	.8	.8	.0	.2	.8	.9	1.2	1.2	.3	.3	1.4	.6	1.2	.1	.2
6	*	.1	.1	.0	.0	.1	.0	.0	.1	.0	.0	.1	.1	.1	.0	.0
7	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8	*	.0	.0	.3	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15	*	.0	.0	.0	.0	.0	.0	.0	.0	.1	.2	.0	.0	.0	.9	.5
										.0	.0		.1	.0	.0	.1

APPENDIX E
Noise Modeling Results

Federal Transit Adminstration
General Transit Noise Assessment
Case: GBT - Receiver N1 (2024)
Residence at western terminus of Cross Street

RESULTS

Noise Source	Ldn (dB)	Leq - daytime (dB)	Leq - nighttime (dB)
All Sources	57	52	50
Source 1	57	52	50
Source 2	22	17	15
Source 3	0	0	0

Enter noise receiver land use category below.

LAND USE CATEGORY

Noise receiver land use category (1, 2 or 3)	2

Enter data for each noise source below - see reference list for source numbers.

NOISE SOURCE PARAMETERS

Parameter	Source 1		Source 2		Source 3	
Source Num.	Bus Op. Facility	15	Parking Garage	17		
Dist. to receiver	distance (ft)	325	distance (ft)	285		
Daytime Hours (7 AM - 10 PM)	buses/hour buses serviced/hour	22 8	autos/hour	8 3		
Nighttime Hours (10 PM - 7 AM)	buses/hour buses serviced/hour	3 8	autos/hour	6		
Jointed Track?		N		N		
Embedded Track?		N		N		
Aerial Structure?		N		N		
Barrier Present?	Y/N	N	Y/N	N		
Intervening Rows of Buildings	number	0	number	0		

Federal Transit Adminstration
General Transit Noise Assessment
Case: GBT - Receiver N2 (2024)
Residence at northwest corner of Cross & Elizabeth Streets

RESULTS			
Noise Source	**Ldn (dB)**	**Leq - daytime (dB)**	**Leq - nighttime (dB)**
All Sources	56	52	49
Source 1	56	52	49
Source 2	20	14	13
Source 3	0	0	0

Enter noise receiver land use category below.

LAND USE CATEGORY	
Noise receiver land use category (1, 2 or 3)	2

Enter data for each noise source below - see reference list for source numbers.

NOISE SOURCE PARAMETERS						
Parameter	**Source 1**		**Source 2**		**Source 3**	
Source Num.	Bus Op. Facility	15	Parking Garage	17		
Dist. to receiver	distance (ft)	335	distance (ft)	350		
Daytime Hours (7 AM - 10 PM)	buses/hour buses serviced/hour	22 8	autos/hour	8 0		
Nighttime Hours (10 PM - 7 AM)	buses/hour buses serviced/hour	3 8	autos/hour	6		
Jointed Track?		N		N		
Embedded Track?		N		N		
Aerial Structure?		N		N		
Barrier Present?	Y/N	N	Y/N	N		
Intervening Rows of Buildings	number	0	number	0		

Federal Transit Adminstration
General Transit Noise Assessment
Case: GBT - Receiver N3 (2024)
Residence at northeast corner of Cross & Elizabeth Streets

RESULTS			
Noise Source	**Ldn (dB)**	**Leq - daytime (dB)**	**Leq - nighttime (dB)**
All Sources	55	50	48
Source 1	55	50	48
Source 2	16	11	10
Source 3	0	0	0

Enter noise receiver land use category below.

LAND USE CATEGORY	
Noise receiver land use category (1, 2 or 3)	2

Enter data for each noise source below - see reference list for source numbers.

NOISE SOURCE PARAMETERS						
Parameter	**Source 1**		**Source 2**		**Source 3**	
Source Num.	Bus Op. Facility	15	Parking Garage	17		
Dist. to receiver	distance (ft)	380	distance (ft)	480		
Daytime Hours (7 AM - 10 PM)	buses/hour buses serviced/hour	22 8	autos/hour	6 3		
Nighttime Hours (10 PM - 7 AM)	buses/hour buses serviced/hour	3 8	autos/hour	6		
Jointed Track?		N		N		
Embedded Track?		N		N		
Aerial Structure?		N		N		
Barrier Present?	Y/N	N	Y/N	N		
Intervening Rows of Buildings	number	0	number	0		