

**DRAFT FEDERAL CATEGORICAL EXCLUSION  
Prepared pursuant to 23 CFR 771.117(d)**

**FOR  
GREATER BRIDGEPORT TRANSIT AUTHORITY  
FACILITY EXPANSION AND IMPROVEMENT PROJECT  
BRIDGEPORT, CONNECTICUT**

**STATE PROJECT No. 0410-T077**

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**A Joint Document**

**GREATER BRIDGEPORT TRANSIT AUTHORITY**

**In Cooperation With**

**FEDERAL TRANSIT ADMINISTRATION**

**October, 2010**

**Date: October 2010**

**Grant Applicant: Greater Bridgeport Transit Authority**

**INFORMATION REQUIRED FOR PROBABLE  
CATEGORICAL EXCLUSION  
(SECTION 771.117(d))**

**\_\_\_\_\_A. DETAILED PROJECT DESCRIPTION:**

**Project Description**

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) is 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.

## **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 in Appendix A). 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 in Appendix A 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 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 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.

### Consistency with State and Regional Plans

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 and/or 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 as increased transit services and access to jobs are two strategies that are supported by local and regional development plans.

The Proposed Action is consistent with the vision, goals, and recommendations expressed in the Connecticut State Plan of Conservation and Development (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.”

**B. LOCATION (INCLUDING ADDRESS): Attach a site map or diagram, which identifies the land uses and resources on the site and the adjacent or nearby land uses and resources. This is used to determine the probability of impact on sensitive receptors (such as schools, hospitals, residences) and on protected resources.**

The Proposed Action will be constructed 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, an employee surface 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. Refer to the site location depicted on Figure 1 in Appendix A.

C. **METROPOLITAN PLANNING AND AIR QUALITY CONFORMITY**: Is the proposed project "included" in the current adopted MPO plan, either explicitly or in a grouping of projects or activities? What is the conformity status of that plan? Is the proposed project, or are appropriate phases of the project included in the TIP? What is the conformity status of the TIP?

**Monitoring**

The U.S. Environmental Protection Agency (EPA) established National Ambient Air Quality Standards (NAAQS) for six common air pollutants, called criteria pollutants, in the Clean Air Act and 1990 Clean Air Act Amendments. The criteria pollutants and their NAAQS are displayed in Table 1.

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 (SIP).

**Table 1: National Ambient Air Quality Standards**

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

<sup>1</sup> Not to be exceeded more than once per year.

<sup>2</sup> Final rule signed October 15, 2008.

<sup>3</sup> Not to be exceeded more than once per year on average over 3 years.

<sup>4</sup> To attain this standard, the 3-year average of the weighted annual mean PM<sub>2.5</sub> concentrations from single or multiple community-oriented monitors must not exceed 15 µg/m<sup>3</sup>.

<sup>5</sup> 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 µg/m<sup>3</sup> (effective December 17, 2006).

<sup>6</sup> 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).

<sup>7</sup> (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 2.

**Table 2: Project Area Air Quality Status**

| <b>Pollutant</b>  | <b>Number of Monitors in Fairfield County</b> | <b>Monitor Locations</b>   | <b>Exceedance (2008)</b> | <b>Attainment Status</b> |
|-------------------|---|--|--------------------------|--------------------------|
| CO                | 2   | Sherwood Island State Park, Westport<br>Roosevelt School, Bridgeport   | None                     | Attainment               |
| Ozone             | 4   | Greenwich Point Park, Greenwich<br>Sherwood Island State Park, Westport<br>UCG Lighthouse, Stratford<br>WCSU, Danbury      | At all monitors          | Nonattainment            |
| PM <sub>10</sub>  | 3   | 137 East Avenue, Norwalk<br>Sherwood Island State Park, Westport<br>Roosevelt School, Bridgeport                           | None                     | Attainment               |
| PM <sub>2.5</sub> | 4   | 137 East Avenue, Norwalk<br>Sherwood Island State Park, Westport<br>Roosevelt School, Bridgeport<br>WCSU, Danbury          | None                     | Nonattainment            |
| NO <sub>2</sub>   | 1   | Sherwood Island State Park, Westport   | None                     | Attainment               |
| SO <sub>2</sub>   | 4   | Greenwich Point Park, Greenwich<br>Sherwood Island State Park, Westport<br>115 Boston Terrace, Bridgeport<br>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.

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. CO is discussed in more detail in Item F below. The NAAQS for ozone is a 3-year average of the fourth highest daily recorded 8-hour concentration of 0.075 ppm.

### Ozone

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 4<sup>th</sup> 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<sub>2.5</sub>. Connecticut is required to submit a State Implementation Plan to EPA outlining measures to meet the standard by April 2010.

### Regional Impacts — Transportation Conformity

The impacts of a particular project on regional air quality are difficult to determine, particularly for small projects such as 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<sub>x</sub>, 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<sub>2.5</sub> Hot Spots** — This project is exempt from conformity requirements under Section 40 CFR Part 93.126 of the conformity rule. A project level PM<sub>2.5</sub> qualitative analysis is therefore not required.
- **PM<sub>10</sub> Control Measures** — There are no PM<sub>10</sub> 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.

**D. ZONING: Description of zoning, if applicable, and consistency with proposed use.**

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. 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.

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.

**E. TRAFFIC IMPACTS: Describe potential traffic impacts; including whether the existing roadways have adequate capacity to handle increased bus and other vehicular traffic.**

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 in Appendix A.

**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)

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). 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.

### **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, 7<sup>th</sup> 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) |      | Total |
|--------------|---------------------|------|-------|
|              | Enter               | Exit |       |
| 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). Supporting traffic data is included in Appendix C.

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

**F. CO HOT SPOTS: If there are serious traffic impacts at any affected intersection, and if the area is nonattainment for CO, demonstrate that CO hot spots will not result.**

**Carbon Monoxide Monitoring**

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 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 Connecticut Department of Environmental Protection (CTDEP) locates CO monitors throughout the state specifically to measure CO levels from high traffic areas in

populated locations. There are two CO monitors in Fairfield County, one at Sherwood Island State Park in Westport and the other at Roosevelt School in Bridgeport.

According to the EPA Region 1 *2008 Annual Report on Air Quality in New England* (July 2009) there have been no exceedances of the CO NAAQS in 2008 and thus the region is in attainment for CO. 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.

### **CO Hot Spots/Modeling**

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 4.

**Table 4: CALQVIEW2 Parameters**

| <b>Parameter</b>                | <b>Value</b>               |
|---------------------------------|----------------------------|
| 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 5 below presents the highest CO reading for each model run. Appendix D contains the CALQVIEW2 model output showing all results for each run.

**Table 5: Highest Predicted CO Results**

| Model Run   | Highest 1-hour Concentration (ppm) | Corresponding 8-hour Concentration (ppm) | Receptor Location                              |
|---|------------------------------------|--|--|
| Barnum Avenue & Pixlee PI / Grant St / Elizabeth St<br>2009 Existing AM | 6.4                                | 4.5                                      | Northwest corner between Barnum Ave / Grant St |
| Barnum Avenue & Pixlee PI / Grant St / Elizabeth St<br>2009 Existing PM | 6.2                                | 4.3                                      | Northwest corner between Barnum Ave / Grant St |
| Barnum Avenue & Pixlee PI / Grant St / Elizabeth St<br>2024 No Build AM | 5.9                                | 4.1                                      | Northwest corner between Barnum Ave / Grant St |
| Barnum Avenue & Pixlee PI / Grant St / Elizabeth St<br>2024 No Build PM | 5.8                                | 4.1                                      | Northwest corner between Barnum Ave / Grant St |
| Barnum Avenue & Pixlee PI / Grant St / Elizabeth St<br>2024 Build AM    | 5.9                                | 4.1                                      | Northwest corner between Barnum Ave / Grant St |
| Barnum Avenue & Pixlee PI / Grant St / Elizabeth St<br>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 5, 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<sub>x</sub>, and CO emissions from the transportation system are currently below those allowed by CTDEP. 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.

Overall, 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.

\_\_\_\_\_ **G. HISTORIC RESOURCES: Describe any cultural, historic, or archaeological resource that is located in the immediate vicinity of the proposed project and the impact of the project on the resource.**

Correspondence received from the CT SHPO dated January 12, 2010, states that the Proposed Action will have “no effect” on historic, architectural, or archaeological resources listed on or eligible for the NRHP. This correspondence has been included in Appendix B.

\_\_\_\_\_ **H. NOISE: Compare the distance between the center of the proposed project and the nearest noise receptor to the screening distance for this type of project in FTA's guidelines. If the screening distance is not achieved, attach a "General Noise Assessment" with conclusions.**

Land uses within 350 unobstructed feet (and 225 feet with intervening buildings) of the Proposed Action site are considered to be noise-sensitive. These noise screening distances 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 (FTA-VA-90-103-06, May 2006).

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 in Appendix A). 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.

Because there are noise sensitive receivers within the established FTA screening distance, an FTA General Noise Assessment was conducted for the Proposed Action. The noise assessment, conclusions, and associated FTANOISE spreadsheet output files are included in Appendix E.

\_\_\_\_\_ **I. VIBRATION: If the proposed project involves new or relocated steel tracks, compare the distance between the center of the proposed project and the nearest vibration receptor to the screening distance for this type of project in FTA's guidelines. If the screening distance is not achieved, attach a "General Vibration Assessment" with conclusions.**

Not applicable to the Proposed Action.

**J. ACQUISITIONS & RELOCATIONS REQUIRED: Describe land acquisitions and displacements of residences and businesses.**

No land acquisitions and/or displacements of residences and business will be required for this project.

**K. HAZARDOUS MATERIALS: If real property is to be acquired, has a Phase I site assessment for contaminated soil and groundwater been performed? If a Phase II site assessment is recommended, has it been performed? What steps will be taken to ensure that the community in which the project is located is protected from contamination during construction and operation of the project? State the results of consultation with the cognizant State agency regarding the proposed remediation?**

No land acquisitions will be required for this project. To date, a formal Phase 1 Environmental Site Assessment has not been performed for the existing GBT site.

Construction may require the removal of the five (5) underground storage tanks (USTs) on the GBT site. If any of these tanks are removed, the GBT will follow the procedures outlined in the National Fire Protection Association (NFPA 30, Appendix B). Individual soil samples will be obtained from the underlying native soil. If contaminated soil or ground water is observed at the site or detected by sampling analysis, the Connecticut Department of Environmental Protection (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 Connecticut Department of Public Health (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, 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 U.S. Environmental Protection Agency (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.

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.

- \_\_\_\_\_ L.      **COMMUNITY DISRUPTION AND ENVIRONMENTAL JUSTICE:**  
**Provide a socio-economic profile of the affected community. Describe the impacts of the proposed project on the community. Identify any community resources that would be affected and the nature of the effect.**

#### 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; 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 6 presents an economic profile for the City of Bridgeport.

Table 6: 2009 Economic Profile for Bridgeport, CT

|                                     | <b>Bridgeport</b> |
|-------------------------------------|-------------------|
| 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 6, 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 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 7 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 employment rate of 9.8%, and the national unemployment rate of 9.7% (seasonally adjusted).

**Table 7: Comparison of Census 2000 Employment and Income Data**

|                                  | Study Area* | Bridgeport | GBRPA<br>Region | Fairfield<br>County | State of CT |
|----------------------------------|-------------|------------|-----------------|---------------------|-------------|
| <b>Household Characteristics</b> |             |            |                 |                     |             |
| 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%      |
| <b>Income/Poverty</b>            |             |            |                 |                     |             |
| 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%       |
| <b>Employment Status</b>         |             |            |                 |                     |             |
| 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 has been remediated, and this site, formerly a scrap yard, is now a 75,000 to 100,000 square foot 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 6 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 8 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 8: Comparison of Census 2000 Demographic Data**

|                             | Study Area | Bridgeport | GBRPA<br>Region | Fairfield<br>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 8, 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

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

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 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 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 will include dark sky compliant light fixtures which reduce night sky light pollution. A LEED rating of Silver will be pursued for this facility. Overall, the new and expanded facility will improve upon what is already considered an asset for the City of Bridgeport and will become an example for other maintenance facility designs.

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 para-transit 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](http://www.gbt-feip.com). This website provides a description of the project, benefits (i.e., economic, environmental) to the community from the project, project costs, and contact information for those with questions or wishing for more information.

### M. USE OF PUBLIC PARKLAND AND RECREATION AREAS:

There are no public parklands or recreation areas within the project study area or within the footprint of the Proposed Action site. Therefore, the Proposed Action will not have any direct or indirect impacts to Section 4(f) or Section 6(f) properties.

\_\_\_\_N. **IMPACTS ON WETLANDS AND WATERCOURSES:** Show potential wetlands on the site map. Describe the project's impact on on-site and adjacent wetlands.

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

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, which ultimately discharges to Long Island Sound.

\_\_\_\_O. **FLOODPLAIN IMPACTS:** Is the proposed project located within the 100-year floodplain? If so, address possible flooding of the proposed project site and flooding induced by proposed project due to its taking of floodplain capacity.

The footprint of the Proposed Action does not contain floodways or 100-year floodplains. Thus, construction of the Proposed Action would not directly affect floodways or floodplains. The Proposed Action would not result in an increase in impervious surface; therefore, downstream flooding will not 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.

\_\_\_\_P. **IMPACTS ON WATER QUALITY, NAVIGABLE WATERWAYS, & COASTAL ZONES:** If any of these are implicated, provide detailed analysis.

Surface Water

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 is then 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, the Proposed Action would not increase the amount of impervious surface at the site. Although it takes approximately two years for the plants to become established, 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.

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. 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.

#### Groundwater

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

\_\_\_\_\_ **Q. IMPACTS ON ECOLOGICALLY-SENSITIVE AREAS AND ENDANGERED SPECIES: Describe any natural areas (woodlands, prairies, wetlands, rivers, lakes, streams, designated wildlife or waterfowl refuges, and geological formations) on or near the proposed project area. If present, state the results of consultation with the state department of natural resources on the impacts to these natural areas and on threatened and endangered fauna and flora that may be affected.**

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.

\_\_\_\_\_ **R. IMPACTS ON SAFETY AND SECURITY: Describe the measures that would need to be taken to provide for the safe and secure operation of the project after its construction.**

The Proposed Action will incorporate safety and security features by design. Currently there is a chain-link fence 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 effective 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 sustainable design techniques and features will allow GBT to construct a state-of-the-art facility that will benefit the indoor and outdoor environments. Therefore, no adverse impacts to public safety or security will occur as a result of the Proposed Action.

\_\_\_\_ S.            **IMPACTS CAUSED BY CONSTRUCTION:** Describe the construction plan and identify impacts due to construction noise, utility disruption, debris and spoil disposal, air and water quality, safety and security, and disruptions of traffic and access to property.

### **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 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.

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 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:* Truck traffic and noise 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 residences.

*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.

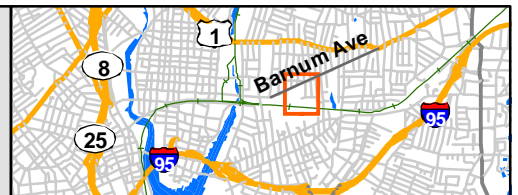
*Public Utilities and Services:* There may be temporary, construction period utility disruptions.

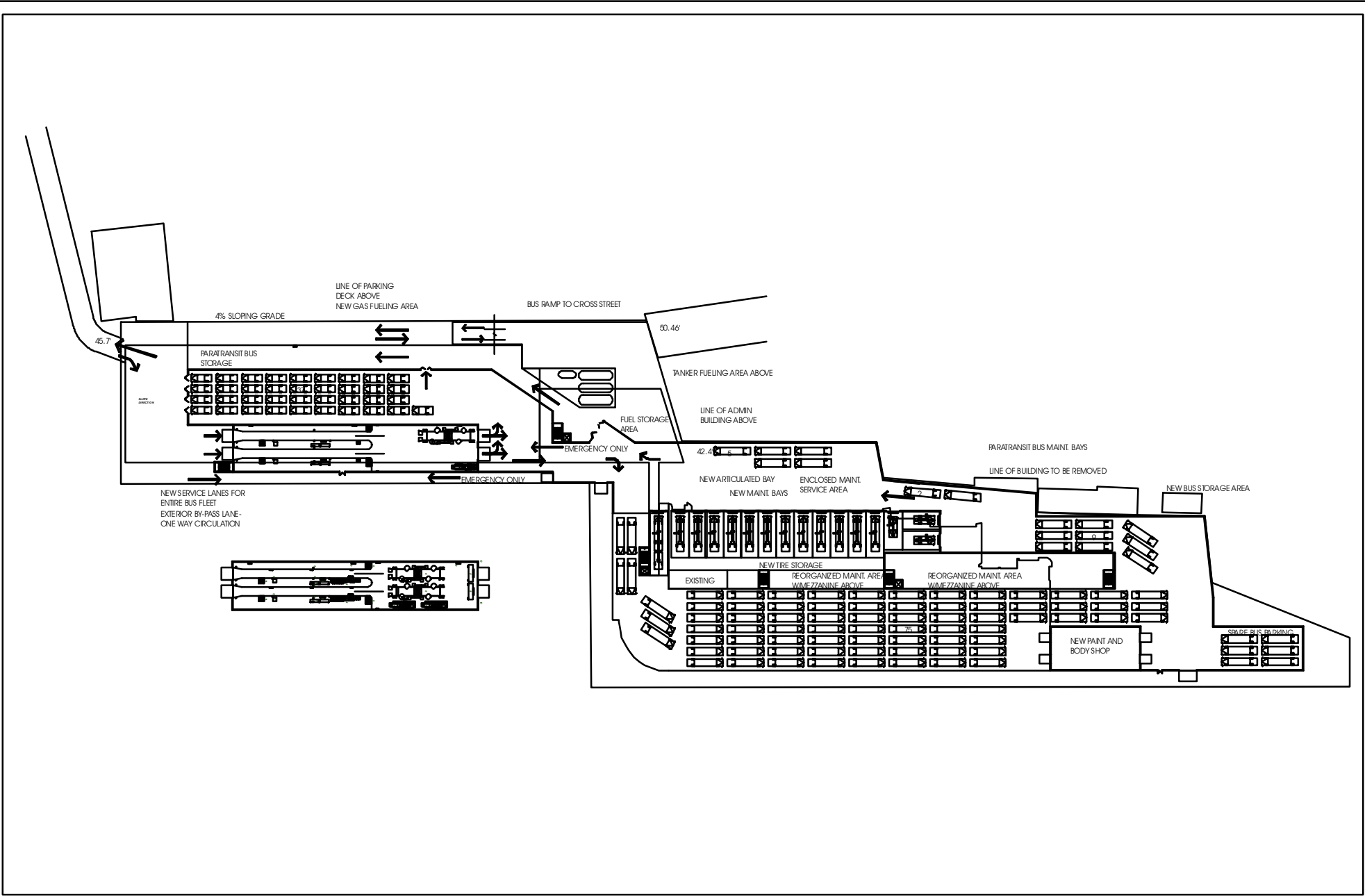
*Energy Use and Conservation:* Project construction will result in an increased local demand for fossil fuels (mainly diesel fuel for construction equipment) and an increased demand for electricity.

## **APPENDIX A - FIGURES**



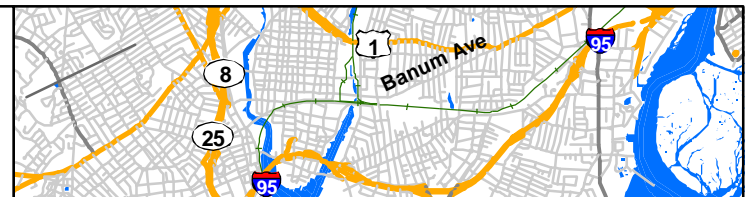
**Figure 1: Site Location -  
Proposed Greater Bridgeport Transit  
Authority Maintenance/Operations  
Facility Site**





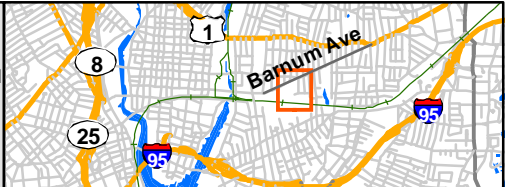
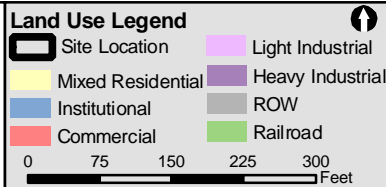
**Figure 2: Proposed Action - Greater Bridgeport Transit Authority Maintenance/Operations Facility**

**Legend**  
 — Proposed Action



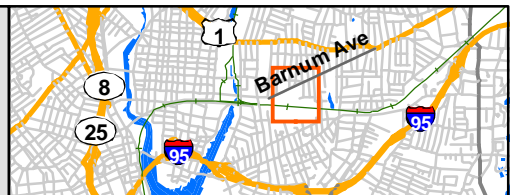
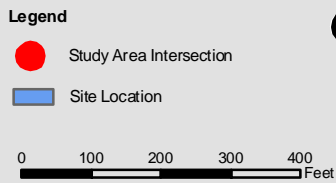


**Figure 3: Existing Land Use - Proposed Greater Bridgeport Transit Authority Maintenance/Operations Facility Site**



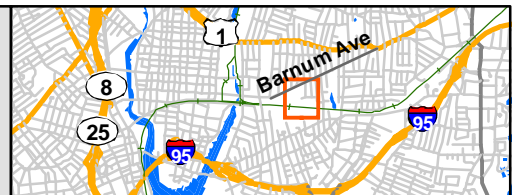
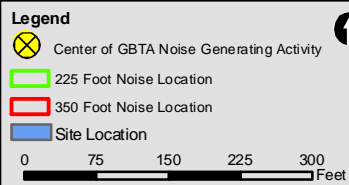


**Figure 4: - Traffic Study Area  
Near the Proposed Greater Bridgeport  
Transit Authority Maintenance/  
Operations Facility Site**





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



**APPENDIX B – NOTEWORTHY CORRESPONDENCE**



Connecticut Commission on Culture & Tourism

January 12, 2010

Historic Preservation  
and Museum Division

One Constitution Plaza  
Second Floor  
Hartford, Connecticut  
06103

860.256.2800  
860.256.2763 (f)

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 and 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.

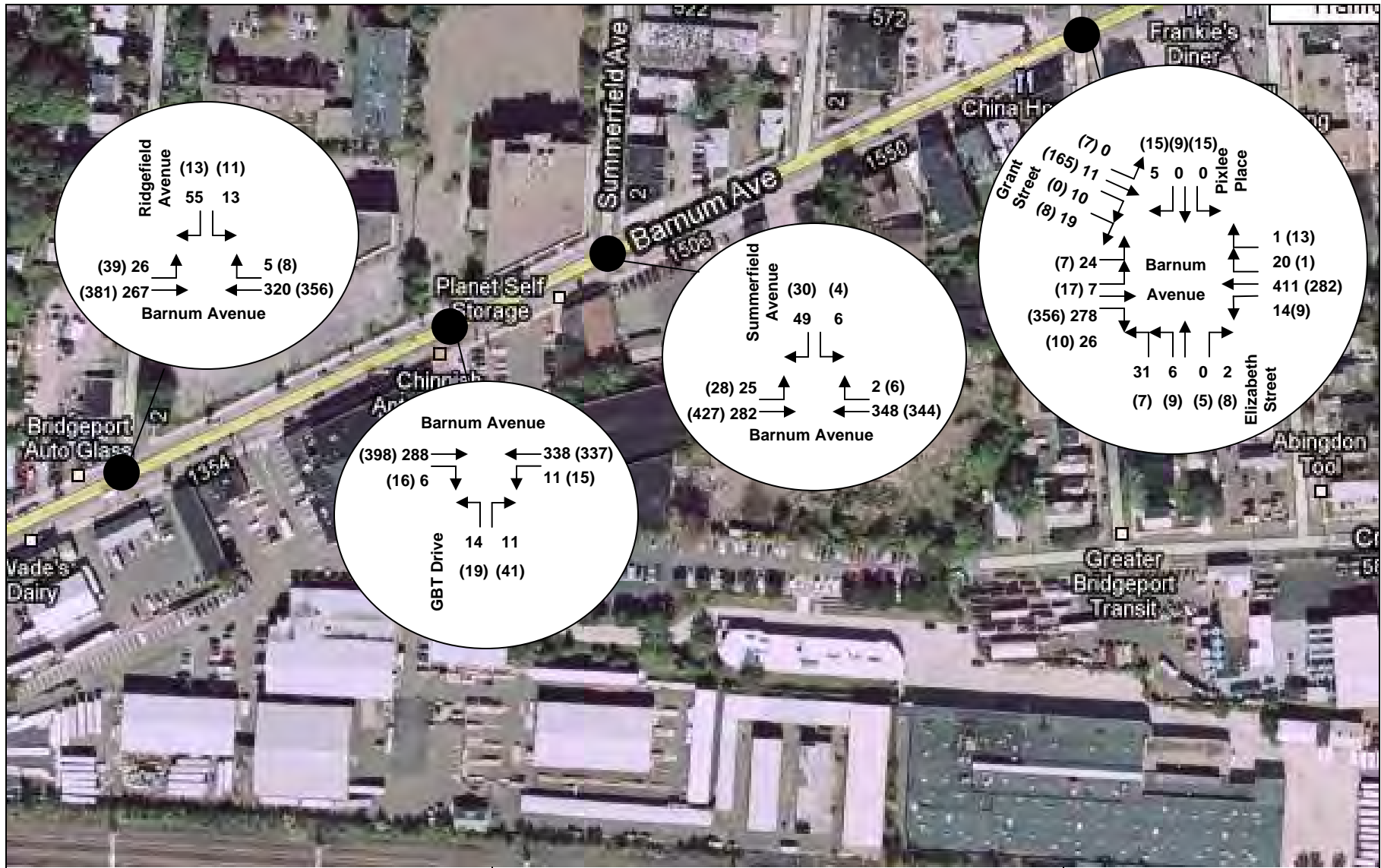
This comment is provided in accordance with the National Historic Preservation Act and the Connecticut Environmental Policy Act.

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

Sincerely,

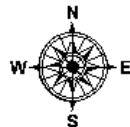
David Bahlman  
Deputy State Historic Preservation Officer

## **APPENDIX C – SUPPORTING TRAFFIC DATA**



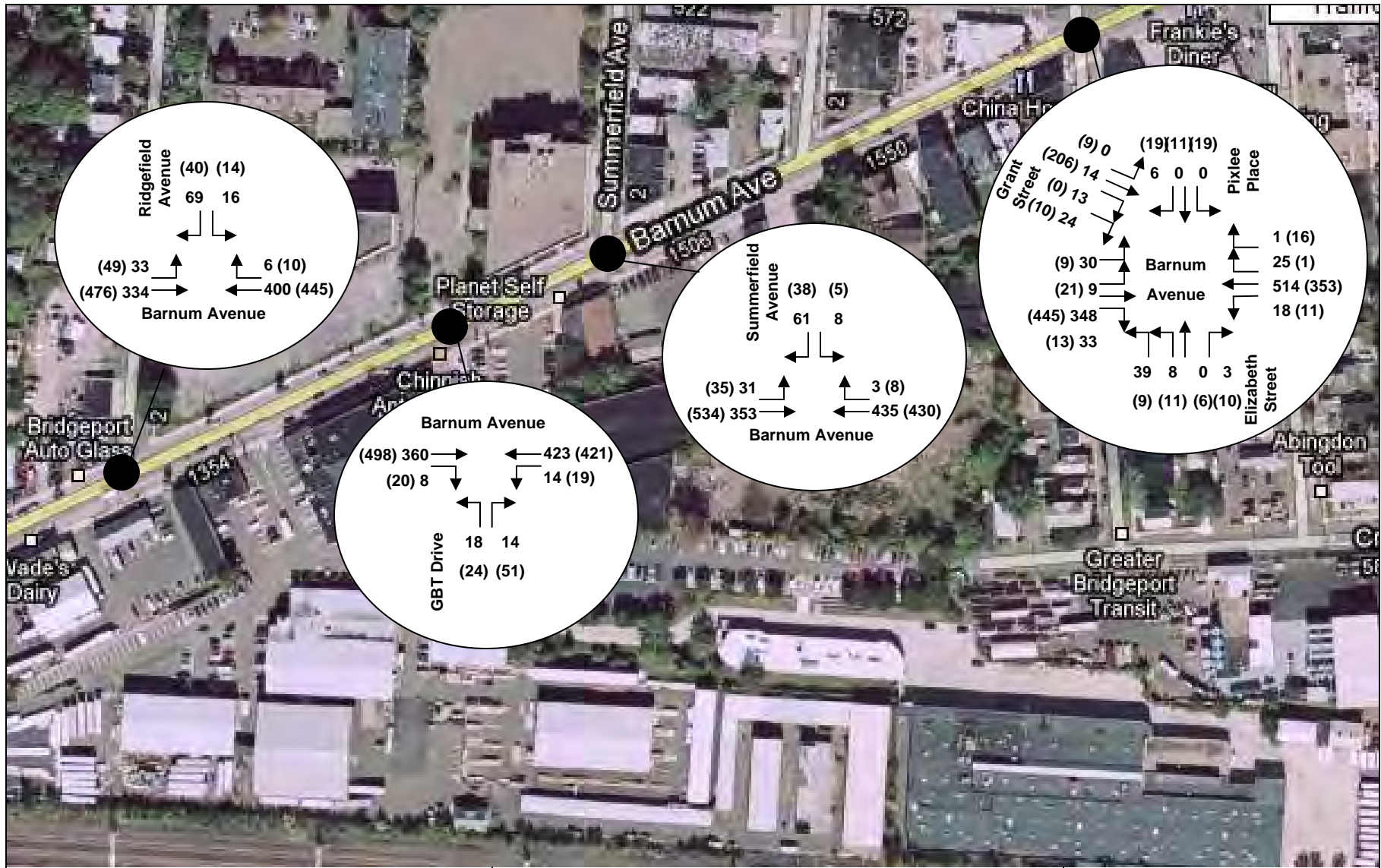
**GREATER BRIDGEPORT TRANSIT AUTHORITY  
FACILITY EXPANSION AND IMPROVEMENT  
BRIDGEPORT, CONNECTICUT**

State Project No. 0410-T077



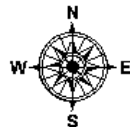
XX AM Peak Hour  
(XX) PM Peak Hour

**Existing Condition (2010)  
Peak Hourly Traffic  
Volumes**



**GREATER BRIDGEPORT TRANSIT AUTHORITY  
FACILITY EXPANSION AND IMPROVEMENT  
BRIDGEPORT, CONNECTICUT**

State Project No. 0410-T077

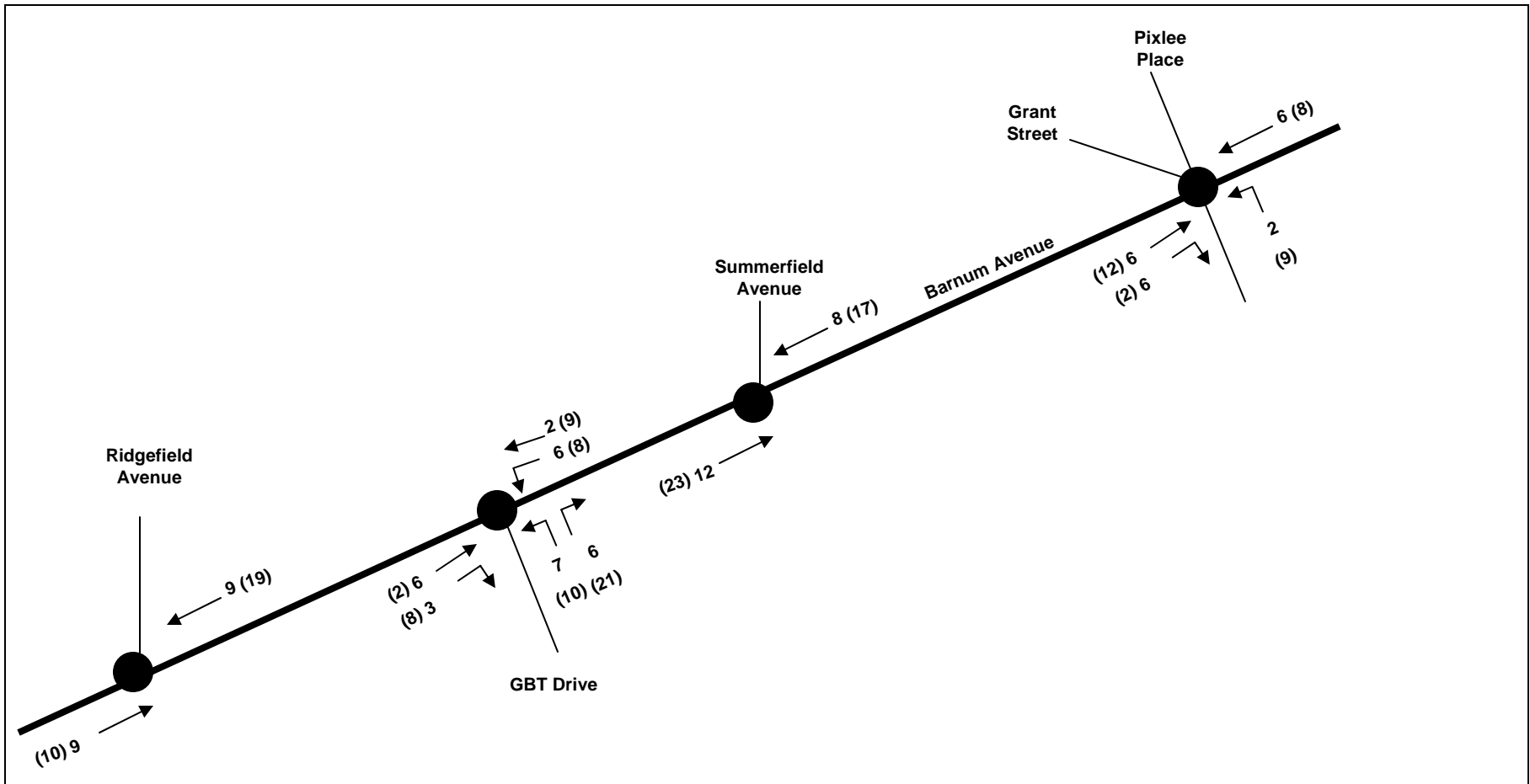


XX AM Peak Hour

(XX) PM Peak Hour

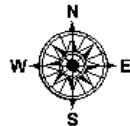
**No-Action Alternative  
Condition (2024)**

**Peak Hourly Traffic  
Volumes**



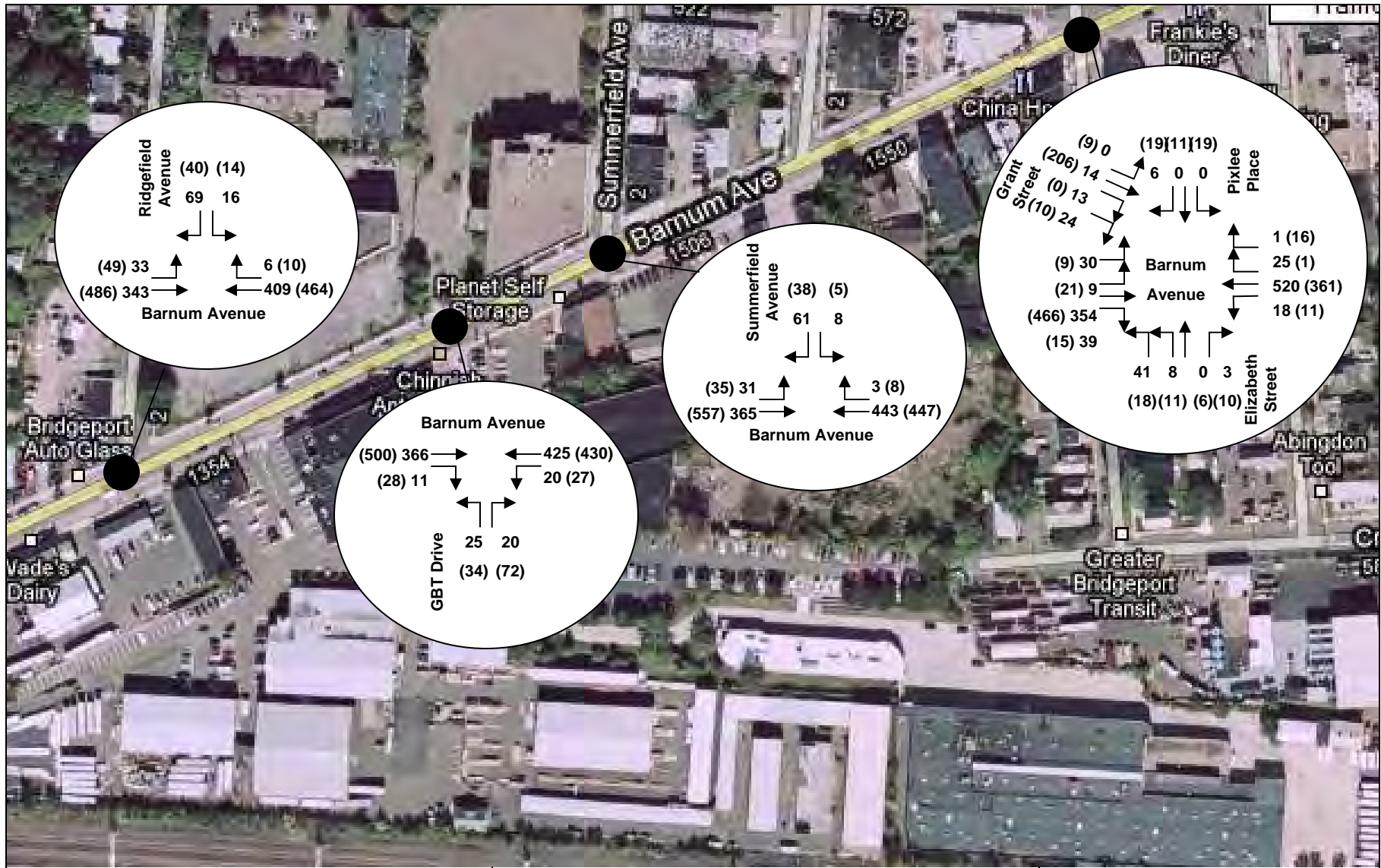
**GREATER BRIDGEPORT TRANSIT AUTHORITY  
 FACILITY EXPANSION AND IMPROVEMENT  
 BRIDGEPORT, CONNECTICUT**

**State Project No. 0410-T077**



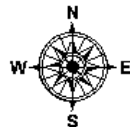
XX AM Peak Hour  
 (XX) PM Peak Hour

**Site Generated  
 Peak Hourly Traffic Volumes**



**GREATER BRIDGEPORT TRANSIT AUTHORITY  
FACILITY EXPANSION AND IMPROVEMENT  
BRIDGEPORT, CONNECTICUT**

State Project No. 0410-T077



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)**

| Intersection   | Existing Condition 2010 |              | No-Action Condition 2024 |              | Proposed Action Condition 2024 |              |
|--|-------------------------|--------------|--------------------------|--------------|--------------------------------|--------------|
|  | 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<br><i>(signalized)</i> | B                       | C            | B                        | C            | B                              | C            |
| Barnum Avenue at Summerfield Avenue<br><i>(stop-controlled)</i>                    |                         |              |                          |              |                                |              |
| Eastbound Left   | A                       | A            | A                        | A            | A                              | A            |
| Southbound Left  | B                       | B            | B                        | B            | B                              | B            |
| Barnum Avenue at GBT Site Drive<br><i>(stop-controlled)</i>                        |                         |              |                          |              |                                |              |
| Westbound Left   | A                       | A            | A                        | A            | A                              | A            |
| Northbound Left  | B                       | B            | C                        | C            | C                              | C            |
| Barnum Avenue at Ridgefield Avenue<br><i>(stop-controlled)</i>                     |                         |              |                          |              |                                |              |
| 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 INPUT AND OUTPUT  
FILES**

## 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 03 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 03 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 03 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 03 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 03 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 03 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 Sul fur Content: 30. ppm

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

| Vehi cle Type:                      | LDGV   | LDGT12 | LDGT34 | LDGT  | HDGV   | LDDV   | LDDT   | HDDV   | MC     | All Veh |
|-------------------------------------|--------|--------|--------|-------|--------|--------|--------|--------|--------|---------|
| GVWR:                               |        | <6000  | >6000  | (All) |        |        |        |        |        |         |
| VMT Di stri bution:                 | 0.3818 | 0.3918 | 0.1336 |       | 0.0264 | 0.0003 | 0.0020 | 0.0633 | 0.0007 | 1.0000  |
| -----                               |        |        |        |       |        |        |        |        |        |         |
| Composi te Emission Factors (g/mi): |        |        |        |       |        |        |        |        |        |         |
| Composi te VOC :                    | 0.459  | 0.408  | 0.645  | 0.468 | 0.498  | 0.156  | 0.272  | 0.309  | 3.66   | 0.457   |
| Composi te CO :                     | 13.97  | 14.15  | 16.66  | 14.78 | 8.82   | 0.821  | 0.519  | 1.691  | 16.85  | 13.455  |
| Composi te 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: CTIMO5.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 03 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 Sul fur 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) |      |      |      |      |    |         |



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:                  | 0.3818 | 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   |
| -----                              |        |        |        |       |        |        |        |        |        |         |

## **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

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

LINK VARIABLES

| LINK DESCRIPTION        | * X1  | Y1    | X2      | Y2    | * LENGTH (FT) | BRG TYPE (DEG) | 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       | *<br>*<br>*<br>* | CYCLE<br>LENGTH<br>(SEC) | RED<br>TIME<br>(SEC) | CLEARANCE<br>LOST TIME<br>(SEC) | APPROACH<br>VOL<br>(VPH) | SATURATION<br>FLOW RATE<br>(VPH) | IDLE<br>EM FAC<br>(gm/hr) | SIGNAL<br>TYPE | ARRIVAL<br>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               |

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 RECEPTOR LOCATIONS

| RECEPTOR                 | *<br>*<br>* | COORDINATES (FT) |       |     | *<br>*<br>* |
|--------------------------|-------------|------------------|-------|-----|-------------|
|                          |             | X                | Y     | Z   |             |
| 1. EB W Mi dblock        | *           | 196.0            | 410.0 | 6.0 | *           |
| 2. SW Corner             | *           | 400.0            | 410.0 | 6.0 | *           |
| 3. SB S Mi dblock        | *           | 400.0            | 200.0 | 6.0 | *           |
| 4. NB S Mi dblock        | *           | 454.0            | 200.0 | 6.0 | *           |
| 5. SE Corner             | *           | 454.0            | 410.0 | 6.0 | *           |
| 6. EB E Mi dblock        | *           | 648.0            | 410.0 | 6.0 | *           |
| 7. WB E Mi dblock        | *           | 648.0            | 464.0 | 6.0 | *           |
| 8. NE Corner             | *           | 454.0            | 464.0 | 6.0 | *           |
| 9. NB N Mi dblock        | *           | 454.0            | 640.0 | 6.0 | *           |
| 10. SB N Mi dblock       | *           | 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 Mi dblock       | *           | 196.0            | 464.0 | 6.0 | *           |
| 14. SEB W Mi dblock      | *           | 194.0            | 616.0 | 6.0 | *           |
| 15. NWB W Mi dblock      | *           | 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 \* CONCENTRATION

ANGLE \* (PPM)

(DEGR) \* REC1 REC2 REC3 REC4 REC5 REC6 REC7 REC8 REC9 REC10 REC11 REC12 REC13 REC14 REC15

| ANGLE (DEGR) | 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   | 4.4   | 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   | 4.5   | 4.3   |
| MAX DEGR.    | 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   |
|              | 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.



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

LINK VARIABLES

| LINK DESCRIPTION        | * | X1    | Y1    | X2     | Y2    | * | LENGTH (FT) | BRG TYPE (DEG) | 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       | *<br>*<br>*<br>* | CYCLE<br>LENGTH<br>(SEC) | RED<br>TIME<br>(SEC) | CLEARANCE<br>LOST TIME<br>(SEC) | APPROACH<br>VOL<br>(VPH) | SATURATION<br>FLOW RATE<br>(VPH) | IDLE<br>EM FAC<br>(gm/hr) | SIGNAL<br>TYPE | ARRIVAL<br>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. Pilee 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                 | *<br>*<br>* | COORDINATES (FT) |       |     | *<br>*<br>* |
|--------------------------|-------------|------------------|-------|-----|-------------|
|                          |             | X                | Y     | Z   |             |
| 1. EB W Mi dblock        | *           | 196.0            | 410.0 | 6.0 | *           |
| 2. SW Corner             | *           | 400.0            | 410.0 | 6.0 | *           |
| 3. SB S Mi dblock        | *           | 400.0            | 200.0 | 6.0 | *           |
| 4. NB S Mi dblock        | *           | 454.0            | 200.0 | 6.0 | *           |
| 5. SE Corner             | *           | 454.0            | 410.0 | 6.0 | *           |
| 6. EB E Mi dblock        | *           | 648.0            | 410.0 | 6.0 | *           |
| 7. WB E Mi dblock        | *           | 648.0            | 464.0 | 6.0 | *           |
| 8. NE Corner             | *           | 454.0            | 464.0 | 6.0 | *           |
| 9. NB N Mi dblock        | *           | 454.0            | 640.0 | 6.0 | *           |
| 10. SB N Mi dblock       | *           | 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 Mi dblock       | *           | 196.0            | 464.0 | 6.0 | *           |
| 14. SEB W Mi dblock      | *           | 194.0            | 616.0 | 6.0 | *           |
| 15. NWB W Mi dblock      | *           | 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 \* CONCENTRATION

ANGLE \* (PPM)

(DEGR) \* REC1 REC2 REC3 REC4 REC5 REC6 REC7 REC8 REC9 REC10 REC11 REC12 REC13 REC14 REC15

| ANGLE (DEGR) | 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   | 4.3   | 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   | 4.3   | 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 DEGR.    | 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   |
|              | 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

| LINK # | CO/LINK (PPM) |             | ANGLE (DEGREES) |             |             |             |             |             |             |              |              |              |              |              |              |    |
|--------|---------------|-------------|-----------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|--------------|--------------|--------------|--------------|--------------|----|
|        | REC1<br>60    | REC2<br>280 | REC3<br>70      | REC4<br>290 | REC5<br>280 | REC6<br>290 | REC7<br>260 | REC8<br>250 | REC9<br>250 | REC10<br>250 | REC11<br>260 | REC12<br>250 | REC13<br>250 | REC14<br>100 | REC15<br>180 |    |
| 1      | .0            | .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           | .0 |
| 3      | .0            | .0          | .0              | .0          | .0          | .2          | .1          | .0          | .0          | .0           | .0           | .0           | .0           | .0           | .0           | .0 |
| 4      | .0            | .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           | .1           | .2 |
| 6      | .1            | .1          | .0              | .0          | .1          | .0          | .0          | .1          | .0          | .0           | .1           | .1           | .1           | .0           | .0           | .0 |
| 7      | .0            | .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           | .0 |
| 9      | .0            | .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           | .0 |
| 11     | .0            | .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           | .0 |
| 13     | .0            | .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          | .1           | .0           | .0           | .0           | 1.1          | .0           | .6 |
| 15     | .0            | .0          | .0              | .0          | .0          | .0          | .0          | .0          | .0          | .0           | .0           | .1           | .0           | .0           | .0           | .1 |

JOB: BarnumPixel2024NoBuidAM

RUN: BarnumPixel2024NoBuidAM

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      ZO = 175. CM  
 U = 1.0 M/S      CLAS = 4 (D)      ATIM = 60. MINUTES      MI XH = 1000. M      AMB = 4.3 PPM

LINK VARIABLES

| LINK DESCRIPTION        | * X1  | LINK COORDINATES (FT)<br>Y1 | X2      | Y2    | * LENGTH (FT) | BRG TYPE (DEG) | 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   |      |             |

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

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 ADDITIONAL QUEUE LINK PARAMETERS

| LINK DESCRIPTION       | *<br>*<br>*<br>* | CYCLE<br>LENGTH<br>(SEC) | RED<br>TIME<br>(SEC) | CLEARANCE<br>LOST TIME<br>(SEC) | APPROACH<br>VOL<br>(VPH) | SATURATION<br>FLOW RATE<br>(VPH) | IDLE<br>EM FAC<br>(gm/hr) | SIGNAL<br>TYPE | ARRIVAL<br>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               |

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 RECEPTOR LOCATIONS

| RECEPTOR                 | *<br>*<br>*<br>* | COORDINATES (FT) |       |     | *<br>*<br>*<br>* |
|--------------------------|------------------|------------------|-------|-----|------------------|
|                          |                  | X                | Y     | Z   |                  |
| 1. EB W Mi dblock        | *                | 196.0            | 410.0 | 6.0 | *                |
| 2. SW Corner             | *                | 400.0            | 410.0 | 6.0 | *                |
| 3. SB S Mi dblock        | *                | 400.0            | 200.0 | 6.0 | *                |
| 4. NB S Mi dblock        | *                | 454.0            | 200.0 | 6.0 | *                |
| 5. SE Corner             | *                | 454.0            | 410.0 | 6.0 | *                |
| 6. EB E Mi dblock        | *                | 648.0            | 410.0 | 6.0 | *                |
| 7. WB E Mi dblock        | *                | 648.0            | 464.0 | 6.0 | *                |
| 8. NE Corner             | *                | 454.0            | 464.0 | 6.0 | *                |
| 9. NB N Mi dblock        | *                | 454.0            | 640.0 | 6.0 | *                |
| 10. SB N Mi dblock       | *                | 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 Mi dblock       | *                | 196.0            | 464.0 | 6.0 | *                |
| 14. SEB W Mi dblock      | *                | 194.0            | 616.0 | 6.0 | *                |
| 15. NWB W Mi dblock      | *                | 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 \* CONCENTRATION

ANGLE \* (PPM)

(DEGR) \* REC1 REC2 REC3 REC4 REC5 REC6 REC7 REC8 REC9 REC10 REC11 REC12 REC13 REC14 REC15

| ANGLE (DEGR) | 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   | 5.3   | 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   | 4.6   |
| 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   | 4.7   |
| 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   | 5.5   | 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   | 4.4   | 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   | 4.5   | 4.3   |
| MAX DEGR.    | 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   |
|              | 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.



JOB: BarnumPixel2024NoBuidPM

RUN: BarnumPixel2024NoBuidPM

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

LINK VARIABLES

| LINK DESCRIPTION        | * | X1    | Y1    | X2      | Y2    | * | LENGTH (FT) | BRG TYPE (DEG) | 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

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 ADDITIONAL QUEUE LINK PARAMETERS

| LINK DESCRIPTION       | *<br>*<br>*<br>* | CYCLE<br>LENGTH<br>(SEC) | RED<br>TIME<br>(SEC) | CLEARANCE<br>LOST TIME<br>(SEC) | APPROACH<br>VOL<br>(VPH) | SATURATION<br>FLOW RATE<br>(VPH) | IDLE<br>EM FAC<br>(gm/hr) | SIGNAL<br>TYPE | ARRIVAL<br>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               |

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 RECEPTOR LOCATIONS

| RECEPTOR                 | *<br>*<br>* | COORDINATES (FT) |       |     | *<br>*<br>* |
|--------------------------|-------------|------------------|-------|-----|-------------|
|                          |             | X                | Y     | Z   |             |
| 1. EB W Mi dblock        | *           | 196.0            | 410.0 | 6.0 | *           |
| 2. SW Corner             | *           | 400.0            | 410.0 | 6.0 | *           |
| 3. SB S Mi dblock        | *           | 400.0            | 200.0 | 6.0 | *           |
| 4. NB S Mi dblock        | *           | 454.0            | 200.0 | 6.0 | *           |
| 5. SE Corner             | *           | 454.0            | 410.0 | 6.0 | *           |
| 6. EB E Mi dblock        | *           | 648.0            | 410.0 | 6.0 | *           |
| 7. WB E Mi dblock        | *           | 648.0            | 464.0 | 6.0 | *           |
| 8. NE Corner             | *           | 454.0            | 464.0 | 6.0 | *           |
| 9. NB N Mi dblock        | *           | 454.0            | 640.0 | 6.0 | *           |
| 10. SB N Mi dblock       | *           | 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 Mi dblock       | *           | 196.0            | 464.0 | 6.0 | *           |
| 14. SEB W Mi dblock      | *           | 194.0            | 616.0 | 6.0 | *           |
| 15. NWB W Mi dblock      | *           | 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 \* CONCENTRATION

ANGLE \* (PPM)

(DEGR) \* REC1 REC2 REC3 REC4 REC5 REC6 REC7 REC8 REC9 REC10 REC11 REC12 REC13 REC14 REC15

| ANGLE (DEGR) | 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  | 4.3   | 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.          | 5.3  | 5.1  | 4.5  | 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  | 4.9  | 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  | 4.5  | 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  | 4.4  | 4.5  | 4.3  | 4.4  | 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  | 4.3  | 4.5  | 5.4  | 4.3   | 4.3   | 5.6   | 4.8   | 5.6   | 4.4   |
| 120.         | 4.3  | 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   | 4.4   |
| 130.         | 4.3  | 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   | 4.5   |
| 140.         | 4.3  | 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   |
| 150.         | 4.3  | 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   | 4.9   |
| 160.         | 4.3  | 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   | 5.0   |
| 170.         | 4.3  | 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   | 5.1   |
| 180.         | 4.3  | 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   | 5.1   |
| 190.         | 4.3  | 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   | 5.0   |
| 200.         | 4.3  | 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   | 5.0   |
| 210.         | 4.3  | 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   | 4.9   |
| 220.         | 4.3  | 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   | 4.8   |
| 230.         | 4.3  | 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   | 4.7   |
| 240.         | 4.3  | 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   |
| 250.         | 4.4  | 4.4  | 4.3  | 4.4  | 4.4  | 4.4  | 4.4  | 5.5  | 5.5  | 4.7   | 4.8   | 5.7   | 5.1   | 5.6   | 4.6   |
| 260.         | 4.6  | 4.6  | 4.3  | 4.5  | 4.6  | 4.6  | 4.6  | 5.6  | 5.6  | 4.6   | 4.7   | 5.8   | 5.0   | 5.7   | 4.6   |
| 270.         | 5.0  | 4.9  | 4.4  | 4.7  | 4.9  | 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  | 4.8  | 5.2  | 5.2  | 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  | 4.8  | 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  | 5.0  | 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 DEGR.    | 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   |
|              | 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

| LINK # | * CO/LINK (PPM) |      | * ANGLE (DEGREES) |      |      |      |      |      |      |       |       |       |       |       |       |    |
|--------|-----------------|------|-------------------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|----|
|        | REC1            | REC2 | REC3              | REC4 | REC5 | REC6 | REC7 | REC8 | REC9 | REC10 | REC11 | REC12 | REC13 | REC14 | REC15 |    |
|        | 0               | 280  | 80                | 280  | 280  | 280  | 260  | 260  | 250  | 250   | 260   | 250   | 260   | 100   | 170   |    |
| 1      | .1              | .0   | .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    | .0 |
| 3      | .0              | .0   | .0                | .0   | .0   | .1   | .1   | .0   | .0   | .0    | .0    | .0    | .0    | .0    | .0    | .0 |
| 4      | .0              | .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   | .1   | .2    | .0    | .0    | .0    | .9    | .5    |    |
| 15     | .0              | .0   | .0                | .0   | .0   | .0   | .0   | .0   | .0   | .0    | .0    | .1    | .0    | .0    | .1    |    |

JOB: BarnumPxl ee2024Bui IdAM

RUN: BarnumPxl ee2024Bui IdAM

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

LINK VARIABLES

| LINK DESCRIPTION        | * X1  | Y1    | X2      | Y2    | * LENGTH (FT) | BRG TYPE (DEG) | 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   |      |             |

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

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 ADDITIONAL QUEUE LINK PARAMETERS

| LINK DESCRIPTION       | *<br>*<br>*<br>* | CYCLE<br>LENGTH<br>(SEC) | RED<br>TIME<br>(SEC) | CLEARANCE<br>LOST TIME<br>(SEC) | APPROACH<br>VOL<br>(VPH) | SATURATION<br>FLOW RATE<br>(VPH) | IDLE<br>EM FAC<br>(gm/hr) | SIGNAL<br>TYPE | ARRIVAL<br>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               |

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 RECEPTOR LOCATIONS

| RECEPTOR                 | *<br>*<br>* | COORDINATES (FT) |       |     | *<br>*<br>* |
|--------------------------|-------------|------------------|-------|-----|-------------|
|                          |             | X                | Y     | Z   |             |
| 1. EB W Mi dblock        | *           | 196.0            | 410.0 | 6.0 | *           |
| 2. SW Corner             | *           | 400.0            | 410.0 | 6.0 | *           |
| 3. SB S Mi dblock        | *           | 400.0            | 200.0 | 6.0 | *           |
| 4. NB S Mi dblock        | *           | 454.0            | 200.0 | 6.0 | *           |
| 5. SE Corner             | *           | 454.0            | 410.0 | 6.0 | *           |
| 6. EB E Mi dblock        | *           | 648.0            | 410.0 | 6.0 | *           |
| 7. WB E Mi dblock        | *           | 648.0            | 464.0 | 6.0 | *           |
| 8. NE Corner             | *           | 454.0            | 464.0 | 6.0 | *           |
| 9. NB N Mi dblock        | *           | 454.0            | 640.0 | 6.0 | *           |
| 10. SB N Mi dblock       | *           | 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 Mi dblock       | *           | 196.0            | 464.0 | 6.0 | *           |
| 14. SEB W Mi dblock      | *           | 194.0            | 616.0 | 6.0 | *           |
| 15. NWB W Mi dblock      | *           | 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 \* CONCENTRATION

ANGLE \* (PPM)

(DEGR) \* REC1 REC2 REC3 REC4 REC5 REC6 REC7 REC8 REC9 REC10 REC11 REC12 REC13 REC14 REC15

| ANGLE (DEGR) | 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   | 4.4   | 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   | 4.5   | 4.3   |
| MAX DEGR.    | 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   |
|              | 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.



JOB: BarnumPxl ee2024BuidPM

RUN: BarnumPxl ee2024BuidPM

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

LINK VARIABLES

| LINK DESCRIPTION        | * X1  | Y1    | X2      | Y2    | * LENGTH (FT) | BRG TYPE (DEG) | 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       | *<br>* | CYCLE<br>LENGTH<br>(SEC) | RED<br>TIME<br>(SEC) | CLEARANCE<br>LOST TIME<br>(SEC) | APPROACH<br>VOL<br>(VPH) | SATURATION<br>FLOW RATE<br>(VPH) | IDLE<br>EM FAC<br>(gm/hr) | SIGNAL<br>TYPE | ARRIVAL<br>RATE |
|------------------------|--------|--------------------------|----------------------|---------------------------------|--------------------------|----------------------------------|---------------------------|----------------|-----------------|
| 2. Barnum Ave EB LTR   | *<br>* | 75                       | 19                   | 5.0                             | 511                      | 1665                             | 146.70                    | 2              | 4               |
| 5. Barnum Ave WB LTR   | *<br>* | 75                       | 58                   | 5.0                             | 389                      | 1633                             | 146.70                    | 2              | 4               |
| 8. Elizabeth St NB LTR | *<br>* | 75                       | 58                   | 5.0                             | 45                       | 1786                             | 146.70                    | 2              | 3               |
| 11. Pixlee Pl SB LTR   | *<br>* | 75                       | 58                   | 5.0                             | 49                       | 1767                             | 146.70                    | 2              | 3               |
| 14. Grant St SEB LTR   | *<br>* | 75                       | 58                   | 5.0                             | 225                      | 1802                             | 146.70                    | 2              | 3               |

-----  
 RECEPTOR LOCATIONS

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

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 \* CONCENTRATION

ANGLE \* (PPM)

(DEGR) \* REC1 REC2 REC3 REC4 REC5 REC6 REC7 REC8 REC9 REC10 REC11 REC12 REC13 REC14 REC15

| ANGLE (DEGR) | 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  | 4.3  | 4.5  | 5.4  | 4.3   | 4.3   | 5.6   | 4.8   | 5.6   | 4.4   |
| 120.         | 4.3  | 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   | 4.4   |
| 130.         | 4.3  | 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   | 4.5   |
| 140.         | 4.3  | 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   |
| 150.         | 4.3  | 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   | 4.9   |
| 160.         | 4.3  | 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   | 5.0   |
| 170.         | 4.3  | 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   | 5.1   |
| 180.         | 4.3  | 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   | 5.1   |
| 190.         | 4.3  | 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   | 5.0   |
| 200.         | 4.3  | 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   | 5.0   |
| 210.         | 4.3  | 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   | 4.9   |
| 220.         | 4.3  | 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   | 4.8   |
| 230.         | 4.3  | 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   | 4.7   |
| 240.         | 4.3  | 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   |
| 250.         | 4.4  | 4.4  | 4.3  | 4.4  | 4.4  | 4.4  | 4.4  | 5.5  | 5.5  | 4.7   | 4.8   | 5.7   | 5.1   | 5.6   | 4.6   |
| 260.         | 4.6  | 4.6  | 4.3  | 4.5  | 4.6  | 4.6  | 4.6  | 5.6  | 5.6  | 4.6   | 4.7   | 5.8   | 5.0   | 5.7   | 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 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.

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

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

| LINK # | CO/LINK (PPM) |             | ANGLE (DEGREES) |             |             |             |             |             |             |              |              |              |              |              |              |    |
|--------|---------------|-------------|-----------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|--------------|--------------|--------------|--------------|--------------|----|
|        | REC1<br>70    | REC2<br>280 | REC3<br>70      | REC4<br>280 | REC5<br>280 | REC6<br>280 | REC7<br>260 | REC8<br>260 | REC9<br>250 | REC10<br>250 | REC11<br>260 | REC12<br>250 | REC13<br>260 | REC14<br>100 | REC15<br>170 |    |
| 1      | .0            | .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           | .0 |
| 3      | .0            | .0          | .0              | .0          | .0          | .1          | .1          | .0          | .0          | .0           | .0           | .0           | .0           | .0           | .0           | .0 |
| 4      | .0            | .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           | .1           | .2 |
| 6      | .1            | .1          | .0              | .0          | .1          | .0          | .0          | .1          | .0          | .0           | .1           | .1           | .1           | .0           | .0           | .0 |
| 7      | .0            | .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           | .0 |
| 9      | .0            | .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           | .0 |
| 11     | .0            | .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           | .0 |
| 13     | .0            | .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           | .0           | .9           | .5 |
| 15     | .0            | .0          | .0              | .0          | .0          | .0          | .0          | .0          | .0          | .0           | .0           | .1           | .0           | .0           | .0           | .1 |

## **APPENDIX E – FTA GENERAL NOISE ASSESSMENT**

**FEDERAL TRANSIT ADMINISTRATION  
GENERAL NOISE ASSESSMENT**

**GREATER BRIDGEPORT TRANSIT AUTHORITY  
BUS MAINTENANCE FACILITY EXPANSION AND IMPROVEMENT  
PROJECT**

**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

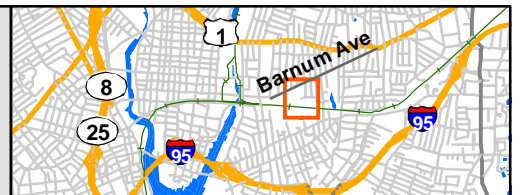
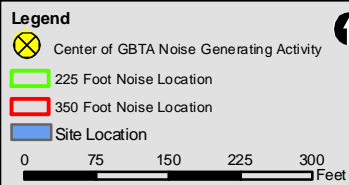
There are three categories of noise-sensitive land uses defined by the FTA in the guidance manual entitled *Transit Noise and Vibration Impact Assessment* (FTA-VA-90-103-06, May 2006). A Category 1 Land Use is generally defined as a tract of land where quiet is an essential element in its intended purpose, 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 1). Land uses within 350 unobstructed feet (the red circle on Figure 1) and 225 feet with intervening buildings (the green circle on Figure 1) 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 1) 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 1: - 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 1: Analysis Parameters and Data Inputs**

| <b>Parameter</b>  | <b>Data Input</b> |
|---|-------------------|
| 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.

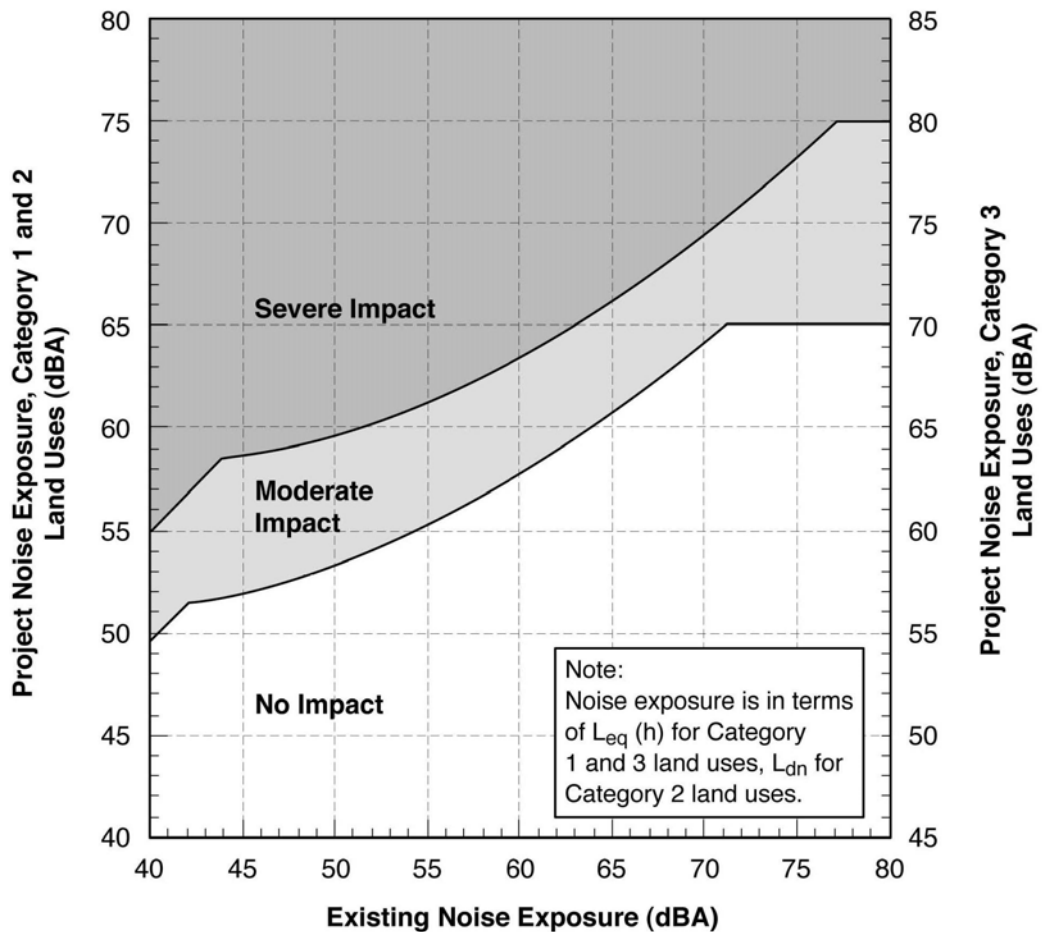
### *Noise Analysis Results and Determination of Impact*

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 2:

- 1) The result falls within the No Impact Zone on Figure 2.
- 2) The result falls within the Moderate Impact Zone on Figure 2. 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 2. 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 2: 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 2. FTANOISE output spreadsheets are included in the Appendix to this document. The future project-

only noise level for each receiver was then compared to the existing noise level at each receiver using Figure 2 to determine potential degree of project impact. The results are presented in Table 2.

**Table 2: Comparison of Estimated Future (2024) Project-Related Noise Levels to Existing Noise Levels and Determination of Impact**

| <b>Receiver Number</b> | <b>Estimated Future Noise Level (dBA) (L<sub>dn</sub>)</b> | <b>Existing Noise Levels (dBA) (L<sub>dn</sub>)</b> | <b>Noise Levels Defining Impact (dBA) (L<sub>dn</sub>)</b> | <b>Result of Comparison Using Graph in Figure 1</b> |
|------------------------|--|---|--|---|
| 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 2, 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 3: 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 4) no cumulative noise impacts to any of the three noise sensitive receivers.

**Table 3: Noise Impact Criteria: Effect on Cumulative Noise Exposure**

| Noise Impact Criteria: Effect on Cumulative Noise Exposure                   |                                  |   |                                   |
|--|----------------------------------|---|-----------------------------------|
| L <sub>dn</sub> or L <sub>eq</sub> 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 4: 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 this FTA General Noise Assessment, there will be no direct or cumulative noise impacts attributed to the expanded GBT Bus Maintenance Facility.

Construction Period Impacts

Table 5 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 5: Noise Emission Levels from Construction Equipment**

| <i>Construction Equipment</i> | <i>Noise Level (dBA) 50 feet from Source</i> |
|-------------------------------|--|
| 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 6: Effects of Construction Noise Levels on Sensitive Receivers Near the Proposed Action Site**

| <b>Map ID</b> | <b>Noise Sensitive Receiver</b>                                 | <b>Distance of Noise-Sensitive Receiver from the GBT Bus Maintenance Facility</b> | <b>Noise Level Exposure (in decibels)</b> |
|---------------|---|---|---|
| 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.

## **APPENDIX: FTANOISE SPREADSHEETS**

Federal Transit Administration  
 General Transit Noise Assessment  
 Case: GBT - Receiver N1 (2024)  
 Residence at western terminus of Cross Street

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| <b>RESULTS</b>      |                 |                           |                             |
|---------------------|-----------------|---------------------------|-----------------------------|
| <b>Noise Source</b> | <b>Ldn (dB)</b> | <b>Leq - daytime (dB)</b> | <b>Leq - nighttime (dB)</b> |
| 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.

| <b>LAND USE CATEGORY</b>                     |   |
|--|---|
| Noise receiver land use category (1, 2 or 3) | 2 |

Enter data for each noise source below - see reference list for source numbers.

| <b>NOISE SOURCE PARAMETERS</b>    |                     |     |                 |     |                 |
|-----------------------------------|---------------------|-----|-----------------|-----|-----------------|
| <b>Parameter</b>                  | <b>Source 1</b>     |     | <b>Source 2</b> |     | <b>Source 3</b> |
| Source Num.                       | Bus Op. Facility    | 15  | Parking Garage  | 17  |                 |
| Dist. to receiver                 | distance (ft)       | 325 | distance (ft)   | 285 |                 |
| Daytime Hours<br>(7 AM - 10 PM)   | buses/hour          | 22  | autos/hour      | 8   |                 |
|                                   | buses serviced/hour | 8   |                 | 3   |                 |
| Nighttime Hours<br>(10 PM - 7 AM) | buses/hour          | 3   | autos/hour      | 6   |                 |
|                                   | buses serviced/hour | 8   |                 |     |                 |
| Jointed Track?                    |                     | N   |                 | N   |                 |
| Embedded Track?                   |                     | N   |                 | N   |                 |
| Aerial Structure?                 |                     | N   |                 | N   |                 |
| Barrier Present?                  | Y/N                 | N   | Y/N             | N   |                 |
| Intervening Rows<br>of Buildings  | number              | 0   | number          | 0   |                 |

Federal Transit Administration  
 General Transit Noise Assessment  
 Case: GBT - Receiver N2 (2024)

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Residence at northwest corner of Cross & Elizabeth Streets

| <b>RESULTS</b> |          |                    |                      |
|----------------|----------|--------------------|----------------------|
| 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.

| <b>LAND USE CATEGORY</b>                     |   |
|--|---|
| Noise receiver land use category (1, 2 or 3) | 2 |

Enter data for each noise source below - see reference list for source numbers.

| <b>NOISE SOURCE PARAMETERS</b>    |                     |     |                |     |          |
|-----------------------------------|---------------------|-----|----------------|-----|----------|
| 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<br>(7 AM - 10 PM)   | buses/hour          | 22  | autos/hour     | 8   |          |
|                                   | buses serviced/hour | 8   |                | 3   |          |
| Nighttime Hours<br>(10 PM - 7 AM) | buses/hour          | 3   | autos/hour     | 6   |          |
|                                   | buses serviced/hour | 8   |                |     |          |
| Jointed Track?                    |                     | N   |                | N   |          |
| Embedded Track?                   |                     | N   |                | N   |          |
| Aerial Structure?                 |                     | N   |                | N   |          |
| Barrier Present?                  | Y/N                 | N   | Y/N            | N   |          |
| Intervening Rows<br>of Buildings  | number              | 0   | number         | 0   |          |

Federal Transit Administration  
 General Transit Noise Assessment  
 Case: GBT - Receiver N3 (2024)

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Residence at northeast corner of Cross & Elizabeth Streets

| <b>RESULTS</b>      |                 |                           |                             |
|---------------------|-----------------|---------------------------|-----------------------------|
| <b>Noise Source</b> | <b>Ldn (dB)</b> | <b>Leq - daytime (dB)</b> | <b>Leq - nighttime (dB)</b> |
| 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.

| <b>LAND USE CATEGORY</b>  |
|---|
| Noise receiver land use category (1, 2 or 3) <span style="float: right;">2</span> |

Enter data for each noise source below - see reference list for source numbers.

| <b>NOISE SOURCE PARAMETERS</b>    |                     |     |                 |     |                 |
|-----------------------------------|---------------------|-----|-----------------|-----|-----------------|
| <b>Parameter</b>                  | <b>Source 1</b>     |     | <b>Source 2</b> |     | <b>Source 3</b> |
| Source Num.                       | Bus Op. Facility    | 15  | Parking Garage  | 17  |                 |
| Dist. to receiver                 | distance (ft)       | 380 | distance (ft)   | 480 |                 |
| Daytime Hours<br>(7 AM - 10 PM)   | buses/hour          | 22  | autos/hour      | 8   |                 |
|                                   | buses serviced/hour | 8   |                 | 3   |                 |
| Nighttime Hours<br>(10 PM - 7 AM) | buses/hour          | 3   | autos/hour      | 6   |                 |
|                                   | buses serviced/hour | 8   |                 |     |                 |
| Jointed Track?                    |                     | N   |                 | N   |                 |
| Embedded Track?                   |                     | N   |                 | N   |                 |
| Aerial Structure?                 |                     | N   |                 | N   |                 |
| Barrier Present?                  | Y/N                 | N   | Y/N             | N   |                 |
| Intervening Rows<br>of Buildings  | number              | 0   | number          | 0   |                 |