

Environmental Justice Analysis

Binghamton Metropolitan
Transportation Study

July 2001

I. INTRODUCTION TO ENVIRONMENTAL JUSTICE

A. Definition of Environmental Justice

The U.S. EPA's Office of Environmental Justice defines environmental justice as follows:

Environmental Justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people, including a racial, ethnic, or socioeconomic group, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies.

B. Regulatory Framework of Environmental Justice

Environmental justice has become a focus of transportation planning and investment policy as a result of the issuing of Executive Order 12898 by President Clinton on February 11, 1994. The Executive Order focused attention on Title VI by providing that "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."

Title VI of the Civil Rights Act of 1964 sets forth federal requirements pertaining to equal employment opportunity and consideration of the needs of minority groups. Executive Orders 11246 and 11375 prohibit employment discrimination by employers with federal contracts of more than \$10,000 and their subcontractors. Equal employment opportunity laws prohibit discrimination in employment on the basis of race, color, religion, gender, age, national origin, or handicap. The Americans with Disabilities Act further protects the employment rights of persons with disabilities. Affirmative action requires that government employers consider women, members of minority groups, and persons with disabilities in their planning and operations in such a way as to eliminate the effects of past discrimination.

The provisions of these laws and orders apply to the New York State Department of Transportation and to all agencies which participate in BMTS via contracts with NYSDOT or a federal agency for the receipt of Federal funds. These include Broome County as host agency for the BMTS Central Staff. Also, any consultants or subcontractors to the above named agencies are required to meet the Title VI and Affirmative Action provisions.

Broome County, in the context of housing BMTS Central Staff, is responsible for compliance with two areas. Schedule C, "Assurance of Compliance with Title VI", of Broome County's contract with New York State, guarantees that it will abide by Title VI regulations in these areas:

1. Hiring of BMTS Central Staff: During staff recruitment, affirmative action procedures must be followed to ensure that women and minorities are well represented in the work force and that the work force reflects the characteristics of the area's population. In addition, as required by the ADA, persons with disabilities must not be discriminated against in hiring practices. Broome County government in 1992 adopted a new Affirmative Action Plan which will assure compliance with these procedures.
2. Selection of Planning Consultants: The BMTS Policy Committee, through the adoption of Resolution 96-09, has agreed to abide by the New York State Department of Transportation Disadvantaged Business Enterprise Plan, and to bind Broome County through the host agency agreement.

BMTS as an organization is responsible for the following:

1. Integration of Title VI Concerns in the MPO Planning Process: The MPO planning process must be structured so that the needs of minority neighborhoods are considered in developing long-range plans and short term improvement programs. It must also ensure minority and non-minority areas are compared to provide equitable transportation service and access.
2. Female and Minority Representation on MPO Committees and Advisory Boards: The MPO should ensure that women, minorities, and persons with disabilities, both individually and through their organizations, are represented in the citizen participation effort, including membership on formal committees, boards, and advisory committees.
3. Public Participation in the MPO Planning Process: The MPO should ensure that there is adequate opportunity for the public to provide legitimate input into the planning process. This shall be accomplished through timely notification and affording the opportunity for the public to speak at meetings of MPO Committees, boards, and advisory committees. (See Section F)
4. Compliance with the Americans with Disabilities Act of 1990: The MPO should ensure that those projects which are used to meet the requirements of regulations implementing the Americans with Disabilities Act appear in the Annual or Biennial Element of the TIP.

The BMTS Policy Committee is fully committed to the principles of equal employment opportunity and affirmative action, and to ensuring that its transportation plans equitably serve the community.

In support of Executive Order 12898, the United States Department of Transportation (DOT) issued an Order on Environmental Justice (DOT Order 5610.2) in 1997, followed by a Federal Highway Administration (FHWA) Order on Environmental Justice (FHWA Order 6640.23) in 1998.

Over the years, U.S. DOT and FHWA have encouraged a proactive approach to the implementation of Title VI, aimed at preventing discrimination in its programs, policies, and activities. This proactive approach can reduce conflicts and also reinforce compliance with other related requirements; such as, the National Environmental Policy Act (NEPA) of 1969, 23 U.S.C. 109(h) (which addresses social and economic impacts), and public involvement in statewide and metropolitan planning and project development. By being proactive, Federal, State, local, and tribal agencies can better serve all of the public, who rely on transportation systems and services to enhance their quality of life.

C. BMTS Approach to Environmental Justice

In response to environmental justice regulations, BMTS developed a process to assess the impacts of the transportation planning process, the long-term regional Transportation Plan (*TRANSPORTATION TOMORROW: 2025*), and the Transportation Improvement Program (TIP) on the target populations. Three core principles of environmental justice must be considered to ensure that it has been properly integrated into the transportation planning process.

1. To avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects on low income and minority populations.
2. To ensure the full and fair participation by all potentially affected communities in the transportation decision-making process.
3. To prevent denial of, reduction in, or significant delay in the receipt of benefits by low income and minority populations.

The results of the analysis in the Environmental Justice Report will be used to determine criteria for the future selection of transportation projects. The analysis will also provide a methodology for conducting ongoing environmental justice analysis on future Transportation Plans and TIPs.

D. Overview of the Report

Section II of the report, Define Populations, defines the target populations and provides a geographical representation of the target area where the target populations are prevalent. The transportation needs of the target population are identified and discussed. Section III describes the public involvement process used in the transportation planning process. Section IV identifies and discusses the type, mode, and thresholds of the measures that will be applied to the Transportation Plan and the TIP. Alternative modes of transportation and freight are also discussed in this section. Section V provides an overview of the transportation planning process and special projects that specifically address the transportation needs of the target populations. Section VI provides an overview and conclusion of the analysis.

II. DEFINE POPULATIONS AND NEEDS

A. Target Population Identification and Data

1. Methodology and Data Source

In response to Executive Order 12898, BMTS has identified minority and low-income residents as target populations to measure potential disproportionately high and adverse human, health, or environmental effects of its programs, policies, and activities.

Demographic data were sought regarding characteristics of these target populations for the BMTS planning area, which is the Binghamton Urban Area as defined by the US Census. (See MAP 1)

The planning area includes at least portions of the following municipalities:

BROOME COUNTY - City of Binghamton, Town of Binghamton, Town of Chenango, Town of Conklin, Town of Dickinson, Town of Fenton, Town of Kirkwood, Town of Main, Town of Union, Town of Vestal, Village of Endicott, Village of Johnson City, and Village of Port Dickinson

TIOGA COUNTY - Town of Owego, and Village of Owego

The source for the population data that will be used for the environmental justice analysis is the 1990 Census. The U.S. Census Bureau collects socio-economic and demographic data on 10 year intervals, with the most recent one occurring in 2000. 1990 Census figures are being used because 2000 Census figures for the target populations will not be available during the timetable prescribed for this analysis.

Census data at the block-group level of geography was used to provide the information in sufficient detail to accurately identify concentrations of the target populations. Due to the fact that the block-group boundaries do not match with those of the BMTS planning area, the study area boundaries were expanded to conform to the borders of municipalities that are part of the BMTS Planning Area. Analysis of this data resulted in identifying a target area where concentrations of the target populations exist, and in the identification of planning measurements that were used to test the effects of changes to the transportation system in the target area. (See MAP 2)

2. Define Target Population Thresholds

To identify minority population concentrations, the percentage of minorities in the study area was calculated and used as a threshold. Block-groups with minority population percentages above the threshold were considered to have a concentration of minorities, and therefore, were included as part of the target area to test for environmental justice compliance.

The threshold for a Census block-group to be classified as one with a low-income population concentration was one whose median income was below 70% of the median household income for the study area. Block-groups that met this criterion were considered part of the target area to test for environmental justice compliance.

The totals and averages for the demographic variables identified for measuring environmental justice are listed below.

1990 Thresholds of Target Populations

Data Set	1990 Totals for Study Area	Threshold	Target Area
Total Population	208,837		77,201
Total Households	87,048		31,252
Minority Population	8,805	4.2%	7,194
Low Income Population	\$28,641 (SMSA Median Household Income)	\$20,049 (70% of the SMSA Median Household Income)	

3. Distribution of Selected Populations

With a total population of 208,837, the study area can be classified as a small urban area. The average total population for each block group was 943.

Minority Populations

The U.S. Census identifies minorities as people of African, Hispanic, Asian, American Indian, or Alaskan Native origin. The study area has a small minority population with a total of 8,805 people, which is 4.2% of the total population.

Concentrations of the minority population were generally located in the vicinity of the main business districts of Binghamton, Johnson City, and Endicott, which basically run from east to west along US Route 11 and NYS Route 17C. Binghamton University on NYS Rt. 434 and the surrounding area also accounted for a concentration of minority population. The median minority population percentage for block-groups with minority concentrations was about 7.5%, but some block-groups were as high as 32.8%, which were located in central business district locations of Binghamton.
(See MAP 3)

Low-income Population

Initial investigation into a data source to identify low-income population concentrations considered the U.S. Department of Health and Human Service's 1990 national poverty guidelines. The percent of people in poverty for the study area would have served as a threshold to determine concentrations of this population. However, this data did not provide discernable results to enable identifying low-income population concentrations. This was because there was a small range variation between the block-groups of the percentage of families below the poverty level. Therefore, the difference between a block-group being considered one with a low-income

concentration or one not would be at most one percent. Using this data set would not accurately identify block-groups with a concentration of low-income residents.

The data source that provided the best profile of low-income population distribution was the 1990 Census data for Median Household Income. Low-income population concentrations were defined as block-groups with median household income levels less than 70% of the Median Household Income for the study area. The median household income for the study area is \$28,641 and the threshold (70% of the Median Household Income) is \$20,049.

Block-groups of low-income concentrations were located mainly in the business districts of Binghamton, Johnson City, and Endicott. Several areas outside the business districts where public housing developments are located were also identified as low-income concentrations. (See MAP 4)

B. Identification of Transportation Needs of Targeted Populations

1. Needs Identified

Identifying the transportation needs of the target populations is an ongoing process. The needs are derived from various BMTS plans, studies, committees, and public outreach efforts, which include the following: BMTS Policy and Planning Committees, *TRANSPORTATION TOMORROW: 2025*, Welfare to Work Transportation Needs Assessment, Binghamton Regional Job Access Transportation Plan, Transit Future Forums, Tioga County Public Transit Advisory Council, BMTS Pedestrian & Bicycle Plan, and the BMTS Pedestrian & Bicycle Advisory Committee. Information obtained from these sources state:

- The Binghamton urban area's street/highway system adequately accommodates current levels of automobile traffic with a few exceptions during peak travel times. In addition, a majority of the urban area's population, including those in the target population, has access to an automobile for the majority of their trips. The relative ease of access to an automobile and the conveniences associated with automobile use make it a popular modal choice for travel.
- The following gaps exist in the current public transportation service for the Binghamton urban area that create a barrier for low income individuals to find and retain employment:
 - ⇒ Absence of evening/night bus service
 - ⇒ Limited Saturday service (Broome County)
 - ⇒ Absence of Saturday bus service (Tioga County)
 - ⇒ Absence of Sunday bus service
 - ⇒ Limited service connections between Broome and Tioga Counties
 - ⇒ Inability of rural paratransit service to meet work travel needs, primarily because of schedule limitations
- There is limited financial commitment to public transit by municipalities and employers.
 - ⇒ The need for municipalities to be fiscally constrained has impacted the willingness to increase investments into public transportation services, despite the apparent shortcomings of existing transit services. Broome County provides the minimum required funding for Broome County Public Transportation to operate its current system, but has not demonstrated a willingness to use county funds to support service expansion. A change in this policy is not foreseen in the near future. Tioga County Public Transit is based upon a Coordinated Service Operator agreement that creates a partnership between Tioga County and the carrier, Progressive Transportation Services (PTS). The County does not currently provide any direct subsidies for the transit services, and seeks to avoid the need to do so in the future.
 - ⇒ Area employers generally do not have or participate in programs to provide incentives for employees to use public transit.

- There is a lack of opportunity for alternative modes of transportation
 - ⇒ Sidewalks are generally not present outside the urban core of Binghamton, Johnson City, and Endicott. This is true even along BC Transit routes, busy commercial corridors, and in the vicinity of schools.
 - ⇒ Maintenance of existing sidewalks to comply to Americans with Disabilities Act standards is important especially to the senior and handicapped populations
 - ⇒ There is a need more bike facilities such as striping bike lanes on roads and constructing riverbank trails.

III. PUBLIC INVOLVEMENT PROCESS (PIP)

A. Evaluate PIP

The Binghamton Metropolitan Transportation Study has always been dedicated to conducting a robust public participation process in order to best inform its planning and programming activities. The BMTS Unified Operations Plan, most recently updated in 1997, includes the following text on public participation:

“The citizens of the Binghamton Metropolitan Area have a substantial interest in the metropolitan transportation system, its facilities and operations. The transportation planning process must be responsive to those interests. Therefore, BMTS is committed to maintaining a public involvement process that facilitates timely and meaningful participation in the development of its plans and programs. The following plan will ensure that such public participation meets the requirements of the Intermodal Surface Transportation Efficiency Act and its implementing regulations, as well as local goals.

- 1) The BMTS public involvement process has the following objectives:
 - ♦ To disseminate on a timely basis full information about transportation issues and proposed plans and programs to citizens, affected public agencies, representatives of transportation agency employees, private providers of transportation services, community and environmental interest groups, and others as appropriate.
 - ♦ To provide public access as requested to both technical and policy information that forms the basis for developing transportation plans and programs.
 - ♦ To seek out meaningful public input at an early stage in the development of transportation plans and programs; to make special efforts to inform and seek such input from minority and low income households.
 - ♦ To ensure broad notification of all Planning Committee and Policy Committee meetings, and to set aside time at those meetings for public comments germane to the agenda.”

The Plan goes on to outline specific public involvement activities and timetables with respect to the Transportation Plan and the Transportation Improvement Program.

While a public involvement plan is useful, the proof is in its implementation. This is particularly important in the environmental justice and social equity arena. Obtaining input from minority and low-income residents is often a challenge. BMTS utilizes a variety of techniques, including going to the community rather than expecting them to come to us. The relatively small size of the Binghamton metropolitan area makes such outreach feasible. As noted in the analysis, minority and low-income neighborhoods are generally compact and easily identifiable.

In the most recent update of the BMTS long range transportation plan, *TRANSPORTATION TOMORROW: 2025*, adopted in March 2000, BMTS Central Staff conducted numerous outreach activities. The focus of the outreach was to gather input from residents and local officials on the goals, objectives, and priorities of the Plan in relation to the overall community and regional goals

of economic development, quality of life, safety, and mobility. In the philosophy of “going where the people are”, BMTS staff went to a number of the area senior citizens centers, making presentations at lunch, typically the most heavily attended event at these locations; and asked for invitations to speak at residents’ association meetings at public housing facilities. The input from these meetings clearly affected our plan, especially the public transit elements. We also relied on staff level contact with organizations like Opportunities for Broome (the local anti-poverty agency), the Broome County Urban League, and various neighborhood associations.

BMTS also holds periodic public forums. In October 2000, for example, we held a series of “Public Transit Futures Forums” to seek input on how the Broome and Tioga County public transit systems could better meet the needs of area residents. We are sensitive to the need to hold both daytime and evening events. The government plaza complex in Binghamton has the advantage of being located within walking distance of many elderly, minority, and low income households, and at the hub of the fixed route transit system, where all routes converge twice an hour. This makes attendance more convenient for transit dependent residents.

BMTS publishes a quarterly newsletter, *Crossroads*. The mailing list includes all identified community organizations. In addition, everyone who signs in at any of our public meetings is automatically added to the mailing list, which now totals about 1000. Multiple copies of the newsletter are also sent to every local library. Each issue typically highlights a local transportation issue, or a plan that is under development, and requests input.

Finally, BMTS will be developing an Internet web site in the coming year, to add to the spectrum of public participation techniques. While this avenue is perhaps less available to the target populations of minority and low income individuals, there are more and more opportunities for free access at school and public libraries, and organizations such as the Urban League.

BMTS will continue to review guidance from the Federal Transit and Federal Highway Administrations and others on effective public involvement techniques, and modify our approach accordingly.

IV. QUANTITATIVELY ASSESS AND ANALYZE FEDERAL INVESTMENTS IN THE REGIONAL TRANSPORTATION TOMORROW: 2025 AND TIP

A. Identification of Measures

The small urban area nature of the BMTS planning area combined with the area’s current trend of loss in population and moderately paced economic development has a significant impact on the Transportation Plan and TIP. The priorities for both plans have been system preservation, and basically to make needed improvements to existing transportation facilities. As a result, actions in the Transportation Plan and TIP projects have largely consisted of reconstruction, rehabilitation, and safety improvement projects, with construction of only a few new facilities.

As measures derived from the Binghamton Regional Traffic Model were considered, it became apparent that except for new construction projects, the impacts of the road projects primarily involving reconstruction or rehabilitation did not change significantly from the preexisting condition for variables such as average travel times, proximity to attractions, congested vehicle miles of travel, and property displacement. However, each project does entail general improvements in accessibility, mobility, safety, economic growth, and quality of life.

It has been determined that the best measure to quantitatively evaluate environmental justice compliance of the Transportation Plan and TIP is to tally the actions and projects from each plan and identify ones that are located within the target area. The tally will give an indication of the investment being made in the target area. Additionally, new construction projects and their impacts on the target area will be discussed individually. Finally, the impacts on the target population of plans and projects involving other modes of transportation including pedestrian and bicycle, public transportation, and freight will be addressed.

B. Application of Measures

Transportation Plan and TIP

The BMTS Transportation Plan, *TRANSPORTATION TOMORROW:2025*, was adopted by the Policy Committee in March 2000. It is a Plan that was developed with a substantial public outreach effort, to ensure that it reflects not just transportation goals, but the goals of the community and the region in the areas of mobility, safety, economic growth, and quality of life. It is a Plan that recognizes that investment in the Binghamton metropolitan transportation system can accomplish many outcomes. Investment in improving highways and bridges to facilitate truck movement can make regional businesses more competitive, and attract new business to the area. Investment in enhanced transit service can help welfare recipients enter the workforce. Investment in bicycle facilities can reduce reliance on the automobile and make our region more attractive on the human scale. In keeping with the fiscal constraint requirement of Federal law, the Plan also recognizes that we cannot accomplish everything, and that priorities must be set. In adopting the Goals and Objectives for *TRANSPORTATION TOMORROW:2025*, the BMTS Policy Committee spelled out the following priorities:

- System preservation: maintain all modal facilities in an acceptable state of good repair
- Personal mobility: address deficiencies in High Priority Metropolitan Corridors [Vestal Corridor, Airport Corridor, Access to Binghamton CBD]; enhance public transit service; invest in bicycle and pedestrian facilities
- Safety: ensure that high accident locations are addressed, and that safety is accommodated in project design
- System operation: recognize the ongoing cost of operating certain transportation facilities
- Economic growth and freight mobility: support the regional economy through freight efficiencies and improved access
- Environmental protection and quality of life: enhance the physical and social environment

This TIP addresses all of these Transportation Plan goals. Federal funding is distributed over project type as follows:

▪ System preservation	63%
▪ Personal mobility	7%
▪ Safety	8%
▪ System operations	18%
▪ Economic growth	2%
▪ Environment/quality of life	2%

These percentages are estimates in the sense that many projects address more than one need. For example, reconstruction of an urban arterial street like Clinton Street in the City of Binghamton, improves the pavement, but also responds to safety and operational deficiencies.

The objective of the TIP is to obtain the most efficient use possible of the metropolitan transportation system by recognizing opportunities to improve access and mobility of people and freight. This can be accomplished by optimizing roadway operation, improving transit service, providing for non-motorized travel, and removing impediments to truck movement.

Numerous improvements to the metropolitan transportation system have resulted from the short range planning effort.

Projects on current TIP: (See MAP 5 & 6)

Highway Projects WITHIN the Environmental Justice Target Area			
#	Name	Type	Year
1	NY 26 – NANTICOKE CK. TO W. CORNERS	MAINTENANCE	2000
2	CONKLIN AVE. RECONSTRUCTION	RECONSTRUCTION	1999
3	NY 7 – SANDY BEACH TO CR #177	RECONSTRUCTION	2000
4	NY 17 – CHENANGO RIVER TO NY 26	RECONSTRUCTION	1999
5	NY 17C – OVER NY 26, ENDICOTT	REHABILITATION	2000
6	NY 17C – HARRISON ST. TO HOOPER RD.	REHABILITATION	2003
7	US 11 – BROOME CC TO I-81 EXIT 6	REHABILITATION	2001
8	NY 17C – WEST ENDICOTT	REHABILITATION	2001
9	NY 7 – CONKILIN ROAD	REHABILITATION	2003
10	US 11 – TOMPKINS ST. TO COLESVILLE RD.	REHABILITATION	2001
11	NY7/SUSQ/US 11 – CHAPMAN ST TO TOMPKINS ST	SAFETY	2002
12	NY 434 – S. WASHINGTON ST. : LEFT TURN LANE	SAFETY	2000
13	NORTH ST. – LIBERTY ST. TO LINCOLN ST. (UNION)	RECONSTRUCTION	2002
14	NORTH ST. – RECONSTRUCTION (ENDICOTT)	RECONSTRUCTION	1999
15	HARRY L. DR. – RECONSTRUCTION	RECONSTRUCTION	1999

Highway Projects OUTSIDE the Environmental Justice Target Area			
#	Name	Type	Year
16	WESTERN BROOME/EASTERN TIOGA BRIDGE	NEW CONSTRUCTION	1999
17	NY 201 FLYOVER	NEW CONSTRUCTION	2002
18	US 11 – HOWELL DR./FARR ST./NY 12A	MAINTENANCE	2000
19	NY 17C – RIVER ST. TO HOME DEPOT	MAINTENANCE	1999
20	NY 12A – OVER THOMAS CREEK	MAINTENANCE	2001
21	I-81 – HINMANS CORNERS/CASTLE CREEK	RECONSTRUCTION	2002
22	I-81 – FIVE MILE PT. – BINGHAMTON EAST CITY LINE	REHABILITATION	2002
23	US 11 AND NY 990G OVER PARK CREEK	REHABILITATION	2002
24	US 11 – FULLER ROAD INTERSECTION	SAFETY	2003
25	NY 434, NY 96, NY 960J – COURTS ST. TO MARSHLAND ROAD	REHABILITATION	2002

Of the twenty-five highway projects from the 2000 – 2004 TIP, fifteen (60%) are within the target area. With regard to this measure, it would appear that significant investments have been made in the target area, and that there are no adverse impacts on the target populations and no disproportionate impacts among the population groups.

New Construction Projects

- Western Broome/Eastern Tioga Bridge**
 This new bridge crosses the Susquehanna River at the NY 17 Exit 66 in Apalachin and connects to NY 17C at Campville, Town of Owego. NY 434 will also be accessible from the bridge via the existing bridge at the Exit 66 interchange.

Two problems this project will address are capacity deficiencies on NY 17C between Glendale Rd. and Bridge St., and access limitations imposed on the Towns of Vestal, Union, and Owego as a result of the 12 mile distance between existing river crossings at Bridge St. and Hiawatha.

This project will also benefit Tioga County Public Transit service by way of more efficient routes and improved access to destinations. There is also the opportunity to investigate possibilities of improving coordination between the Broome and Tioga County transit systems. The bridge will also serve as a connection between Local Bike Route 2 (NY 434) and Local Bike Route 1/NY Bike Route 17 (NY 17C).

- **NY 201 Flyover**

While the final design concept for this project has not yet been determined, the objective is to construct a northbound roadway segment that bypasses the existing Johnson City traffic circle, creating a contiguous stretch of NY 201 from the existing bridge to the existing northern section that accesses NY 17 and Harry L. Drive.

This project will address and remedy current congestion and safety problems, particularly in terms of excess delay on the local street entering legs of the circle, as well as improve bicycle and pedestrian facilities. Property acquisition may be necessary, displacing several homes and a medical building, but will not affect the target area or target population.

Both new construction projects are outside the target area, but will still benefit the target population via improvements to public transit and bicycle modes of transportation. With regard to the new construction projects, it would appear that there are no adverse impacts on the target populations and no disproportionate impacts among the population groups.

C. Other Modes

1. Pedestrian and Bicycle Facilities

Walking and biking becomes a primary mode of transportation for individuals who cannot or choose not to use a motorized vehicle. Each metropolitan planning organization (MPO) is required to create a Pedestrian and Bicycle Plan that will serve as a guide to develop a pedestrian and bicycle friendly transportation system. In 1995, BMTS began this process with the formation of the Pedestrian and Bicycle Advisory Committee, whose purpose was to provide obtain input for the Plan from key professions and the public. During June of 1996, the BMTS Pedestrian and Bicycle Plan was adopted. This plan is comprised of a set of goals and objectives to make the region more bikeable and walkable.

Implemented Objectives of the Plan include:

- Every capital project in the metropolitan area is reviewed by BMTS and its Pedestrian & Bicycle Advisory Committee to ensure appropriate provisions for bicyclists, pedestrians, and public transportation users are included. A BMTS staff member also takes part in the NYS Department of Transportation Region 9's Bicycle and Pedestrian Committee that also reviews all state capital projects for its region. These opportunities for project reviews have resulted in the construction of both sidewalks and bicycle lanes for numerous projects.
- **The Binghamton Metropolitan Bike Route System** was established during the summer of 1998. The system consists of seven signed bike routes throughout the Urban Area. (See MAP 7 & 8) The routes were chosen based upon the following factors: creating a continuous route system connecting important destinations, previous recommendations from the 1976 "Binghamton Metropolitan Bikeway System: A Plan & Program", present road conditions and the ability to enhance their bicycle friendliness, review by municipal officials, and review by volunteers from the public. The routes broadly serve the target area for this study.

An important part of the Bike Route System project was the creation of the **Binghamton Metropolitan Bicycle Route Map** that was published and ready for distribution during

December 2000. The map serves as a guide to the bike routes as well as an educational resource containing information on bicycle rules of the road and general safety tips.

- **Greenway Feasibility Study** (see Section V - OVERVIEW OF PLANNING PROCESS AND SPECIAL PROJECTS)
- **Walk N Roll** – Annually, during National Bike Month in May, the BMTS Pedestrian & Bicycle Advisory Committee plans activities to encourage more biking, walking, inline skating, while instructing how to participate in a safe manner. Activities have consisted of: Bike Rodeos and Train-the-Trainer Seminars, Public Outreach & Informational Displays, Educational Outreaches: Guest speakers, Bike/pedestrian information on supermarket bags, and Pedestrian Road Show/Training.
- **Bikes Racks on Buses** – During the Summer of 2000, BC Transit, as a part of their purchase of 23 new buses, installed bike racks on their entire fleet of buses. The bike racks allow users to better access to bus stops and/or destinations further from a bus stop. Bikes can also serve as source of transportation when bus service is not available for either the commuter's initial or return trip. Observation of bike rack usage indicates that they are popular with the transit ridership.
- BMTS participation as a member of the Broome & Tioga County **Health Education & Awareness Resource Team (HEART)** has resulted in the following projects and activities: Walk Your Child to School Day, Helmet Sales, Parks Challenges to encourage use of area parks, and Minigrants to help fund walking & biking facilities.

The implementation of these elements and the other action items of the BMTS Pedestrian & Bicycle Plan produce benefits for the entire population of the Binghamton urban area by increasing accessibility and mobility by providing more walking and biking opportunities, which have been identified as a need for the target populations.

2. Public Transit

Both Broome and Tioga Counties operate public transportation services within the Binghamton Urban Area.

Broome County:

BC Transit, an operation of the Broome County Department of Public Transportation (BCDOPT), is a fixed route public transportation system owned and operated by Broome County. BC Transit has forty-three, forty foot long buses with seventeen different routes covering eighty square miles of the urbanized cores of the Triple Cities. (Binghamton, Johnson City and Endicott.) Also covered are the areas between or near each of the Triple Cities, such as Vestal, Westover, Endwell, Union, and West Corners to name a few. (see MAP 9)

BC Transit uses a "Pulse System". This means that every half hour ten routes converge at BC Junction in downtown Binghamton, with a five-minute layover so passengers may transfer from one bus to another to complete their trip.

BC Transit has a two-fare system, Peak and Off Peak. Peak time is from 5:00am to 9:15am and from 3:15pm to 6:00pm, with a fare of one dollar. Off Peak fare is fifty cents with hours from 9:15am to 3:15pm and after 6:00pm. Also Saturday is Off Peak all day. There is no service on Sunday.

The BCDOPT also operates a paratransit service for the urban area called, BC Lift. BC Lift serves residents who are unable to use the fixed route BC Transit service due to physical or mental handicaps. In compliance with the ADA, BC Lift operates throughout the BC Transit service area, and during the same hours. Another paratransit service called BC Country serves county residents living outside the urban area.

Tioga County:

In 1992, Tioga County created a new public transit service. This system is based upon a Coordinated Service Operator agreement that creates a partnership between Tioga County and the carrier. Progressive Transportation Services (PTS) is the private operator under contract with Tioga County, and T-Tran, Inc. is the designated Coordinated Service Operator (i.e. the carrier).

The County and the carrier jointly determine routes, fares, and schedules while the operator assumes all costs of operation, management, and development of the transit system. T-Tran is not required to provide services that do not yield a profit, and the County provides no direct subsidies.

Among the services T-Tran provides a regional fixed route system. The fixed routes originate in Tioga County, mainly in Owego or Waverly, and serve the County's communities as well as providing service from Tioga County into Broome (Broome Community College), Steuben, Tompkins, and Chemung Counties. Fares for the Owego/Waverly fixed routes are \$1 per zone or a monthly pass for unlimited rides can be purchased for \$30. Up to 3 children five years old and younger may ride free when accompanied by an adult. The fares for the fixed commuter routes vary for each route and for the distance traveled along each, except for the Broome Community College route. All the commuter routes also offer monthly passes for unlimited rides, while the Cornell route offers an OMNIRIDE pass through Cornell University. Fixed route service is available on weekdays with hours that vary by route. (see appendix for schedule & fare information)

T-Tran also operates a paratransit service referred to as Dial-A-Ride. This is a door-to-door service that supplements the fixed route service and is available only to those who have difficulty in accessing and using the fixed route system. Poor accessibility may be constituted by mobility limitations, dangerous pedestrian conditions, or simply proximity to the nearest bus stop. When at all possible, transportation needs are met by the fixed route system, even if it is necessary to slightly deviate buses from their regular course. A zone based fare is used for Dial-A-Ride. The one-way charge begins at \$3 for the first zone and \$1 more for each additional zone one travels through. Monthly passes are also available. This service is available weekdays from 8 AM - 5 PM.

T-Tran is also contracted to perform special services. For instance, T-Tran contracts with the Tioga County Department of Social Services to provide non-emergency medical transportation within Tioga County and contiguous counties for approved Medicaid recipients. Once a Medicaid client has received approval for a specific trip, it is then scheduled by T-Tran/PTS. Trips are placed on T-Tran buses whenever possible. If T-Tran buses are unavailable, other carriers are used.

The Transportation Tomorrow: 2025 plan and the TIP supports the Broome County fixed route bus system through replacement of coaches, substantial operating assistance, and capital improvements. Tioga County Public Transit also receives federal operating assistance for the urban area portion of their service. BMTS also works directly with the BCDOPT, and with Tioga Public Transit through its Tioga County Public Transit Advisory Committee to assist the respective transit service providers in their planning efforts.

Below is a list of recent projects that have been completed or are ongoing that benefit this study's target population as well as all public transit users:

- Bus Purchase – During July of 2000, BC Transit took delivery of twenty-three new forty-foot, Low-Floor buses. The entire fleet (43 forty-foot buses) is now 100% wheelchair accessible. The low-floor design, with no interior steps, will also make it easier for the elderly, and people with physical disabilities, to board.
- Shelters – Thirty new shelters have been purchased and are being installed first at high ridership bus stops. They will provide a safer environment with protection from the elements for the waiting transit riders. At least thirty more shelters are planned to be purchased during 2002
- FTA Job Access and Reverse Commute (JARC) and New York State Temporary Assistance to Needy Families (TANF) Grants – Broome County has been awarded funding from the JARC and TANF grants that will be used to meet the most critical needs identified in the Regional Job Access Plan. The project will add BC Transit weekday evening and weekend service. The enhanced service will serve to fill the existing service gaps, and thus aid in providing more job opportunities with better and more complete access to job sites.

- New Fareboxes – During 2000, BC Transit has installed new computerized validating farebox system. They allow BC Transit to audit ridership on all of its routes and adjust routes, adding more buses to a route that has a high volume of passengers. In addition they will help BC Transit to decide where bus shelters should be located, and aid in making decisions to better serve the passengers.
- Broome & Tioga Coordination – Since 1998, T-Tran and BC Transit have operated cooperatively to provide a link between their services at Washington St. in Endicott. This service is being analyzed on an ongoing basis to determine how it can best work; to date, ridership has been minimal. A survey of T-Tran riders is being planned to measure demand for service in the vicinity of the new Susquehanna River crossing in Apalachin, to help guide possible changes to the coordinated system that would better serve its existing ridership and attract more transit users.
- Intermodal Transportation Center – Construction of an Intermodal Transportation Center in downtown Binghamton is a high priority of BMTS. Preliminary work has been completed, including a site evaluation and development of a conceptual site plan and design. The terminal is intended to incorporate the central transfer point for BC Transit; the BC Lift & BC Country paratransit services; Tioga County Public Transit; and provide interconnectivity with the intercity bus services of Shortline and Greyhound. The recommended site is on Chenango St., incorporating the present Greyhound and Shortline terminals, which is in this Study's target area.
The Center will benefit the BC Transit riders by enhancing the transfer area, which has been moved back and forth from Court St. to Hawley St., both of which require passengers to wait outdoors. It will also provide a significant improvement over the present intercity bus terminals, and therefore a more positive impression of this area by residents and visitors. The preliminary cost estimate for this project is \$6.25 million. BMTS, Broome County, and the City of Binghamton are working together to obtain Federal Transit Administration (FTA) Section 5309 Bus Discretionary allocation for this project. The BMTS Policy Committee has stated a willingness to invest the necessary amount of National Highway System (NHS) or Surface Transportation Program (STP) funds the discretionary allocation does not cover in order to complete the project.

BC Transit and T-Tran broadly serve the residents of the target area, as well as for an extensive portion of the Study Area. As BMTS continues to work directly with the BCDOPT and Tioga County Public Transit in their planning efforts, and promote enhanced transit services within the Transportation Tomorrow plans and TIP, weaknesses in the transit service will be reduced. Such efforts will ensure that the low-income and minority populations are not disproportionately disadvantaged, and that their transportation needs are met.

3. Freight

The movement of goods and equipment by truck, rail, boat, and air can create numerous negative externalities on the population of an urbanized area, especially for those residing near freight hubs such as industrial parks, freight transfer facilities, train switching yards, shipping ports, and airports. Freight traffic creates uncomfortable levels of air and noise pollution, expedites the deterioration of transportation infrastructure, and introduces unique safety problems to neighborhoods such as at-grade rail crossings and hazardous material shipping. With respect to new federal legislation on environmental justice, it is the duty of the MPO to ensure that neighborhoods housing predominantly low-income or minority populations are not being subjected to a disproportionately high percentage of the negative externalities associated with freight movement.

In the Binghamton Urbanized Area, the composition of freight movement by weight is about 90% by truck, 10% by rail, with a minute fraction moving by air. Truck traffic is concentrated along the National Network, a federally designated system of Interstate Highways and other principle highways built and maintained to acceptable standards for large trucks on which most of the nation's truck freight moves, which includes I81, I88, and NY17 locally. The regional truck freight

network also contains designated New York State Access Highways that link the National Network with truck terminals and warehouses; locally designated truck routes; and informal routes frequently used by trucks. Rail freight moves primarily along two main lines, one north-south that follows NY7, one east-west that follows NY17C to the west and US11 to the east, that intersect in the Binghamton CBD. There are no intermodal transfer facilities in the area currently, although four general candidate sites were identified in the Southern Tier Rail System Study, completed in 1998, in the event that regional demand for intermodal transfer were to induce development of such a facility by private sector freight interests.

The target area for environmental justice review in the Binghamton Urbanized Area intersects the National Network at scattered locations in the Village of Johnson City, the Town of Dickinson, the Town of Chenango, and the City of Binghamton along NY17 and I81. BMTS is in the process of completing its Freight Plan, which contains a method of estimating large truck trips as a function of employment levels in various sectors and number of households in each of 38 truck access zones in the Urbanized Area. According to this quick response method no zone is subject to more than 5% of the region's large truck trips currently. Of the six zones that are subject to more than 2% of the region's large truck trips, half lie at least partially within this study's target area (East Vestal, West Binghamton, and Binghamton CBD), half do not (North Endicott, Kirkwood, and Owego-NY17C). Ten zones are subject to between 1% and 2% of the region's large truck trips. Of these, three contain at most a small pocket of the target area (North Johnson City, West Vestal, and Hooper Road Corridor), two have a significant portion within the target area (South Binghamton and East Binghamton), and five are fully within the target area (Clinton Street Corridor, Johnson City-NY17C, Endicott-NY17C, Westover, and Bevier Street Corridor). Six zones are forecast to experience a significant increase in the number of large truck trips by 2025. Of these, five contain at most a small pocket of the target area (Conklin, North Johnson City, West Union, West Vestal, and Airport Road in Maine), and only one is contained within the target area (East Vestal). The methodology of the Freight Plan suggests that large truck trips in the Binghamton Urbanized Area are quite evenly dispersed throughout the region and do not disproportionately occur within the target area. Counts will take place in 2001 to provide data necessary to calibrate the model used to predict the number of large truck trips to ensure the accuracy of the estimates of large truck traffic.

During 1998-99, a Noise Abatement and Feasibility Study for NY Route 17 and Interstate 81 throughout the Binghamton Urban Area was conducted for the New York State DOT. The purpose of the study was to respond to traffic noise complaints of residents, to be a preliminary planning tool, and to facilitate noise abatement funding. Trucks, which are primarily through movement, generate a significant amount of the traffic noise. The Study's noise analysis focused on forty residential areas adjacent to NY Route 17 and Interstate 81.

Analysis was conducted using the following procedure:

1. Identify Noise Analysis Locations
2. Determine Peak Hour Traffic Noise Levels
3. Identify Impacted Locations (Noise level above or equal to 66 decibels)
4. Conduct Noise Barrier Analysis
5. Identify Feasible (Noise reduction of 7-10 decibels) and Cost Effective Barrier Locations (Number of benefited properties, \$50,000 per residence or less, and Public Acceptance).

The findings are as follows:

- Nine locations were found not to be impacted by traffic noise levels. Of these, two (22.2%) were in the environmental justice target area.
- Twelve locations were found to be impacted by traffic noise levels, but noise barriers were found to be not feasible or cost effective. Of these, two (16.7%) were in the environmental justice target area.
- Eighteen locations were found to be impacted by traffic noise levels, and noise barriers were feasible and cost effective. Of these, eleven (61.1%) with a total of 573 residences are in the environmental justice target area.

It appears that there are a significant number of residential locations in the target area that are impacted by traffic noise where mitigation through construction of noise barriers is feasible.

Federal law does not permit the use of FHWA funds to retrofit an existing roadway with noise abatement devices. New York State policy prohibits the use of state transportation funds as well, with the direction being that projects must be funded by special state legislative allocations or through local funds. As a result, implementation has not progressed. Thus, this environmental impact has been documented but has not been mitigated.

Two Class I railroads (Norfolk Southern and Delaware & Hudson) and two short line railroads (New York, Susquehanna, & Western, and Owego & Harford) serve about a dozen regular clients in the Binghamton Urbanized Area. Of approximately twenty trains entering the region daily, most constitute through traffic, few stop at one of three actively utilized rail yards for switching operations, and few stop at rail sidings adjacent to clients. The target area intersects with rail lines in most of the City of Binghamton and at scattered locations in the Villages of Johnson City, Endicott, and Owego. Of the three actively utilized rail yards, one lies within the target area (QD Yard in Binghamton), two do not (YO Yard in Binghamton and the D&H East Binghamton Yard in Conklin). The four possible intermodal terminal locations identified include a non-specific location in West Binghamton that lies within the target area in addition to the three active rail yards. Of the few active rail sidings, some lie within the target area (e.g. Goudey Station in Westover and National Pipe Company in Vestal), some do not (e.g. Frito Lay in Kirkwood and Agway in Binghamton). There does not appear to be a disproportionate amount of rail freight activity within the BMTS target area. In the event private sector freight interests endeavor to develop an intermodal terminal in the Binghamton Urbanized Area it is the responsibility of BMTS to ensure the facility is not located within the target area without giving equal consideration to possible alternative locations that do not. In any case it is a stated goal of BMTS to provide priority funding to ensure safe, efficient truck access to an intermodal terminal. This includes supporting the development of access points that minimize the impact of negative externalities on nearby residents.

V. OVERVIEW OF PLANNING PROCESS AND SPECIAL PROJECTS

A. Review of Planning Process to Determine How Environmental Justice Requirements are Addressed

BMTS' transportation planning efforts aim toward providing the safest and most efficient transportation system as possible, offering maximum mobility and access for all people and freight. Modal choices include the automobile, bus, bicycle, and walking. The transportation planning process and its products are responsive to changing social, economic, environmental, and demographic conditions.

It is the traveler's decision regarding their choice of mode for any given trip, but their choice is affected by the service provided by the various elements of the transportation system. These services result from the prioritization of funding and programming of construction that is cooperatively undertaken by the members of the BMTS Policy and Planning Committees. These Committees are comprised of elected leaders and officials of the Binghamton Urban Area's municipalities, and the New York State Department of Transportation (NYSDOT). Such cooperation is required for availability of federal transportation funds.

BMTS also has a Central Staff consisting of the Executive Director, 2 Traffic Engineers, a Senior Transportation Planner, a Transportation Planner, and Account Clerk/Typist. The Central Staff's main services include: transportation engineering assistance to local municipalities and NYSDOT; traffic modeling; transportation planning assistance to local municipalities, Broome and Tioga County transit systems, and NYSDOT; Geographic Information System (GIS) development and utilization; and providing requested information to the public.

All the components of the BMTS transportation planning process mentioned above are effective and provide the opportunity to address environmental justice requirements.

B. Review of Special Projects and Their Applicability to Environmental Justice

1. Binghamton Metropolitan Greenway Study & Implementation Plan

The confluence of the Susquehanna and Chenango Rivers is located in downtown Binghamton at the heart of the BMTS Urban Area. Throughout this region's history the rivers have played a key role in the settlement and development of this area. As use of the river for industry diminished combined with growing environmental awareness and ensuing legislation, clean up of the polluted water made great strides. Attention turned to the rivers and their banks as a source for enjoyment of their natural beauty.

During 1978, the BMTS Bikeway Plan was completed. Part of the plan recommended a system of riverbank trails along the Susquehanna and Chenango Rivers for recreational and transportation purposes of pedestrians and bicyclists. However, funding for the plan was not available and the region's economic climate, as well as the philosophy of bikes being toys and not a legitimate form of transportation, led to no support from local officials to expend local funds to develop the trail system.

Despite the failure of the initial trail plans, the concept of riverbank trails lived on. With the passage of the federal Intermodal Surface Transportation Efficiency Act (ISTEA) in 1991 and its reauthorization through the Transportation Equity Act for the 21st Century (TEA-21) in 1998, new funding sources became available for projects promoting alternative modes of travel such as biking and walking. With these modes now recognized as legitimate transportation alternatives and the availability of federal funding, the interest in developing riverbank trails resurfaced. In January of 1999, BMTS initiated the Binghamton Metropolitan Greenway Study to determine the feasibility of developing riverbank trails along the Susquehanna and Chenango Rivers within the Binghamton Urbanized Area. The study produced a list of riverbank trail proposals that were connected by the on-road bike route network in areas where trail development was not feasible. (See MAP 10) The total system of recommended trails was estimated to cost \$15 million construction alone. A phased implementation plan was proposed, with total system implementation estimated to take fifteen to twenty years. The consultants also provided information on funding trails, general design guidelines, and information on maintenance, safety, and security issues. BMTS held several public informational meetings to get input on the Study, as well as having the BMTS Planning and Policy Committees comment on it. Based on that input and the Study's recommendation, BMTS developed the Binghamton Metropolitan Greenway System Implementation Plan that prioritized trail segments for development. The plan was to initially to develop trail extensions from existing trails, develop new trail loops within specified parks, connect trail extensions and park trail systems, and ultimately build recommended river crossings.

Listed below are existing trails and new trails that will be constructed during 2001 and 2002:

Existing Trails:

- Otsiningo Park Trails (Broome County Park in the Town of Dickinson)
- Chugnut Riverwalk (Village of Endicott/Town of Union)
- Port Dickinson Community Park Trails (Village of Port Dickinson)
- Chenango Valley State Park Trails (Located in the Town of Fenton, adjacent to the Binghamton Urban Area boundary)

New Trails to be Constructed During 2001 and 2002:

- Otsiningo Park Trail Extension to Town of Chenango Riverfront Park (Broome County)
- Vestal Rail Trail (Town of Vestal)
- City of Binghamton Trail System (City of Binghamton)

The proposed trail system traverses the target area for this Study and the entire Binghamton Urban Area. The benefits of the trails will be available to the low-income and minority populations, as well as the rest of the Urban Area's population. Benefits of trails include: the provision of transportation alternatives by connecting homes, workplaces, schools, parks, shopping centers and cultural attractions; provision for exercise and healthy living; environmental conservation; encouragement of economic development and tourism; and overall improved quality of life for the area.

2. Transportation Enhancements Program

Nontraditional transportation projects, such as developing trails and facilities that encourage walking and biking rather than using motorized travel modes, benefit the environment and the low-income communities. The social benefits and avoided costs resulting from walking and biking are numerous. The Transportation Enhancements Program (TEP) is a federal program administered by the NYSDOT that is designed to fund such projects that are outside the norm of traditional transportation programs. BMTS encourages and supports the construction of bicycle and pedestrian facilities in its planning area. This support was demonstrated by prioritizing the construction of multi-use trail facilities in the TEP selection process. Four applications located in the BMTS planning area were submitted for the first round of TEP funds under TEA-21, requesting a total of \$660,100. Two of the four applications were awarded TEP funds amounting to \$445,100. Both of the awarded projects were for the construction of multi-use trails for biking and walking, and are listed below:

- Otsiningo Park Trail Extension (About 1.25 miles in length.)
- Vestal Rail-Trail (2.1 miles in length)

The Otsiningo Park Trail Extension is in the target area for this study, while the Vestal Rail-Trail is not.

3. Broome County Rural Paratransit Analysis

Accessibility to the urban area for rural residents is very important, especially for those of the low income and minority populations in search of job opportunities or in need of accessing certain services only available in the urban area. There may also be needs for those of the target population within the urban area to access destinations in the rural areas, outside BC Transit's fixed route service area. BC Country is the BCDOPT paratransit service that serves the function of providing transportation for rural residents to access the urban area. This service has been in existence for over 15 years with no significant operational changes. At the same time the recognition of unmet travel needs of rural residents has grown.

BMTS is currently initiating an analysis of the BC Country Service. This study will be undertaken in cooperation with the Broome County Department of Public Transportation. The study will analyze the present operation of BC Country service, assess the unmet travel demand in the rural area of Broome County, investigate various improvements or modifications to the service, and evaluate those alternatives in terms of operational, financial, and service measures.

VI. OVERVIEW OF RESULTS AND RECOMMENDED STRATEGIES

A. Conclusions

This report represents an initial analysis of BMTS' transportation planning process and its two major products, the Transportation Plan (*TRANSPORTATION TOMORROW: 2025*), and the Transportation Improvement Program. BMTS staff will continue to augment the methodologies used in this report by reviewing efforts of other organizations undertaking similar studies, seeking out new data sources, and through further consultation with representatives of the general community and target community concerning environmental justice issues.

In general, the measures used for the analysis did not reveal significant environmental justice issues. However, results of the Noise Abatement Needs & Feasibility Study for NY Route 17 and Interstate 81 indicate that a significant number of residential locations in the target area are impacted by traffic noise where mitigation through construction of noise barriers is feasible. Funding has not been identified for implementation, but is being sought. It can be concluded that there is an absence of any disproportionate adverse impacts on the target population, and the benefits of the transportation system seemed to be proportionately spread amongst the total population.

B. Recommendations for Improving Data

The data set used for this environmental justice analysis, the 1990 US Census, is dated. However, the census is the most detailed and comprehensive set of information available. This will likely remain true throughout the future, and will therefore remain the best information source to measure environmental justice of BMTS transportation planning and policy.

An opportunity to update this analysis and reevaluate its findings exists as the 2000 US Census data becomes available throughout 2001 and 2002.