APPENDICES FOR

MOVING OUR FUTURE FORWARD 2045

BINGHAMTON METROPOLITAN TRANSPORTATION PLAN

Prepared by:

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Consultant Team:

RSG
Elan 3
Greenman Pedersen Inc

Adopted by the Binghamton Metropolitan Transportation Study Policy Committee:

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APPENDIX A.
ILLUSTRATIVE PROJECT LIST

BMTS has compiled a list of projects from its member agencies that reflect the needs of the region. Historically, approximately 80-85% of federal allocations have been spent on system preservation maintenance projects. Tables 11-2 and 11-3 specify how BMTS plans to invest available resources over the life of the LRTP in system preservation, safety, and mobility.

The projects listed below represent anticipated needs beyond what can be programmed within a fiscally constrained plan. These are called "illustrative" in federal law. These projects will be considered for programming, as funds become available, with the goal of moving the transportation system towards a state of good repair, while also taking all modes of transportation into consideration. Those projects on the list that are considered for future TIP updates must compete for federal funding through BMTS' TIP project selection process. Projects that are selected will be evaluated based on this plan's goals, objectives and performance measures and will be weighed against the other projects proposed for that particular TIP update. BMTS' current TIP includes projects programmed for years 2021- 2024.[1] The current TIP also includes a list of *Illustrative* projects that were not able to be funded with the current federal allocation to the BMTS region. If additional funds beyond the anticipated revenues projected in this plan become available, both lista will be reviewed for candidate projects.

One project that has been discussed within the community but is not included in the list below is the construction of a bridge connecting to Hooper Road on the north side of the river and African Road in Vestal. While this may provide a more convenient route for vehicles, it is not critical for access. A connection in that location may prove more important for bicycle and pedestrian access, given the distance to adjacent bridges. It is anticipated that the cost of this project, even as a bicycle/pedestrian bridge with connections to sidewalks and trails, would render it prohibitive unless there was a substantial influx of funds to the BMTS region.

[1] These projects can be found here: http://bmtsonline.com/sites/default/files/TIP/FINAL TIP/2020-2024 FINAL TIP.pdf.

TABLE A-1: ILLUSTRATIVE PROJECT LIST

PROJECT DESCRIPTION	PROJECT TYPE	PROJECT OWNER	COST ESTIMATE
I-81 over Loughlin Road Reconstruction of BINs 1013111 & 1013112; Deck issues and scour issues; AADT 20,000 to 25,500	Bridge	NYSDOT	$34,000,000
US Route 11 over Castle Creek Reconstruction of BIN 1008220; AADT 26,000	Bridge	NYSDOT	$8,500,000
NY Route 17 Corridor near Oakdale Mall Major Rehabilitation of BINs 1063229, 1063219, 1063209, 1063190, 1063179, 1063161, 1063162; AADTs 22,000 to 66,000	Bridge	NYSDOT	$49,000,000
I-88 Connector Superstructure replacements, I88 - I81 Connector vicinity; BINs 1073961, 1073962 & 107396A; AADTs 8500, 8200, 700	Bridge	NYSDOT	$35,000,000
NY Route 17 River Bridges Reconstruction of Route 17 over Susquehanna River Bridges, BINs 1054831 & 1054832; AADT 24,000	Bridge	NYSDOT	$124,000,000
I-81 over Stratton Mill Creek Reconstruction of BIN 1013120; AADT 40,000	Bridge	NYSDOT	$17,000,000
I-81 and NY Route 17 over Stanley Hollow Creek - Reconstruction of BINs 1063140, 1031171 & 1031172; AADTs 5,000; 14,450; 13,900	Bridge	NYSDOT	$19,000,000
I-81 Hinmans Corners Reconstruction of BINs 1008201, 1008202, 1031201, 1031202, 1031211, 1031212, 1031221, 1031222, 1008231, 1008232 (I81 over Fuller Road, Castle Creek, Route 11 and Ramp) ; AADTs 12,000 to 19,500	Bridge	NYSDOT	$77,000,000
NY Route 363 Corridor to Binghamton Reconstruction of BINs 1003670, 1013059, 1008169, 1013039; AADTs 18,000 to 26,000 (Route 363 over Route 7 ramp, Robinson Street, Route 11 & Exchange Street)	Bridge	NYSDOT	$150,000,000
NY Route 434 over NY Route 363 Riverside Drive, Susquehanna River & Conklin Ave Reconstruction of BINs 1013021, 1013022; AADT 12,500	Bridge	NYSDOT	$100,000,000
NY 201 over Susquehanna River and Boland Drive Reconstruction of BIN 1014359; AADT ~50,000	Bridge	NYSDOT	$190,000,000
NY Route 17 Broome County line to Pumpelly Creek RM 17 65063272 to 3169 Crack & Seat with asphalt overlay	Highway	NYSDOT	$49,735,657
I-81 - NB/SB Prospect Mountain Project to Frances Street RM I81 -9101-1077 to I81 9101 2025 I81 Crack and Seat - 93' Broad Street to Windy Hill Bridge	Highway	NYSDOT	$30,464,904
I-81 NB/SB Exit 7 to Cortland County Line RM I81 9101 3083 to I81 9101 3225 - two course asphalt overlay with full depth repairs	Highway	NYSDOT	$25,033,130
I-86 RM 17 9107 3025 to RM 17 9107 3032 Kirkwood Area Crack & Seal	Highway	NYSDOT	$4,686,908
NY Route 201 Johnson City RM 201 91101 1012 to 201 9101 1020 and NYS Route 991C - concrete pavement replacement	Highway	NYSDOT	$6,092,981

PROJECT DESCRIPTION	PROJECT TYPE	PROJECT OWNER	COST ESTIMATE
NY Route 96/38 Village of Owego including Front St, North Ave., Court ST., and Park Ave. and 17C/Main St.,& intersecting Roadways (Temple St, Chestnut St, Fox St) reconstruction between curb lines	Highway	NYSDOT	$8,587,626
NY Route 17 Nichols to Susq. River 17 6506 3036 to 3099; mill and fill & unbonded PCC Overlay	Highway	NYSDOT	$10,087,436
NY Route434 Broome County line to Marshland Road 17 65061273 to 1311; pavement preservation	Highway	NYSDOT	$4,188,315
ADA Projects, various locations	Bike/Ped	NYSDOT	$5,000,000
Sidewalk Construction Projects, various locations	Bike/Ped	NYSDOT	$7,500,000
Pedestrian Improvements for Local Roads, various locations	Bike/Ped	Local	$5,000,000
NY Route 7 and NY Route 363 Pedestrian Safety Improvements	Bike/Ped	NYSDOT	$5,000,000
US Route 11 Kirkwood Access Management and Multimodal Improvements	Bike/Ped	NYSDOT	$20,000,000
Large Culvert repair and replacement, various locations	Other	Local	TBD
NY Route 17 Rest Area Improvements, Owego	Other	NYSDOT	TBD
ADA Compliance, various locations	Other	NYSDOT	TBD
I-88 over I-81 Bridge deck replacement, I-88 Connector I-81 to Exit 2 Pavement rehabilitation Binghamton	Bridge	NYSDOT	$96,090,021
I-81 Kirkwood to Binghamton City Line, Pavement reconstruction	Highway	NYSDOT	$52,412,739
I-86, Old Route 17 to Windsor, Pavement rehabilitation	Highway	NYSDOT	$17,470,913
Owego to Broome County line, Pavement rehabilitation	Highway	NYSDOT	$31,447,643
NY Route 434 at Glenn Bartle Drive (Binghamton University Entrance), Intersection improvements	Capacity	NYSDOT	$4,031,749
NY Route 17 (I-86) Owego, Culvert	Bridge	NYSDOT	$7,391,540
NY Route 17C (Main Street), Binghamton to Endicott, Corridor Reconstruction	Highway	NYSDOT	$120,952,474
US Route 11 Binghamton, Pavement improvement	Highway	NYSDOT	$6,988,365
NY Route 201 Pedestrian Improvements	Bike/Ped	NYSDOT	$8,063,498
I-81 over US Route 11 and Pease Hille Road, Bridge replacement	Bridge	NYSDOT	$40,317,491
NY Route 17 over Susquehanna River, Endwell, Bridge replacement	Bridge	NYSDOT	$100,793,728
I-81 over Loughlin Road and Colesville Road, Bridge replacement	Bridge	NYSDOT	$26,206,369
I-81 over NY Route 990G Bridge replacement	Bridge	NYSDOT	$40,317,491
NY Route 17 EB Nichols Rest Area reconstruction	Other	NYSDOT	$20,158,746
NY Route 434, Vestal Road, Bunn Hill Road, Sidewalk Project in the Town of Vestal to complete missing segments	Safety	NYSDOT	TBD
NY 434 at Bunn Hill Road, Intersection improvements	Capacity	NYSDOT	$4,500,000
NY Route 17, Exit 69 to Exit 67, Extending 3 lanes westward, EB and WB	Highway	NYSDOT	TBD

PROJECT DESCRIPTION	PROJECT TYPE	PROJECT OWNER	COST ESTIMATE
Watson Boulevard Town of Union – multimodal connector (bikes/walking)	Highway	Broome County	TBD
Hooper Road, Town of Union – Pedestrian /Sidewalk /ADA updates	Highway	Broome County	TBD
Old Vestal Road Upgrades, Town of Vestal – including addressing drainage issues.	Highway	Broome County	TBD
Replacement / flood upgrade of Glenwood Drive Bridge	Bridge	Broome County	TBD
Vestal-Endicott Bridge – replace/upgrade. Reuse of existing truss bridge as open space park area	Bridge	Broome County	TBD
West Hill Bridge Replacement - address flooding issues.	Bridge	Broome County	TBD
Transit bus stop upgrades (shelters and ADA compliance), various locations	Other	Broome County	TBD
Chenango Bridge/Port Crane Pedestrian River Crossing, new construction	Bike/Ped	TBD	TBD

APPENDIX B.

BMTS COMMITTEES: POLICY COMMITTEE, PLANNING COMMITTEE, LRTP STEERING COMMITTEE AND STAKEHOLDER WORKING GROUP

The **BMTS Policy Committee** is designated by the Governor of New York as the metropolitan planning organization serving the Binghamton NY-PA urbanized area.

Policy Committee membership:

- Broome County. Jason Garnar, County Executive
- Tioga County. Mike Roberts, Legislator
- City of Binghamton. Rich David, Mayor
- Town of Chenango. Jo Anne Klenovic, Supervisor
- Town of Dickinson. Michael Marinaccio, Supervisor, **Chair**
- Town of Kirkwood. Gordon Kniffen, Supervisor
- Town of Owego. Donald Castellucci, Jr., Supervisor
- Town of Union. Rick Materese, Supervisor
- Town of Vestal. John Schaffer, Supervisor
- Village of Endicott. Linda Jackson, Mayor
- Village of Johnson City. Greg Deemie, Mayor
- Village of Owego. Michael Baratta, Mayor
- Southern Tier 8. Jennifer Gregory, Director
- New York State Department of Transportation. Marie Therese Dominguez, Commissioner
- Empire State Development. Donna Howell, Regional Director

Advisory members:

- NYSDOT Region 9, Regional Director
- Pennsylvania DOT
- FHWA, New York Division
- FTA, Region 2

The **BMTS Planning Committee** provides technical oversight and input into the transportation planning process and products.

Planning Committee membership:

- Broome County. Beth Lucas, Acting Director of Planning & Economic Development
- Broome County. Greg Kilmer, Commissioner of Public Transportation
- Broome County, Leslie Boulton, P.E., Commissioner of Public Works
- Tioga County. Elaine Jardine, Director of Economic Development and Planning
- Tioga County. Gary Hammond, P.E., Commissioner of Public Works
- City of Binghamton. Raymond Standish, P.E., City Engineer
- City of Binghamton. John Paddock, Commissioner of Public Works
- Town of Chenango. Alex Urda, P.E., Town Engineer
- Town of Conklin. Brian Coddington, Highway Superintendent
- Town of Dickinson. Ron Lake, P.E., Town Engineer
- Town of Owego. Planning & Zoning Administrator
- Town of Union. Louis Caforio, Commissioner of Public Works
- Town of Vestal. Vernon Myers, P.E., Town Engineer
- Village of Endicott. Cameron Williams
- Village of Johnson City. Robert Bennett, P.E., Director of Public Works
- NYSDOT Region 9Pamela Eshbaugh, P.E., Planning & Program Manager

Advisory members:

- Town of Candor
- Town of Fenton
- Town of Maine
- Town of Tioga
- Town of Windsor
- Village of Windsor
- Broome County Legislature
- Broome County Health Department
- Tioga County Public Health Department
- Southern Tier 8
- Greater Binghamton Chamber of Commerce
- New York State Department of Transportation, Statewide Planning Bureau
- Pennsylvania Department of Transportation District 4
- New York State Department of Environmental Conservation Region 7
- Federal Highway Administration, New York Division Office of Program Management
- Federal Transit Administration Region 2

The **BMTS LRTP Steering Committee** was created specifically to review and provide input on the process and content of the LRTP.

LRTP Steering Committee members:

- Kristin Canjura, Broome County Health Department
- Greg Kilmer, Broome County Department of Public Transportation
- Lucia Esposito, Broome County Office for Aging
- Gwen Kania, Tioga County Chamber of Commerce
- Elaine Jardine, Tioga County Department of Economic Development and Planning
- Stacey Duncan, The Agency
- Kyle Davis, The Agency
- Bill Wagoner, Mobility Management of the Southern Tier

- Bob Bennett, BMTS Planning Committee
- Pamela Eshbaugh, NYSDOT Region 9

The **LRTP Stakeholder Working Group** was created to provide an avenue for input for key stakeholders, representing modal advocates, local institutions, and businesses.

LRTP Stakeholder Working Group members:

- Tanya Husick, Binghamton University
- David Ligiekis, SUNY Broome
- Mark Heefner, Broome County Department of Aviation
- Nathan Fenni, New York, Susquehanna & Western RR
- Michael DeAngelo, Vestal Asphalt, representing Trucking Association of NY
- Steven Bard, Southern Tier Bicycle Club
- Susan Ruff, Southern Tier Independence Center
- Dot Richter, Tioga Opportunities
- Michael Ponticello, Broome County Department of Emergency Services

APPENDIX C.
ENGAGEMENT WITH PARTNER AGENCIES

There are specific requirements regarding outreach to stakeholders in the planning process that BMTS has met in preparation of this metropolitan transportation plan.

"The MPO shall consult, as appropriate, with State and local agencies responsible for land use management, natural resources, environmental protection, conservation, and historic preservation concerning the development of the transportation plan." 23 CFR 450.324(g)

"The MPO shall provide individuals, affected public agencies, representatives of public transportation employees, … freight shippers, providers of freight transportation services, private providers of transportation (including intercity bus operators, employer-based commuting programs…, representatives of users of public transportation, representatives of users of pedestrian walkways and bicycle transportation facilities, representatives of the disabled, and other interested parties with a reasonable opportunity to comment on the transportation plan."[2] In order to accomplish the first requirement, BMTS sent this letter on October 2, 2019:

[2] 23 CFR 450.324(j).

09/17/2019

Re: BMTS Long Range Transportation Plan

Dear ,

The Binghamton Metropolitan Transportation Study, as the designated metropolitan planning organization for Broome-Tioga planning area, is responsible for developing and adopting a long range transportation plan (LRTP) and updating it no less than every five years. Our current plan, 2040, was adopted in 2015. We are now in the process of developing a new plan, Moving Our Future Forward 2045: Long Range Transportation Plan.

It is important to our planning process that we collaborate with environmental resource agencies. While our plan focuses on transportation, we recognize the importance of preserving and protecting a healthy environment and supporting community quality of life. It is especially important that we know of plans you may have for projects or actions in the Broome-Tioga region that may impact transportation infrastructure or services. BMTS will benefit from your input by reflecting your agency's work.

As a first step, we have developed a Vision Statement, as well as draft goals and objectives. These are attached for your review. Please provide any feedback you may have.

I would happy to meet with you to talk about the LRTP if you would find that useful. You can call me at 778-2443 or email at jyonkoski@co.broome.ny.us

Distribution list:

U.S. Environmental Protection Agency, Region 2

U.S. Army Corps of Engineers, New York District Planning Division

U.S. Fish & Wildlife Service, Northeast Region, New York Field Office

NYS Department of Environmental Conservation, Region 7

NYS Department of Environmental Conservation, Office of Air Resources, Climate Change, and Energy

NYS Department of Parks, Recreation, and Historic Preservation, Region 5

NYS Department of Parks, Recreation, and Historic Preservation, Division for Historic

Preservation Broome County Soil and Water Conservation District

Tioga County Soil and Water Conservation District

Cornell Cooperative Extension, Broome County

Cornell Cooperative Extension, Tioga County

Broome County Farm Bureau

The second requirement was accomplished primarily by membership in the LRTP Steering Committee and Stakeholder Working Group (appendix A). BMTS also communicated directly with intercity bus carriers with this letter, sent on October 2, 2019. No responses were received. These organizations were also able to respond during public review and comment periods.

10/1/2019

Re: BMTS Long Range Transportation Plan

Dear ,

The Binghamton Metropolitan Transportation Study, as the designated metropolitan planning organization for Broome-Tioga planning area, is responsible for developing and adopting a long range transportation plan (LRTP) and updating it no less than every five years. Our current plan, 2040, was adopted in 2015. We are now in the process of developing a new plan, Moving Our Future Forward 2045: Long Range Transportation Plan.

It is important to our planning process that we collaborate with intercity bus carriers early in the development of the plan. While our plan focuses on transportation within the region, we will also be evaluating travel to and from the area. In fact, the Federal planning rule requires consideration of the role that intercity buses may play in reducing congestion, pollution, and energy consumption in a cost-effective manner and strategies and investments that preserve and enhance intercity bus systems, including systems that are privately owned and operated. BMTS will benefit from your input, especially in terms of your company's plans for this region.

As a first step, we have developed a Vision Statement, as well as draft goals and objectives. These are attached for your review. Please provide any feedback you may have.

I would happy to meet with you to talk about the LRTP if you would find that useful. You can call me at 778-2443 or email at jyonkoski@co.broome.ny.us

Distribution list:

Greyhound Lines, Inc

Coach USA Shortline Bus

Trailways of New York

OurBus

APPENDIX D.
PUBLIC ENGAGEMENT

Public Engagement Summary

To guide development of the 2045 Long Range Transportation Plan, the Binghamton Metropolitan Transportation Study (BMTS) engaged the general public, local government leaders, the private sector, and not-for-profit organizations to find out how they use transportation in their daily lives, what improvements they envision, their vision for the regional transportation systems, and what challenges/issues should be a community priority.

The goal of public participation during this project was to foster communication, create a sense of ownership and build trust between the public and the BMTS. Public outreach efforts included:

- Public Engagement Plan
- Attendance at Community Events
- An Online Community Survey
- Virtual Town Hall
- Project Website.

Public Engagement Plan

To guide the public outreach process, a Public Engagement Plan was prepared. A copy of the plan is provided.

Public Engagement Plan
Binghamton Metropolitan Transportation Study
Long Range Transportation Plan

I. INTRODUCTION

The Binghamton Metropolitan Transportation Study (BMTS) is the designated Metropolitan Planning Organization (MPO) for the Binghamton Metropolitan Planning Area, which includes 21 cities, towns and villages within the Binghamton urbanized area. As the MPO, BMTS is involved in various federally mandated transportation planning activities, including the preparation and adoption of a Long-Range Transportation Plan (LRTP). LRTPs must have a minimum 20-year horizon, plan for a regional multi-modal transportation system, and be updated every five years.

Eighteen years ago, the BMTS adopted the original LRTP, *Transportation Tomorrow 2025*. The most recent update to the LRTP, *Looking Forward 2040*, was adopted in September 2015. The 2040 Plan broadens the scope of the original plan to incorporated planning factors included in the federal transportation bill, *Moving Ahead for Progress in the 21st Century (Map-21)*.

As BMTS approaches the horizon year for the original plan, they seek to prepare a new LRTP with a horizon year of 2045. Some of the topics for consideration in the 2045 Plan include, but are not limited to, building resiliency into the transportation infrastructure, incorporating federally mandated performance measures, transportation project development, fiscal analysis, and future land use and travel demand modeling. The LRTP will comply with the Fixing America's Surface Transportation Act (FAST Act).

To guide development of the LRTP, BMTS has contracted with a consultant team led by Resource Systems Group, Inc. (RSG). The team also includes Greenman-Pedersen, Inc. (GPI), and Elan.3 Consulting (Elan).

The LRTP must be completed by September 2020 but may be done as early as June 2020. Key milestones that will influence the public engagement strategy include:

- March 2019: Steering Committee will be formed
- May 2019: The Consultant Team begins work with the BMTS and stakeholders
- June 2019: Data collection and analysis
- June 2019: Vision, goals and objectives will be identified
- May 2020: Draft LRTP prepared [Alt: Feb 2020]
- September 2020: Completion of a LRTP [Alt: June 2020]

II. GENERAL INFORMATION

Kick Off Meeting

A kick-off meeting was held in Binghamton with BMTS staff and the RSG Consulting Team. The meeting introduced the initiative and included a review of the scope, schedule, public engagement, milestones, deliverables, and related issues.

Steering Committee

An LRTP Steering Committee (SC) was created to ensure that the Long Range Transportation Plan reflects the local vision of the future of Greater Binghamton and identifies projects and policies that will solve the region's transportation challenges in a way that supports community goals. Their role is to provide high-level guidance to the BMTS staff and BMTS Planning and Policy Committees. The SC (membership list follows) includes representatives from key public, private, nonprofit, and institutional stakeholder groups and organizations.

Stakeholder Working Group

The Stakeholder Working Group comprises members with technical knowledge who represent modal interests, special user groups, and community organizations. Their role is to provide to input at specific stages in the LRTP development. (membership list follows).

Ongoing Planning Efforts

Numerous planning efforts within the Binghamton Metropolitan Planning Area have been completed in recent years and most featured a community engagement component. The LRTP will build on rather than duplicate these efforts, taking a strong implementation and action planning focus to drive project completion and build momentum.

Overview of the Public Engagement Plan:

This Public Engagement Plan identifies the specific "level, type, format, and purpose of community engagement throughout the planning process" that will encourage participation from a broad and diverse population. It identifies key partners, specific forums, and outreach mechanisms. As the process unfolds, it may be appropriate to modify the Public Engagement Plan to best gain public input.

Elements:

- Steering Committee Meetings
- Stakeholder Working Group Meetings
- Stakeholder Meetings, Interviews, and Focus Groups
- Project Website and Online Survey
- Organized Community Events
- Community Open House One – Gather input from the public to inform the Plan's vision, goals and objectives
- Community Open House Two – Present the Draft LRTP to the community
- Final Open House Presentation

A focused effort will be made to engage people who typically do not participate in planning programs to the greatest amount possible potentially including seniors, youth, residents of special needs or public housing and people with disabilities. These efforts typically include pop-up outreach and surveying at community events, distribution of materials through organization email and websites.

Outreach for each event is described below. All materials will encourage requests from people with disabilities for accommodation to enable them to participate in each event. Physical accessibility of meeting sites including parking will be provided to the greatest degree possible give timing and available resources. Outreach approaches will be discussed with local disability support organizations and revised as appropriate during the process.

Summary of Attached Tables: A number of tables will be developed and attached to this engagement strategy including:

- Key Contacts
- Steering Committee Members
- Stakeholder Working Group Members
- Master Media List

These tables will be updated throughout the process as appropriate from committee rosters, recommendations for stakeholders and sign-in sheets from all meetings and events.

III. STEERING COMMITTEE MEETINGS

Purpose: The Steering Committee is the sounding board for the BMTS and will help oversee the project. The Committee will provide input on local issues; help focus the project; review draft and final documents; assist in the public outreach process; and assist in the review and selection of key projects and policies to be addressed in the Long Range Transportation Plan.

Approach: It is important that the work of the Steering Committee be valued and useful. As such, they will meet at key times during the LRTP development process rather than on a regular basis. It will be desirable that members become champions of the LRTP planning process; as such, they will be encouraged to participate in all events, and to involve their peers.

Membership: Steering Committee members are listed in the attached table.

Notification: E-mail from RSG Consultant Team member and/or designated BMTS staff person.

Schedule: First meeting April 25, 2019. Meetings will be conducted thereafter as needed to monitor progress and review interim and final documents and plan.

IV. STAKEHOLDER WORKING GROUP

Purpose: The Stakeholder Working Group will bring value to the planning process through their representation of key constituencies within the BMTS region. For example, there are representatives of travel modes including bicycling, trucking, rail, and aviation; special users including visually impaired and disabled individuals; key institutions including education and health care. While being expected to think regionally, they will share their views on things like transportation system needs and strategies. The key purpose is to advise the LRTP Steering Committee and BMTS staff.

Membership: See attached list

Schedule: As needed at key milestones in LRTP development

V. STAKEHOLDER MEETINGS, INTERVIEWS, AND FOCUS GROUPS

Purpose: Stakeholder meetings, interviews, and focus groups will be held as appropriate to ensure broad understanding of the purpose of the Long Range Transportation Plan planning process and solicit input from affected stakeholders. Up to three focus group meetings will be conducted.

Membership: Identified by the BMTS, Steering Committee, the Consultant Team, community groups and appropriate others.

Public Participation: Members of this list are notified of all meetings.

Schedule: As needed to gather input.

Interested Parties:

This preliminary list is not intended to be all inclusive. It represents potential key stakeholders and is subject to revision based on input from the BMTS, Steering Committee, and other stakeholders.

- Local, Regional, State, and Federal Agencies and Organizations
- Economic Development Interests/Major Employers
- Community Residents
- Passenger and Freight Transportation Providers
- Bicycling, Walking and Public Transportation
- Environmental/Advocacy Organizations

Focus groups will be created as recommended to gain broad input from specific stakeholder groups. Single meetings will be held with each group.

In cases where participation in focus groups is not possible, individual interviews will be held with key participants.

VI. PROJECT WEBSITE AND ONLINE SURVEY

Purpose: A project website will be created that will be linked to the BMTS website. The intent of the website will be to share draft report materials, gather community input and to announce project meetings and updates.

An online survey will be conducted as necessary to ensure broad understanding of the purpose of the Long Range Transportation Plan process and solicit input from the general public and stakeholders. The survey will be available online via the project website. Typical stakeholders include public transportation users, underserved populations, college students, and area businesses.

Public Participation: Organizations who represent these user groups. It is anticipated that BMTS staff, Steering Committee members, and volunteer organizations will assist the Consultant Team to gather the broadest amount of input. Members of this list are notified of all meetings.

Notification: E-mail list, public notices, web postings to direct stakeholders to online surveys.

Schedule: Project website will be launched in May 2019.

Interested Parties and Stakeholders:

- Participants from previous public engagement events, community residents, organizations and businesses.

VII. COMMUNITY OUTREACH AND PUBLIC MEETINGS

Community outreach is a fundamental element of a successful planning project and "Community Building" involves the community leadership, the general public, the private sector, and other organizations that are involved with community betterment and revitalization. Having the support of residents, business owners, and elected leaders for this project will ensure its long-term success of the plan.

The LRTP process will build on past efforts, focus attention on strategic investments, and identify other near-term projects that represent the next phase of development in and around the BMTS planning area. Communities and regional organizations have undertaken numerous planning programs in recent years that have built consensus and created strong momentum for implementation. Local and regional plans also address relevant transportation issues. Given the extensive amount of successful community engagement the region has completed it is important that the formal public engagement component of the LRTP process move ideas forward. Key tasks are likely to include:

- Gather broad input for the development of a community vision and LRTP goals and objectives
- Solicit Input to identify existing assets, challenges, transportation vision, goals, revitalization strategies, and projects.
- Solicit input for Final LRTP.

Purpose: At this time, a series of three formal events are planned: two community open houses and a public presentation. There will also be participation by BMTS staff and Consultant team members at existing community events that will be scheduled as appropriate.

Organized Community Events

Communities often come together to celebrate and enjoy local traditions, food, art, history. Depending upon when community events are scheduled in the context of LRTP development, the Project Team will 'go mobile' to collect information and input at a defined community event. Potential community events include the Farmers' Market and First Friday Art Walk, Owego Strawberry Festival (June 14-15), Stand for Children (June 6), BC Senior Picnic (June 19) and others. The concept includes these components: (1) set up a display with graphic boards, handouts, and related information; (2) conduct interactive activities that may generate enthusiasm and media attention (these might include a children's art contest – "draw a picture of what transportation looks like in 2045"; an interactive game – "How Many Ton-Miles Are In Your Breakfast"; or even a demonstration of an autonomous vehicle). Other ways to engage may include a tactical urbanism project, such as installing a temporary round-about or other improvement consistent with a recommendation contained in one of BMTS' Road Safety Audits, or biking and/or walking workshops.

Community Open House #1:

Community Open House events are a low-key method of gathering thoughtful input from a variety of interested prospective participants the might otherwise be intimidated to participate sharing their thoughts and ideas. The Open House events are set up with a series of stations that allow participants to use Post-it Notes, stickers and mapping exercises to express their input. There is the potential to include video displays and interactive games. As noted above, BMTS wants to use public engagement events to generate enthusiasm about the LRTP and the future of Greater Binghamton. These stations are set up around particular topic areas, specific questions and key sites that we are looking for ideas. The first Community Open House should take place after data collection and analysis and before the development of the Plan's vision, goals and objectives.

This event will be held on June 7th with an afternoon and evening session. The event will coincide with First Friday. The evening location is TBD.

Community Open House #2:

In late winter 2020 [TBD] a second Community Open House will be held. This event will build on feedback and information gathered during the first Open House. The event will provide community members with an opportunity to provide feedback regarding the draft vision, goals and recommendations of the LRTP.

Final Community Presentation:

In spring 2020 [TBD] a final presentation will be held. The event will include a brief large group presentation and open house to share a draft LRTP. Part education/part celebration, this event will be designed to solicit public input and build momentum for implementation among municipal partners, residents, the business community, regional leaders and likely developers and funding partners.

Participants: All members of the public, including interest groups identified above, individuals and other community groups, and targeted outreach to special groups including traditionally underserved residents, new employees, and college students.

Outreach: It is critical that excellent outreach be conducted to draw people to these events. The outreach methods will be refined with the Steering Committee and BMTS, considering what has worked (and what has not worked) in the past. As a foundation, the approach will include all traditional media and web outreach tools including:

- **Development of a Contact Database:** Contact information of those attending the Open Houses and other community event will be collected and added to a comprehensive outreach database. Available contact lists and information from past events provided by BMTS, will also be assembled and added to the database. This will form the basis for email distribution of information about the LRTP process and events.

- **Development of Outreach Materials**: The Consultant team will develop outreach materials for use at public workshops, meetings, events and other outreach opportunities. These will include, flyers, posters, content for email blasts, etc. Media releases will be prepared by the Consultant and distributed by BMTS.

- **Electronic Engagement Tools**: Electronic outreach and engagement tools including provision of a project website by the Consultant Team with a link from the BMTS website and posting on partner websites will be the foundation of this approach. Announcements will be available via these websites. Project schedule, workshop dates, minutes and public documents will continue to be posted. Other tools may be used by community members as they feel appropriate including Facebook, and Instagram. BMTS will provide contacts at any potential Facebook sites.
- **Coordination with Local Media (see media table):** Traditional methods like paper and electronic mailings, flyers, posters and informational brochures remain key tools. In close coordination with the BMTS, prior to public meetings, project-related local events and the release of Draft and Final Documents for public review, the RSG team will provide information to the BMTS. Announcements on local radio stations (see stations in Media Outlet Table) can also be undertaken if appropriate.
- **Additional Outreach:** Depending on the attendance at events through the process it may be necessary to retarget outreach to make sure that all stakeholder voices are heard. If necessary, more casual, face-to-face contact through engagement with faith-based groups, pop-up outreach (i.e., in-person/on-site) at community events, and piggybacking on existing meetings and events may be used. The Consulting team will take the lead on coordinating these sessions if they are necessary with support by the Steering Committee.
- **Incentivizing Participation:** Wherever possible, the Consulting team will incentive public participation; such as tying the art contest to an event and providing a prize to the winner, light snacks and coffee at open house events, small gift card giveaways; candy, small giveaways, or stickers at children's events.

Schedule: A schedule of public engagement will be developed by the Consultants, with input from the Steering Committee, and distributed to media outlets as appropriate. If possible future Steering Committee meetings and the first Open House will be scheduled early in the process, with alternative dates to accommodate potential weather challenges.

BMTS Policy and Planning Committee Meetings

Representatives from the Consultant team will attend Planning and Policy Committee meetings, as appropriate, to keep BMTS members informed and engaged.

VI. OTHER CONSULTATIONS, DISCUSSIONS AND REPORTING

Purpose: Regular ongoing formal and informal communication between the BMTS, Steering Committee, and the RSG Team for monitoring and smooth flow of all planning tasks.

Participants: BMTS Staff, Steering Committee, other planning partners, and the Consultant Team.

Notification: E-mail among participants.

Schedule: As needed with meeting notes.

Media Contacts: See media table.

Community Events

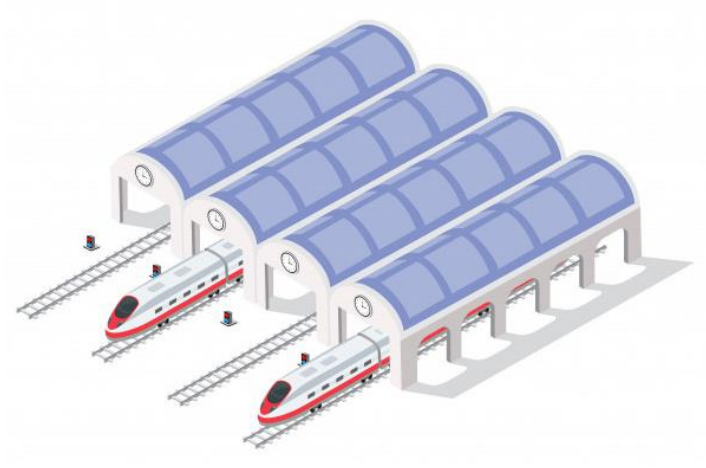
As part of the public outreach process, the BMTS team went "mobile" and attended a number of community events to collect input from community residents, business owners and representatives from not-for-profit organizations. The team manned a booth at the following events. All of the locations except for the Owego Strawberry Festival were accessible by public transportation. They were also all accessible to individuals of all ages and abilities.

These were each open house format, and people were not asked to register, so there is not a record of how many attended. All of the events with the exception of the Western Broome Open House were quite popular, and covered different demographics. Stand for Children is intentionally family oriented, with many exhibition and activity booths in the park, allowing us to speak with both children and parents. First Friday attracts large crowds. By locating our staff and posters on the sidewalk, we engaged many people. The Senior Picnic is a longstanding event with a well-established attendance and many exhibitors. Dozens of senior citizens stopped by the BMTS table.

PUBLIC OUTREACH EVENTS		
EVENT	LOCATION	DATE
Stand for Children	Binghamton Recreation Park	June 6, 2019
Binghamton First Friday Art Walk	Court Street	June 7, 2019
Owego Strawberry Festival	Main Street	June 15, 2019
Broome County Senior Picnic & Fun Fest	SUNY Broome	June 19, 2019
Western Broome Open House	Endicott Municipal Building	June 19, 2019

Stand for Children

Transportation Vision:



33.3% envision connectivity outside of Southern Tier – possibly through high-speed rail.

33.3% of respondents imagine a more walkabile community.

33.3% seek an increase in bicycle activity and infrastructure.

General Transportation Recommendations:

25.0%

Want improvements to bicycle ridership and infrastructure

25.0%

Foresee changes in transportation technology. (i.e. electric cars & autonomous vehicles)

37.5%

Call for enhancements to infrastructure, services, and accessibility.

Community Vision:

"A quiet valley with a safe, healthy, and happy population."

"Econonmic activity results from connections to NYC and other municipalities."

"Good walking opportunities and a strong sense of place."

Binghamton First Friday

Transportation Vision:

30.0% of respondants envision increased bicycle activity and infrastructure.

35.0% imagine improvements to the existing services.

Most Sought After Improvements:

35.5%

Infrastructure:

- Sidewalks
- Bike Lanes
- Bridges
- Roundabouts
- ADA complaint

29.0%

Service & Accessibility:

- Expanded Routes
- Weekend & Night Service
- More senior transportation

19.4%

Alternative Transit:

- Light-rail
- Autonomous Cars
- Renewable fueled vehicles

Community Vision:

"Attract new workers to the area."

"Create public attractions such as fountains."

"Improved downtown with better parking and events programming."

"Reliable, safe, and efficient."

Owego Strawberry Festival

Transportation Vision:

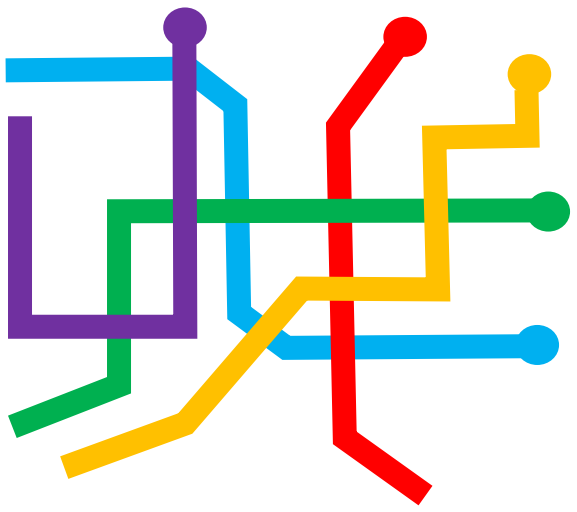
33.3% of respondants envision increased options and quality in public transit services.

28.6% imagine repairs and improvements to the existing infrastructure.

Community Vision:

"Restored public transit."

"Have options in transportation and services."



"Great walkable communities."

Priorities:

24.5%

Safety

19.2%

Infrastructure

13.2%

Transit

17.2%

Biking & Walkability

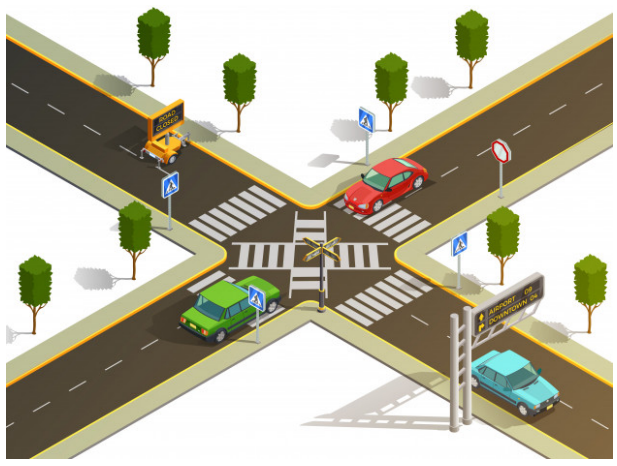
21.2%

Environment

Broome County Senior Picnic

Greatest Challenges in BC Transit:

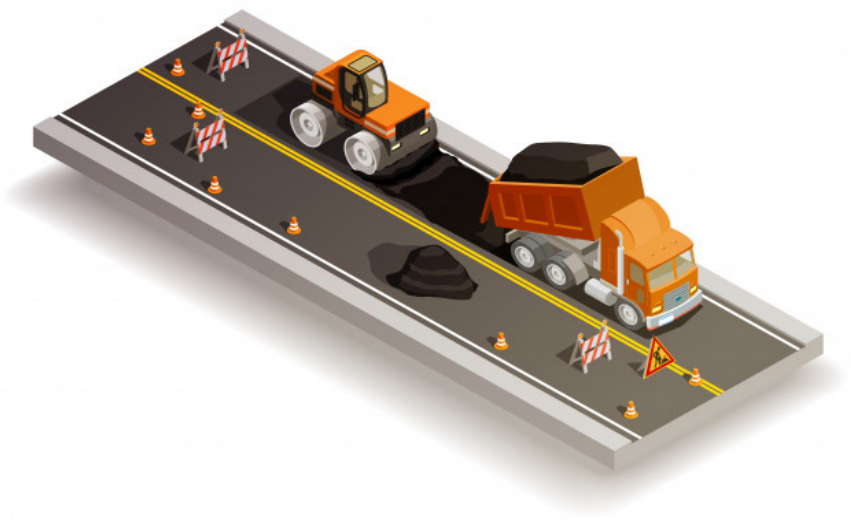
32.8% claim that the state of infrastructure is their primary challenge in utilizing BC Transit.



31.0% of respondants state accessibility to and quantity/quality of service options, affects their usage of the BC Transit.

Most Sought After Improvements to BC Transit:

Infrastructure & Technology	Service & Accessibility	Public Awareness & Driver Education	Affordability & Policy	Safety
32	28	6	2	8



Improvements to Broome County's Livability:

62.5% of reviewees want lowed taxes (school & property) and improved affordability in housing and services.

Transportation Ratings:

38.7% of respondents claim that the transportation services and infrastructure are POOR.

46.2% of claim service and infrastructure conditions are AVERAGE.

15.1% state that services and infrastructure are of GREAT quality.

Online Community Survey

With the advent of COVID-19 and the subsequent New York State regulations requiring physical distancing and barring gatherings, BMTS was required to modify its approach to public engagement on the Long Range Transportation Plan.

The public has a great deal to offer in describing what they see as the most important for the regional transportation system. The primary means of gathering this input was through a survey instrument. The survey asked about needs under the framework that has been developed: infrastructure, safety, mobility, and environment; across all modes. It will also provide an opportunity to state priorities. The availability of the survey was announced via:

- BMTS LRTP website
- BMTS Facebook page
- Media announcement with active follow up (calls to television, radio, and newspaper new directors)
- Requests to partner organizations to use their email contact lists and websites to publicize the survey (Broome and Tioga County Office for Aging, Chambers of Commerce, Rural Health Network of South Central New York, others).

The Community Survey, which was open from May 25 to June15, 2020, received a total of 143 responses. A summary is provided.

Binghamton Metropolitan Transportation Study (BMTS)
Long Range Transportation Plan
Community Survey Summary

Survey Open from: May 26 to June 15

143 Total Reponses

Summary Analysis

Q1: Thinking about where you travel, tell us about specific roads or bridges that are in need of repair?

Answered: 97 Skipped: 46

Answers provided numerous roadways and bridges needing to be repaired or replaced across Broome and Tioga County. Many respondents mentioned that roads were inadequate due to poor and unsafe pavement conditions, and lacked accommodations for other modes of transportation. Others sited bridges that were unsafe due narrow lanes and the absence of shoulders, poor pavement conditions, and in certain instances compromised structural integrity.

Sample Responses:

“Route 17C, which is our Main Street. Route 26 north which is our Nanticoke Drive. Both are state roads in need of repairs.”

“Most roads and some bridges are in horrible shape and finding a safe, smooth lane to drive is extremely difficult. Avoiding dangerously large potholes is a challenge.”

“Owego Road Vestal, Vestal Parkway West of African Road joint failures to NYS Route 26, NYS Route 17C Endicott/Union, Route 17 Owego, NYS Route 88.”

"Upper Front St. near SUNY Broome needs some repair. Walk Bridge in Dickinson is in serious disrepair and poses a safety issue for those on the bridge and those who drive under the bridge on I-81.”

“Rt 434; In Vestal: Burris Rd; Old Vestal Rd; Jensen Rd.”

“Main Street, City of Binghamton (Front St. to City Line), Floral Ave. Binghamton, including the portion in Johnson City. Improved shoulders on Vestal road (to better accommodate cyclists). Conklin Ave. (from Exchange to South Washington St. this should also include Bike Lanes), completion & relocation of the pedestrian bridge at Bevier St. over I81.. reconfiguration of Upper Court St. to accommodate bike lanes (three lanes plus bike lanes), Broad Ave (entire length).”

“Owego Road Vestal, Vestal Parkway West of African Road joint failures to NYS Route 26, NYS Route 17C Endicott/Union, Route 17 Owego, NYS Route 88.”

“Rt 96 from Owego to Ithaca, Rt 17/I86 from Owego to Endicott.”

Q2: Please list any locations where you experience everyday congestion and/or any locations where you experience unexpected traffic jams.

Answered: 101 Skipped: 42

Summary Analysis - Congestion

Roadway	Frequency*
Vestal Parkway/Rt 434	37
Rt 12A	9
Rt 201	9
Vestal Rd	7
Front St	6
Court St	6
Tompkins St	5
Vestal Ave	4
Reynolds Rd	4
Rt 17 C/Main St	3
Brandywine Highway	3
Glenwood Ave	3
Hooper Rd	3
Main St (Binghamton)	3
Riverside Dr	2
Nanticoke Ave	1
Pleasant Run Rd	1
Northshore Dr	1
Conklin Ave	1
Rt 38	1

**Single response can be counted in multiple categories*

Summary Analysis – Traffic Jams

Roadway	Frequency*
Rt 201	8
Vestal Parkway	5
Front St	5
Rt 17	4
Tompkins St	2
Riverside Dr	1
Rt 12A	1
Vestal Ave	1
Robison St (Underpass)	1
Rt 17C/Main St	1
Hooper Rd	1
1-81	1
Rt 26	1
Court St	1
Vestal Rd	1
Reynolds Rd	1
Brandywine Highway	1

**Single response can be counted in multiple categories*

Q3: Please list any locations you think are unsafe, and what you think could be done to make them safer.

Answered: 74 Skipped: 69

Answers highlighted roadways needing safety improvements, the most common being the Vestal Parkway and its many intersections, Park Avenue (in the City of Binghamton), Route 201, and Riverside Drive (in the Village of Johnson City). Proposed improvements to these and other roadways included the extension of lanes accessing on-ramps, widening of roads, and greater pedestrian and bicyclist accommodations.

Sample Responses:

"Vestal Parkway…I see people walking or riding their bikes on the busy highway all the time. A sidewalk should be built adjacent to protect these people."

"The on-ramp from 17C to 17 in the Town of Union (between Johnson City and Endwell on the westbound side) - the traffic on 17 only has 2 travel lanes there, since the 3rd lane ends at the off-ramp for Exit 69. A way to make it safer would be to extend the 3rd travel lane past the on-ramp from 17C, perhaps to the end of the acceleration lane for the on-ramp."

"Hooper Rd needs to be widened and lanes added. Areas north of country club is seeing additional traffic and an area where growth is likely to happen."

"Vestal parkway/ Brandywine/ Rt 12 from Chenago Bridge to Chenango Forks - Pedestrian crossings with traffic 4 lanes wide and moving at 45+ mph is dangerous. Rt 12 is a bicycle route and the share a narrow roadway with very little shoulder. Create a move defined bicycle path and separate from automobile traffic when there is one lane and very little or no shoulder. Very dangerous area is on rt. 12 between Kettelville hill and Chenago Forks."

"Isbell St, in front of North Shore Towers and parking garage entrance. Currently, there is parking allowed on both sides of the street, loading and unloading in front of the apt. bldg, and cars exiting and entering the parking garages. Add pedestrians to the mix, and it's just dangerous through that short stretch of road! I suggest a loading zone to the side of the building and limiting parking to one side of the street only."

Q4: Public Transportation Services

Public transit provides a way to get around for people who don't drive, don't have access to a car, or simply prefer not to drive. Broome County operates BC Transit bus service, BC Lift for people with disabilities, and BC Country in the rural area. Binghamton University's Off-Campus College operates a bus service for students and staff.

BC Transit Ridership

Frequency	Percentage
Daily	2%
At Least Once a Week	5%
Infrequently	23%
Never	70%

BC Transit Services

Q4 Con't: Public Transportation Services

Public transit provides a way to get around for people who don't drive, don't have access to a car, or simply prefer not to drive. Broome County operates BC Transit bus service, BC Lift for people with disabilities, and BC Country in the rural area. Binghamton University's Off-Campus College operates a bus service for students and staff.

BC Lift Ridership

Frequency	Percentage
Daily	0.8%
At Least Once a Week	0.8%
Infrequently	2%
Never	96%

BC Lift Services

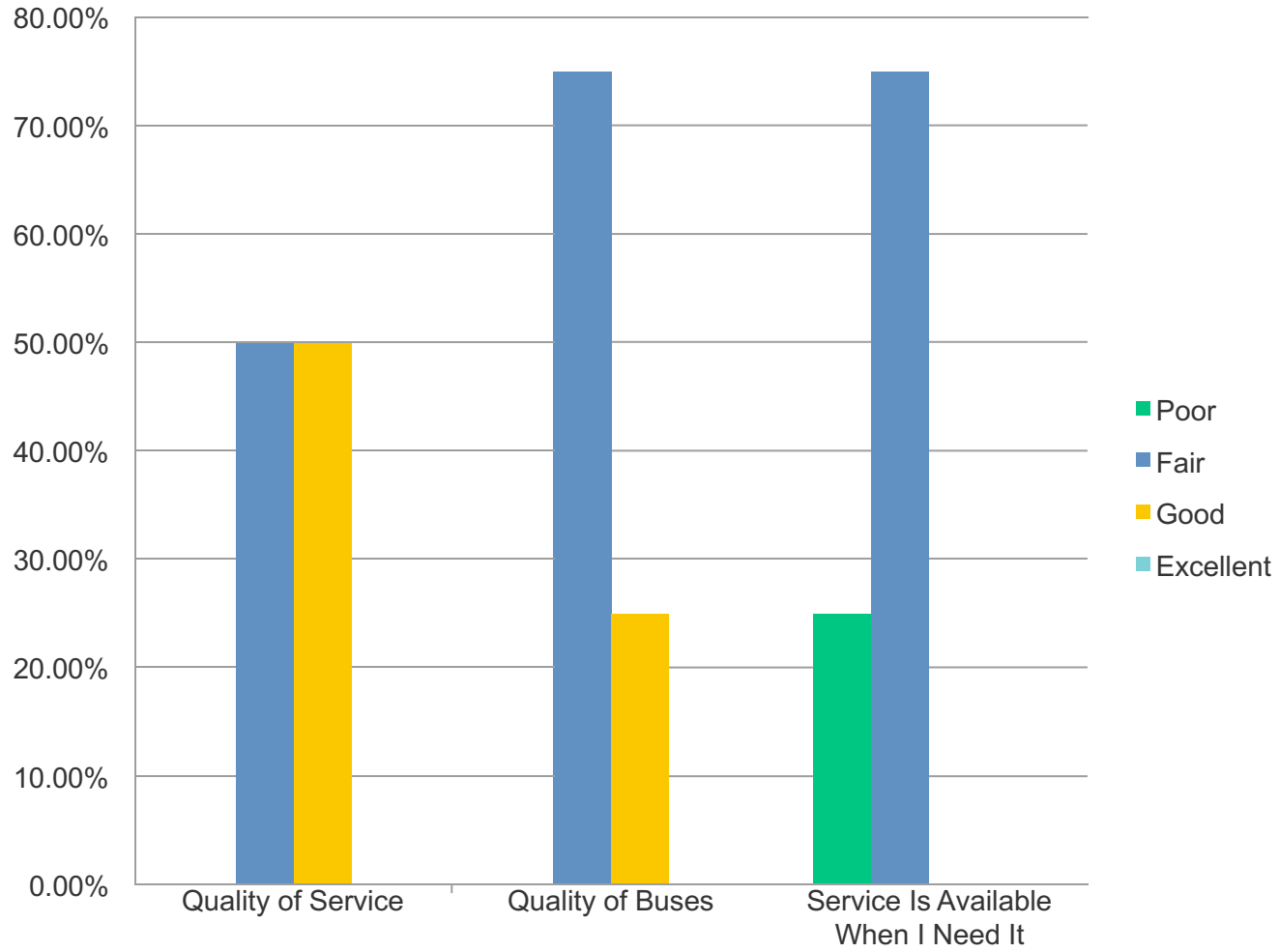
Q4 Con't: Public Transportation Services

Public transit provides a way to get around for people who don't drive, don't have access to a car, or simply prefer not to drive. Broome County operates BC Transit bus service, BC Lift for people with disabilities, and BC Country in the rural area. Binghamton University's Off-Campus College operates a bus service for students and staff.

BC County Ridership

Frequency	Percentage
Daily	0%
At Least Once a Week	0.8%
Infrequently	2%
Never	98%

BC County Services



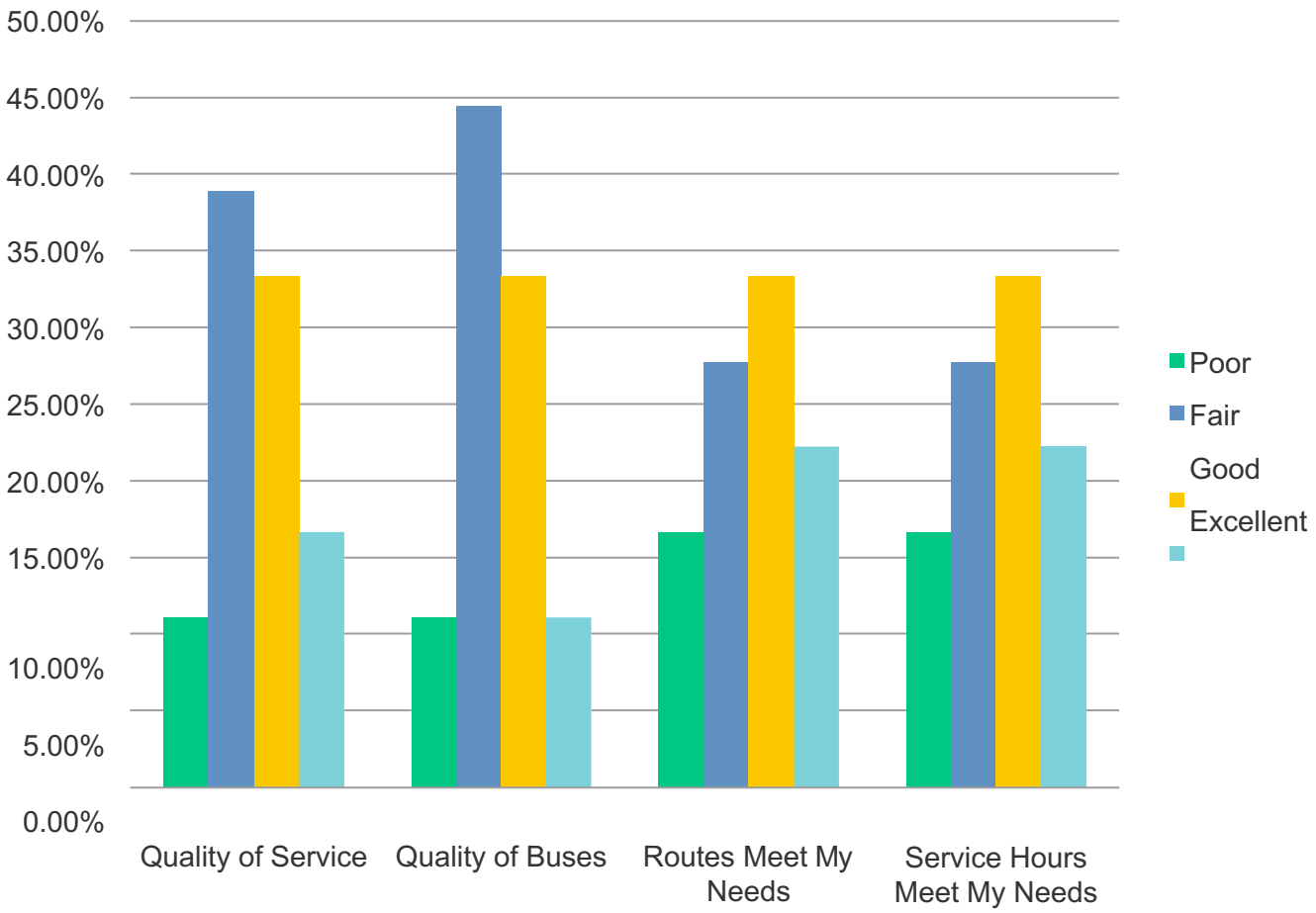
Q4 Con't: Public Transportation Services

Public transit provides a way to get around for people who don't drive, don't have access to a car, or simply prefer not to drive. Broome County operates BC Transit bus service, BC Lift for people with disabilities, and BC Country in the rural area. Binghamton University's Off-Campus College operates a bus service for students and staff.

BU OCC Ridership

Ridership	Percentage
Daily	6%
At Least Once a Week	6%
Infrequently	88%
Never	0%

BU OCC Services



Q5: What improvements would you make to transit service?

Answered: 52 Skipped: 91

A majority of responses stated there needed to be an extension of bus schedules in addition to more buses on routes so they came more frequently. Many also mentioned the expanding routes to target populations outside of the urbanized areas in Broome and Tioga County, and to retails centers within it.

Sample Responses:

"Improved access for those in rural regions to access the education system (like SUNY Broome)."

"More frequent head times, lower rates, and smaller buses for certain routes, also smaller buses could be used on certain routes to accommodate 2nd & 3rd shift workers and corporate park businesses. Possible van pools for corporate parks, paid for in part by the businesses located there."

"I would extend BU OCC transit to go to Weiss Market, which is a cheaper option than Wegmans and is closer to campus."

"Increased frequency of routes outside of downtown core; possible express service between hubs."

"Better notice when the bus will arrive."

"Increase number of buses per route. Every twenty minutes."

Q6: If you do not use any of the transit services, please tell us why?

Answered: 97 Skipped:46

A majority of responses stated they didn't need to use public transportation because they had personal vehicles. Respondents stated that they would consider this mode of travel as they grew older and could no longer drive. Many stated that they wouldn't chose public transportation over their personal vehicles.

Q7: Tell us about your bicycle use.

Answered: 135 Skipped:8

Response	Percentage
For My Primary Means of Transportation	3%
Only for Recreation	58%
Never	39%

Q7 Con't: What kind of streets, or which specific streets, do you find safe for your bike travels?

Answered: 77 Skipped: 66

A majority of responses stated that they use designated bike trails and/or roadways with wide shoulders, protected bike lanes, and little traffic (side streets, neighborhood streets etc.)

Q7 Con't: Are there places you need to travel, or would like to go, but don't ride your bike because you feel unsafe?

Answered: 75 Skipped: 68

A majority of responses stated there were places and or roads they'd travel on or to if conditions were safer and that safety concerns kept them from riding more.

Sample Responses:

"I never bike on the roadway of the bridge on Bridge Street in Vestal because it is too narrow for both cars and bikes; I always ride on the sidewalk on this bridge because of this."

"Any bicycle route that shares roadway that is narrow without much shoulder and doesn't separate from automobiles."

"I could ride my bike to work. But Leroy St. is always so congested with parked cars and Riverside does not feel like it has the proper space to ride safely since it is heavily trafficked."

Q8: Tell us about your experiences as a pedestrian.

Answered: 137 Skipped: 6

Frequency	Percentage
For My Primary Means of Transportation	7%
Just to Access Another Mode (like to the bus stop)	4%
Only for Recreation	78%
Never	11%

Q8 Con't: Tell us about problem locations, and improvements that would make walking safer or more convenient.

Answered: 83 Skipped: 60

A majority of responses stated that generally poor pavement conditions across Broome and Tioga County made it unsafe or undesirable to walk. Others also mentioned there was a lack of connectivity in the sidewalk networks causing pedestrians to walk in the street. Connectivity was also an issue in rural areas where persons who lived outside the Village or Town center couldn't walk to it do to the absence of amenities and safety concerns. Respondents also stated there was not enough accessibility for persons of varying physical abilities, especially at roadway intersections. There were also comments about bikers using the sidewalks and not the roadways, with respondents stating that this was due to poor roadway pavement conditions; in turn this made them less likely to walk out of their own safety concerns.

Sample Responses:

"They should add sidewalks for Otseningo St, a lot of people walk in the middle of the street because there is a couple of blocks that don't have any sidewalks, the Vestal Parkway should have a sidewalk from Vestal all the way to Binghamton."

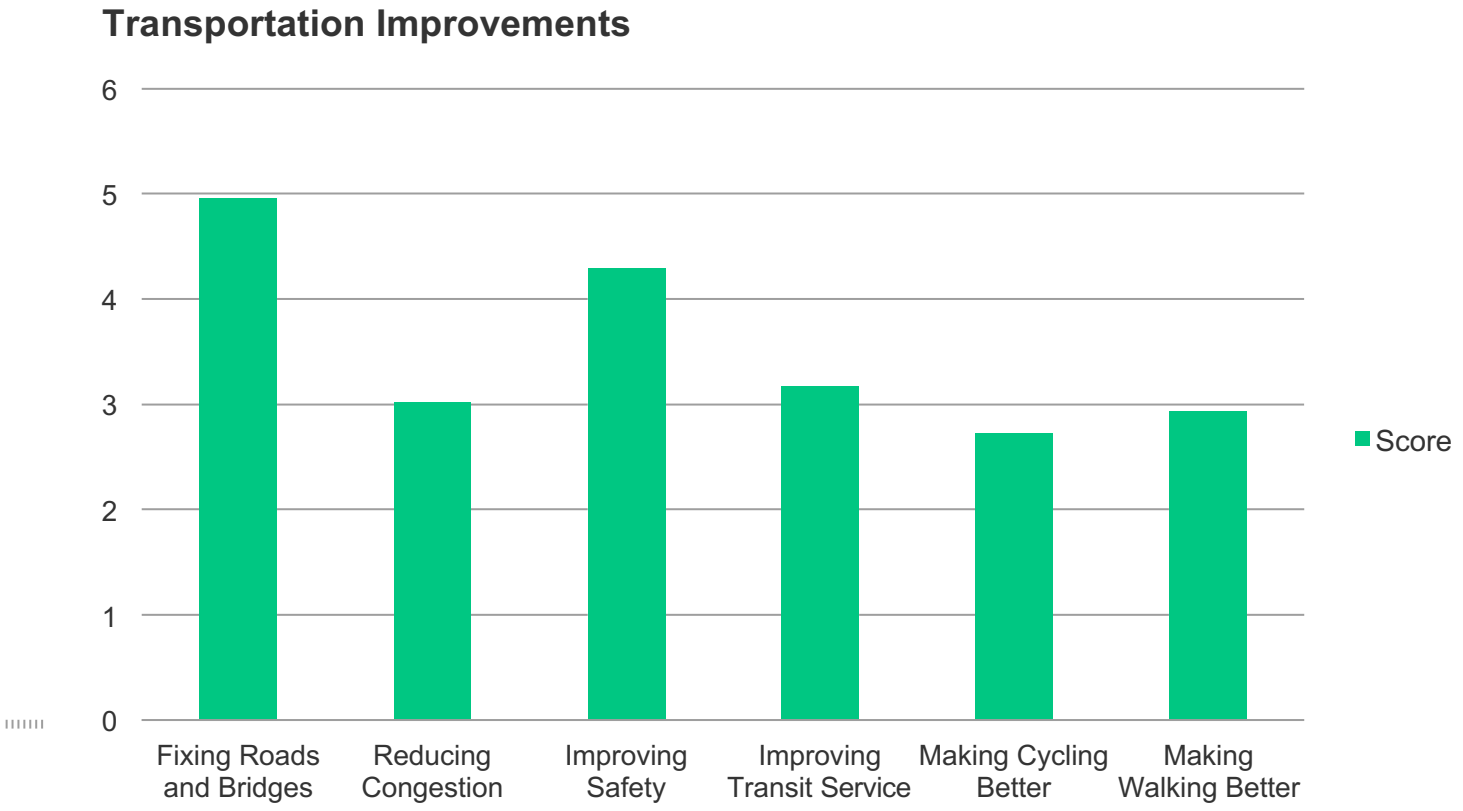
"There needs to be a rule that when construction occurs, provisions have to be made for pedestrians on the same side of the street. I've seen too many seniors or physically disabled people in the street because it would take them too long to cross."

"Sidewalks are sometimes poorly maintained…There are also many bikers who take up space on the sidewalks."

Q9: What are your priorities for improving transportation?

Answered: 138 Skipped: 5

Improvements were ranked by respondents from 1 (liked best) to 6 (liked least).



Q10: Please feel free to tell us how the COVID-19 pandemic has changed your travel

Answered: 111 Skipped: 32

A majority of responses stated they have been traveling less because they have the ability to work from home. Those that did go to work expressed a more enjoyable commute as there was less traffic. Several responses expressed a weariness of using public transportation in the future in regards to cleanliness and general safety of riders.

Virtual Town Hall

The last step in the public engagement planning process was for the BMTS to conduct a Virtual Town Hall, which allowed for a brief presentation on the proposed solutions and the process used to arrive at them; followed by the opportunity for questions and comments from the viewers.

A concise document listing recommended solutions was posted on the BMTS LRTP website, and linked to the BMTS website, Facebook page, and other locations.

The online event, which was hosted via Zoom, was held on June 30, 2020 at 6:30 pm can be viewed on Facebook: https://www.facebook.com/BMTSBinghamton/.

A copy of the presentation slides used during the online event are provided.

Summary: Value of Public Input

BMTS found information gathered from all of the public outreach to be very valuable in the planning process. Much of the input was used in developing the Needs sections of the LRTP. While data and analytics are important to that work, BMTS found that members of the public had important perspectives that might otherwise be missed. For example, comments made by senior citizens at the SUNY Broome event about challenges using both fixed-route bus and paratransit services would not have been gleaned from ridership data. Examples included difficulty waiting at bus stops in winter weather, or in walking to the bus.

Similarly, the information offered in the online survey about travel changes in response to COVID-19 were enlightening, as were the identification of specific locations where there are perceived safety concerns.

These efforts confirmed the value of engaging the public to create a more responsive LRTP.

APPENDIX E.
TRANSPORTATION SYSTEM DATA

The data used to support the LRTP are included in the same order as in the plan.

Demographic Data

Demographic data are presented in Table E-1 through Table E-9. Population data was obtained from the US Census. Population forecasts were obtained from Cornell Program on Applied Demographics and IHS Global Insight. These data are all at the County level.

TABLE E-1: US CENSUS DATA

US CENSUS	BROOME COUNTY	% CHANGE	TIOGA COUNTY	% CHANGE	BROOME + TIOGA	
1950	184,698	–	30,166	–	214,864	–
1960	212,661	15.1%	37,802	25.3%	250,463	16.6%
1970	221,815	4.3%	46,513	23.0%	268,328	7.1%
1980	213,648	-3.7%	49,812	7.1%	263,460	-1.8%
1990	212,102	-0.7%	52,484	5.4%	264,586	0.4%
2000	200,197	-5.9%	51,809	-1.3%	252,006	-5.0%
2010	200,675	0.2%	51,010	-1.6%	251,685	-0.1%
2018 Estimated	191,659	-4.7%	48,560	-5.0%	240,219	-4.8%

Source: US Census Bureau

TABLE E-2: POPULATION FORECAST, BY DECADE (TO 2040)

YEAR	BROOME COUNTY	% CHANGE	TIOGA COUNTY	% CHANGE	BROOME + TIOGA	
2010	200,675	–	51,010	–	251,685	–
2020	192,262	-4.4%	47,864	-6.6%	240,126	-4.8%
2030	186,950	-2.8%	45,090	-6.2%	232,040	-3.5%
2040	183,176	-2.1%	42,696	-5.6%	225,872	-2.7%

Source: Cornell Program on Applied Demographics

TABLE E-3: POPULATION FORECAST, BY DECADE (TO 2040)

YEAR	BROOME COUNTY	% CHANGE	TIOGA COUNTY	% CHANGE	BROOME + TIOGA	
2010	200,675	–	51,010	–	251,685	–
2020	197,716	-1.5%	51,220	0.4%	248,936	-1.1%
2030	197,672	0.0%	50,812	-0.8%	248,484	-0.2%
2040	196,088	-0.8%	50,320	-1.0%	246,408	-0.8%

Source: IHS Global Insight

TABLE E-4: POPULATION FORECAST, BY DECADE (TO 2040)

YEAR	BROOME COUNTY	% CHANGE	TIOGA COUNTY	% CHANGE	BROOME + TIOGA	
2010	200,675	–	51,010	–	251,685	–
2020	194,989	-2.9%	49,542	-3.0%	244,531	-2.9%
2030	192,311	-1.4%	47,951	-3.3%	240,262	-1.8%
2040	189,632	-1.4%	46,508	-3.1%	236,140	-1.7%

Source: RSG

TABLE E-5: POPULATION AND FORECAST, AGE > 65

YEAR	BROOME COUNTY		TIOGA COUNTY		BROOME + TIOGA	
	Number	% of total pop.	Number	% of total pop.	Number	% of total pop.
1990	30,769	14.5%	5,445	10.4%	36,214	13.7%
2000	32,266	16.1%	6,654	12.8%	38,920	15.4%
2010	35,731	17.8%	7,761	15.2%	43,492	17.3%
2020	45,483	23.3%	10,666	21.5%	56,149	23.0%
2030	54,601	28.4%	13,277	27.7%	67,878	28.3%
2040	58,148	30.7%	14,142	30.4%	72,290	30.6%

Source: IHS Global Insight

TABLE E-6: TOTAL NONFARM EMPLOYMENT FORECAST

YEAR	BROOME COUNTY	% CHANGE	TIOGA COUNTY	% CHANGE	BROOME + TIOGA	
2010	95,352	–	13,981	–	109,333	–
2020	100,116	4.8%	14,556	4.0%	114,672	4.7%
2030	100,997	0.9%	14,277	-2.0%	115,274	0.5%
2040	101,861	0.8%	14,217	-0.4%	116,078	0.7%

Source: IHS Global Insight

TABLE E-7: SERVICE SECTOR EMPLOYMENT FORECAST

YEAR	BROOME COUNTY	% CHANGE	TIOGA COUNTY	% CHANGE	BROOME + TIOGA	
2010	59,280	–	6,232	–	65,512	–
2020	64,284	7.8%	6,877	9.4%	71,161	7.9%
2030	65,627	2.0%	7,008	1.9%	72,635	2.0%
2040	67,476	2.7%	7,273	3.6%	74,749	2.8%

Source: IHS Global Insight

TABLE E-8: EDUCATION AND HEALTH CARE SECTOR EMPLOYMENT FORECAST

YEAR	BROOME COUNTY	% CHANGE	TIOGA COUNTY	% CHANGE	BROOME + TIOGA	
2010	15,162	–	1,230	–	16,392	–
2020	16,990	10.8%	1,346	8.6%	18,336	10.6%
2030	17,389	2.3%	1,389	3.1%	18,778	2.4%
2040	17,880	2.7%	1,453	4.4%	19,333	2.9%

Source: IHS Global Insight

TABLE E-9: EMPLOYMENT PER CAPITA

YEAR	BROOME COUNTY	% CHANGE	TIOGA COUNTY	% CHANGE	BROOME + TIOGA	
2010	0.48	–	0.27	–	0.43	–
2020	0.51	7.5%	0.29	6.7%	0.47	7.4%
2030	0.53	2.2%	0.30	1.3%	0.48	2.3%
2040	0.54	2.2%	0.31	2.6%	0.49	2.4%

Source: IHS Global Insight

Asset Data

Ownership

Table E-10 presents centerline mileage sorted by functional class, and Table E-11 presents centerline mileage sorted by jurisdiction. Table E-12 presents centerline mileage by municipal owner and sorts this by functional class.

TABLE E-10: CENTERLINE MILEAGE, BY FUNCTIONAL CLASS

FC CODE	FUNCTIONAL CLASS DESCRIPTION	BROOME COUNTY (BMTS PLANNING AREA)		TIOGA COUNTY (BMTS PLANNING AREA)		TOTAL BMTS CENTERLINE MILES	% COMBINED TOTAL
		Centerline Miles	%	Centerline Miles	%		
1	Rural Principal Arterial Interstate	25.37	1.71%		0.00%	25.37	1.71%
2	Rural Principal Arterial Expressway	14.87	1.00%	10.72	1.57%	25.59	2.57%
4	Rural Principal Arterial Other	2.88	0.19%		0.00%	2.88	0.19%
6	Rural Minor Arterial	4.57	0.31%	15.95	2.33%	20.52	2.64%
7	Rural Major Collector	28.7	1.94%	36.93	5.40%	65.63	7.34%
8	Rural Minor Collector	81.64	5.51%	95.31	13.94%	176.95	19.45%
9	Rural Local	302.58	20.43%	329.94	48.26%	632.52	68.69%
11	Urban Principal Arterial Interstate	84.3	5.69%		0.00%	84.3	5.69%
12	Urban Principal Arterial Expressway	48.15	3.25%	46.15	6.75%	94.3	10.00%
14	Urban Principal Arterial Other	15.41	1.04%	3.76	0.55%	19.17	1.59%
16	Urban Minor Arterial	114.06	7.70%	37.6	5.50%	151.66	13.20%
17	Urban Major Collector	156.92	10.60%	22.96	3.36%	179.88	13.95%
18	Urban Minor Collector	3.61	0.24%	0.57	0.08%	4.18	0.33%
19	Urban Local	597.83	40.37%	83.81	12.26%	681.64	52.63%
	Total	**1,480.89**	**100.00%**	**683.7**	**100.00%**	**2,164.59**	**200.00%**

Source: NYS Department of Transportation, Engineering Division, Roadway Inventory System, NYS GIS Clearinghouse, Region 9 2018
https://gis.ny.gov/gisdata/inventories/member.cfm?organizationID=539

TABLE E-11: CENTERLINE MILEAGE, BY JURISDICTION TYPE

MAINTENANCE JURISDICTION	BROOME COUNTY *(BMTS PLANNING AREA)* LANE MILES	%	TIOGA COUNTY *(BMTS PLANNING AREA)* LANE MILES	%	COMBINE TOTAL LANE MILES	% BY OWNER	TOTAL FEDERAL AID LANE MILES	% BY OWNER
NYSDOT	635.38	20.90%	235.14	17.58%	870.52	19.88%	**865.76**	**61.7%**
County	441.35	14.52%	162.96	12.18%	604.31	13.80%	**300.42**	**21.4%**
Town	1,414.64	46.53%	894.31	66.86%	2,308.95	52.74%	**103.28**	**7.3%**
City or village	509.93	16.77%	40.82	3.05%	550.75	12.58%	**134.89**	**9.6%**
State Parks	11.06	0.0036%	0.00	0.00%	11.06	0.25%	-	-
Local Parks	0.12	-	1.34	0.10%	1.46	0.03%	-	-
Other State agencies	18.42	0.61%	0.00	-	18.42	0.42%	-	-
Private or Restricted Access	9.17	0.31%	3.11	0.23%	12.48	0.29%	-	-
Total	**3,040.27**	**100.00%**	**683.7**	**100.00%**	**2,164.59**	**100.00%**	**1,403.45**	**100%**

Source: NYS Department of Transportation, Engineering Division, Roadway Inventory System, NYS GIS Clearinghouse, Region 9 2018
https://gis.ny.gov/gisdata/inventories/member.cfm?organizationID=539

TABLE E-12: CENTERLINE MILEAGE BY MUNICIPAL OWNER, BY FUNCTIONAL CLASS

MUNICIPALITY	1	2	4	6	7	8	9	11	12	14	16	17	18	19	TOTAL
Binghamton	–	–	–	0.2	5.3	10.5	22.8	–	–	–	1.4	8.0	–	23.8	**72.0**
Binghamton (City)	–	–	–	–	–	–	–	15.0	10.4	2.0	17.4	25.8	–	118.5	**189.0**
Candor	–	–	–	8.1	12.1	20.3	118.7	–	–	–	0.9	–	–	0.1	**160.1**
Candor (V)	–	–	–	1.2	0.5	–	2.9	–	–	–	–	–	–	–	**4.7**
Chenango	11.3	–	2.9	–	2.2	1.0	20.3	6.1	–	5.0	6.0	16.0	–	49.2	**120.0**
Conklin	–	–	–	–	–	6.6	13.4	–	–	–	6.6	11.4	–	34.1	**72.2**
Dickinson	–	–	–	–	–	–	–	5.3	1.6	–	3.0	3.7	–	14.4	**28.0**
Endicott (V)	–	–	–	–	–	–	–	–	0.5	–	4.4	8.7	–	33.5	**47.1**
Fenton	–	–	–	1.2	8.4	8.3	38.0	16.1	0.3	0.1	1.6	9.3	–	16.4	**99.6**
Johnson City (V)	–	–	–	–	–				9.6	1.1	6.3	7.3	–	39.8	**64.1**
Kirkwood	0.3	–	–	0.0	–	6.3	21.8	37.8	0.4	–	7.6	15.6	0.2	28.7	**118.8**
Maine	–	–	–	3.2	2.7	11.9	44.2	–	–	–	14.9	5.9	1.2	17.0	**100.9**
Nichols	–	9.7	–	2.1	0.1	17.0	44.7	–	4.2	0.6	–	3.2	–	1.9	**83.4**
Nichols (V)	–	1.0	–	1.0	–	0.2	1.7	–	–	–	–	–	–	–	**3.9**
Owego	–	–	–	3.5	4.5	34.5	90.1	–	39.5	0.8	31.1	10.2	–	67.1	**281.3**
Owego (V)	–	–	–	–	–	–	–	–	2.4	2.4	3.0	4.0	–	12.2	**24.1**
Port Dickinson (V)	–	–	–	–	–	–	–	0.0	1.9	0.4		1.7	–	4.0	**8.1**
Tioga	–	–	–	–	19.8	23.3	71.8	–	–	–	2.6	5.6	0.6	2.6	**126.2**
Union	–	–	–	–	–	–	–	–	7.7	–	22.9	20.2	–	115.5	**166.2**
Vestal	–	–	–	–	–	9.0	25.4	–	15.7	6.8	22.0	23.4	–	94.7	**197.0**
Windsor	12.1	13.5	–	–	8.8	26.7	112.8	4.0	–	–	–	–	2.3	8.2	**188.4**
Windsor (V)	1.6	1.4	–	–	1.2	1.5	3.9	–	–	–	–	–	–	–	**9.6**
Total	**25.4**	**25.6**	**2.9**	**20.5**	**65.6**	**177.0**	**632.5**	**84.3**	**94.3**	**19.2**	**151.7**	**179.9**	**4.2**	**681.6**	**2,164.6**

Source: NYSDOT

Pavement Data

BMTS Ratings, Nonstate System

BMTS rates all federal-aid eligible roadways off the State highway system, using the NYSDOT visual scoring method (Table E-13 through Table E-18).

TABLE E-13: BMTS PAVEMENT SUFFICIENCY RATINGS ANALYSIS FOR EACH MUNICIPALITY—PERCENTAGE FOR EACH RATING CLASSIFICATION* (2018)

MUNICIPALITY	ABRV.	[C] CONSTRUCTION	[1-5] POOR	[6] FAIR	[7-8] GOOD	[9-10] EXCELLENT
Broome County	BCo	0.0%	5.9%	14.1%	56.3%	23.7%
City of Binghamton	CB	0.0%	8.2%	19.4%	51.5%	20.9%
Town of Binghamton	TB	0.0%	0.0%	0.0%	75.0%	25.0%
Town of Chenango	TCh	0.0%	0.0%	0.0%	100.0%	0.0%
Town of Dickinson	TD	0.0%	0.0%	0.0%	100.0%	0.0%
Town of Fenton	TF	0.0%	0.0%	14.3%	57.1%	28.6%
Town of Kirkwood	TK	0.0%	40.0%	20.0%	20.0%	20.0%
Town of Union	TU	4.8%	9.5%	38.1%	38.1%	9.5%
Town of Vestal	TV	0.0%	16.7%	33.3%	46.7%	3.3%
Village of Endicott	VE	2.4%	28.6%	26.2%	31.0%	11.9%
Village of Johnson City	VJC	3.8%	34.6%	19.2%	38.5%	3.8%
Village of Port Dickinson	VPD	0.0%	16.7%	16.7%	66.7%	0.0%
Tioga County	TCo	0.0%	0.0%	14.3%	78.6%	7.1%
Town of Owego	TO	0.0%	0.0%	12.5%	37.5%	50.0%
Town of Tioga	TT	0.0%	0.0%	50.0%	50.0%	0.0%
Village of Owego	VO	0.0%	0.0%	6.3%	81.3%	12.5%
	ALL	**0.7%**	**10.9%**	**19.0%**	**51.7%**	**17.7%**

[C] - under construction
** - Percentages may not add up to 100% due to rounding function*

TABLE E-14: BMTS PAVEMENT SUFFICIENCY RATINGS ANALYSIS FOR EACH MUNICIPALITY—PERCENTAGE FOR EACH RATING CLASSIFICATION* (2017)

MUNICIPALITY	ABRV.	[C] CONSTRUCTION	[1-5] POOR	[6] FAIR	[7-8] GOOD	[9-10] EXCELLENT
Broome County	BCo	0.0%	4.4%	17.0%	51.1%	27.4%
City of Binghamton	CB	1.5%	6.0%	17.9%	47.0%	27.6%
Town of Binghamton	TB	0.0%	12.5%	0.0%	87.5%	0.0%
Town of Chenango	TCh	0.0%	0.0%	0.0%	100.0%	0.0%
Town of Dickinson	TD	0.0%	0.0%	0.0%	100.0%	0.0%
Town of Fenton	TF	0.0%	0.0%	0.0%	71.4%	28.6%
Town of Kirkwood	TK	0.0%	0.0%	40.0%	60.0%	0.0%
Town of Union	TU	0.0%	14.3%	42.9%	23.8%	19.0%
Town of Vestal	TV	0.0%	16.7%	26.7%	53.3%	3.3%
Village of Endicott	VE	0.0%	31.0%	26.2%	31.0%	11.9%
Village of Johnson City	VJC	0.0%	34.6%	15.4%	34.6%	15.4%
Village of Port Dickinson	VPD	0.0%	16.7%	0.0%	83.3%	0.0%
Tioga County	TCo	0.0%	0.0%	0.0%	71.4%	28.6%
Town of Owego	TO	0.0%	12.5%	12.5%	37.5%	37.5%
Town of Tioga	TT	0.0%	0.0%	50.0%	50.0%	0.0%
Village of Owego	VO	0.0%	0.0%	6.3%	68.8%	25.0%
	ALL	**0.4%**	**10.3%**	**18.3%**	**48.9%**	**22.1%**

[C] - under construction
** - Percentages may not add up to 100% due to rounding function*

TABLE E-15: BMTS PAVEMENT SUFFICIENCY RATINGS ANALYSIS FOR EACH MUNICIPALITY—PERCENTAGE FOR EACH RATING CLASSIFICATION* (2016)

MUNICIPALITY	ABRV.	[C] CONSTRUCTION	[1-5] POOR	[6] FAIR	[7-8] GOOD	[9-10] EXCELLENT
Broome County	BCo	3.7%	5.9%	20.7%	60.7%	8.9%
City of Binghamton	CB	0.0%	14.2%	12.7%	52.2%	20.9%
Town of Binghamton	TB	0.0%	12.5%	0.0%	87.5%	0.0%
Town of Chenango	TCh	0.0%	0.0%	0.0%	100.0%	0.0%
Town of Dickinson	TD	0.0%	0.0%	0.0%	100.0%	0.0%
Town of Fenton	TF	0.0%	14.3%	14.3%	57.1%	14.3%
Town of Kirkwood	TK	0.0%	0.0%	40.0%	60.0%	0.0%
Town of Union	TU	0.0%	19.0%	28.6%	38.1%	14.3%
Town of Vestal	TV	0.0%	23.3%	23.3%	50.0%	3.3%
Village of Endicott	VE	0.0%	26.2%	28.6%	38.1%	7.1%
Village of Johnson City	VJC	0.0%	30.8%	11.5%	42.3%	15.4%
Village of Port Dickinson	VPD	0.0%	16.7%	0.0%	83.3%	0.0%
Tioga County	TCo	0.0%	0.0%	14.3%	78.6%	7.1%
Town of Owego	TO	0.0%	0.0%	25.0%	62.5%	12.5%
Town of Tioga	TT	0.0%	0.0%	50.0%	50.0%	0.0%
Village of Owego	VO	0.0%	0.0%	6.3%	75.0%	18.8%
	ALL	**1.1%**	**13.1%**	**17.9%**	**55.5%**	**12.4%**

[C] - under construction
** - Percentages may not add up to 100% due to rounding function*

TABLE E-16: BMTS PAVEMENT SUFFICIENCY RATINGS ANALYSIS FOR EACH MUNICIPALITY—PERCENTAGE FOR EACH RATING CLASSIFICATION* (2015)

MUNICIPALITY	ABRV.	[C] CONSTRUCTION	[1-5] POOR	[6] FAIR	[7-8] GOOD	[9-10] EXCELLENT
Broome County	BCo	0.0%	5.2%	23.0%	57.0%	14.8%
City of Binghamton	CB	3.0%	11.2%	15.7%	49.3%	20.9%
Town of Binghamton	TB	0.0%	0.0%	12.5%	87.5%	0.0%
Town of Chenango	TCh	0.0%	0.0%	0.0%	100.0%	0.0%
Town of Dickinson	TD	0.0%	0.0%	50.0%	0.0%	50.0%
Town of Fenton	TF	0.0%	14.3%	14.3%	14.3%	57.1%
Town of Kirkwood	TK	0.0%	20.0%	0.0%	80.0%	0.0%
Town of Union	TU	9.5%	28.6%	23.8%	38.1%	0.0%
Town of Vestal	TV	0.0%	23.3%	13.3%	63.3%	0.0%
Village of Endicott	VE	0.0%	26.2%	14.3%	52.4%	7.1%
Village of Johnson City	VJC	3.8%	34.6%	7.7%	46.2%	7.7%
Village of Port Dickinson	VPD	0.0%	16.7%	0.0%	50.0%	33.3%
Tioga County	TCo	0.0%	0.0%	14.3%	85.7%	0.0%
Town of Owego	TO	0.0%	0.0%	25.0%	75.0%	0.0%
Town of Tioga	TT	0.0%	0.0%	50.0%	50.0%	0.0%
Village of Owego	VO	0.0%	0.0%	6.3%	75.0%	18.8%
	ALL	**1.5%**	**12.7%**	**17.0%**	**55.0%**	**13.8%**

[C] - under construction
** - Percentages may not add up to 100% due to rounding function*

State Highway System

TABLE E-17: NYSDOT SYSTEM PAVEMENT CONDITION, BY FUNCTIONAL CLASS (2017)

FC CODE	FUNCTIONAL CLASS (FEDERAL AID ELIGIBLE)	EXCELLENT		FAIR		GOOD		POOR		TOTAL
		Miles	%	Miles	%	Miles	%	Miles	%	
1	Rural Principal Arterial Interstate	5.76	10.80%	5.59	6.83%	9.98	5.69%	0	0.00%	**21.33**
2	Rural Principal Arterial Expressway	11.91	22.33%	0.64	0.78%	8.38	4.78%	0.84	1.75%	**21.77**
4	Rural Principal Arterial Other	0	0.00%	2.88	3.52%	0	0.00%	0	0.00%	**2.88**
6	Rural Minor Arterial	2.07	3.88%	0.89	1.09%	8.39	4.78%	8.94	18.60%	**20.29**
7	Rural Major Collector	9.77	18.32%	13.22	16.14%	12.19	6.95%	7.39	15.37%	**42.57**
11	Urban Principal Arterial Interstate	5.19	9.73%	13.91	16.98%	43.91	25.04%	2.76	5.74%	**65.77**
12	Urban Principal Arterial Expressway	13.14	24.64%	9.96	12.16%	48.71	27.78%	3.29	6.84%	**75.1**
14	Urban Principal Arterial Other	1.58	2.96%	10.55	12.88%	0.67	0.38%	0	0.00%	**12.8**
16	Urban Minor Arterial	3.91	7.33%	15.58	19.02%	32.03	18.27%	24.61	51.20%	**76.13**
17	Urban Major Collector	0	0.00%	8.68	10.60%	11.1	6.33%	0.24	0.50%	**20.02**
		53.33	**100.00%**	**81.9**	**100.00%**	**175.36**	**100.00%**	**48.07**	**100.00%**	**358.66**

Source: NYSDOT, 2017 Pavement Data Report, Region 9

TABLE E-18: NYSDOT SYSTEM PAVEMENT INTERNATIONAL ROUGHNESS INDEX (IRI), BY FUNCTIONAL CLASS (2017)

FC CODE	FUNCTIONAL CLASS (FEDERAL AID ELIGIBLE)	VERY SMOOTH		SMOOTH		FAIR		ROUGH		VERY ROUGH		TOTAL
		Miles	%	Miles	%	Miles	%	Miles	%	Miles	%	
1	Rural Principal Arterial Interstate	9.16	11.8%	8.69	5.2%	1.31	1.8%	0.7	2.8%	1.47	10.4%	**21.33**
2	Rural Principal Arterial Interstate	3.01	3.9%	14.27	8.5%	3.09	4.2%	1.11	4.4%	0.29	2.0%	**21.77**
4	Rural Principal Arterial Expressway	0.37	0.5%	2.16	1.3%	0.2	0.3%	0.05	0.2%	0.1	0.7%	**2.88**
6	Rural Minor Arterial	1.59	2.1%	10.83	6.4%	7.03	9.5%	0.62	2.5%	0.22	1.6%	**20.29**
7	Rural Minor Arterial	7.82	10.1%	16.71	9.9%	10.64	14.4%	5.29	21.1%	2.11	14.9%	**42.57**
11	Rural Major Collector	19.73	25.5%	28.25	16.8%	10.43	14.1%	4.8	19.2%	2.56	18.1%	**65.77**
12	Urban Principal Arterial Interstate	31.19	40.3%	28.92	17.2%	8.64	11.7%	4.98	19.9%	1.37	9.7%	**75.1**
14	Urban Principal Arterial Expressway	0.18	0.2%	7.62	4.5%	3.17	4.3%	0.31	1.2%	1.52	10.7%	**12.8**
16	Urban Principal Arterial Other	4.01	5.2%	40.23	23.9%	22.36	30.3%	5.75	23.0%	3.78	26.7%	**76.13**
17	Urban Minor Arterial	0.25	0.3%	10.63	6.3%	7	9.5%	1.41	5.6%	0.73	5.2%	**20.02**
	Total	**77.31**	**100%**	**168.31**	**100%**	**73.87**	**100%**	**25.02**	**100%**	**14.15**	**100%**	**358.66**

Source: NYSDOT, 2017 Pavement Data Report, Region 9

Bridge Data

All bridges are inspected by NYSDOT no less than every two years; scour inspections for bridges with piers in water, every five years (Table E-19).

TABLE E-19: BRIDGE SUFFICIENCY RATING, BY OWNER (2019)

OWNER	# OF BRIDGES	AVERAGE CONDITION RATING	# POOR	% POOR
City	15	4.57	4	26.67%
County	117	5.62	24	20.51%
NYSDOT	257	5.50	56	21.79%
Other	1	–	–	–
Private – Industrial	4	–	–	–
Railroad	36	–	–	–
Town	73	5.12	28	38.36%
Village	8	5.68	2	25.00%
TOTAL	**511**	**5.30**	**114**	**22.31%**

Source: NYS GIS Clearinghouse, NYS DOT Bridges and Culverts 2019

BMTS Bridge Ranking Spreadsheet is too large to display, may be obtained from BMTS.

Mobility Data

Data on travel demand comes from BMTS. Data on travel time reliability comes from the National Performance Measure Research Data Set (NPMRDS) maintained by FHWA. This is a large database that cannot be displayed. Data may be obtained from BMTS.

VMT data showing the impact of the COVID-19 pandemic was obtained from Streetlight.

Freight

Data on freight movement is extracted from the New York State Freight Transportation Plan, available at https://www.dot.ny.gov/freight-plan Much of the base data for that plan was obtained from IHS Global Insight.

Truck travel time reliability data is extracted from the NPMRDS, described above.

Transit

Broome County submits annual reports to the Federal Transit Administration's National Transit Database. This includes ridership, operating, and financial data.

Links to annual Broome County profiles:

2018 https://cms7.fta.dot.gov/sites/fta.dot.gov/files/transit_agency_profile_doc/2018/20003.pdf

2017 https://cms7.fta.dot.gov/sites/fta.dot.gov/files/transit_agency_profile_doc/2017/20003.pdf

2016 https://cms7.fta.dot.gov/sites/fta.dot.gov/files/transit_agency_profile_doc/2016/20003.pdf

2015 https://cms7.fta.dot.gov/sites/fta.dot.gov/files/transit_agency_profile_doc/2015/20003.pdf

The most relevant data is summarized in Table E-20.

TABLE E-20: BROOME COUNTY TRANSIT DATA

METRIC	2015	2016	2017	2018	CHANGE (2015-18)
Ridership - unlinked trips	2,264,073	2,054,806	1,984,941	1,952,682	-15.9
Passenger miles	7,802,254	7,297,643	7,195,868	7,028,557	-11.0%
Vehicle revenue miles	1,193,322	1,168,425	1,141,494	1,157,919	-3.1%
Vehicle revenue hours	102,392	98,540	97,507	97,462	-5.1%
Operating expense	$8,045,801	$8,101,757	$7,640,579	$8,447,777	4.8%
Fare revenue	$1,543,406	$2,383,675	$2,551,381	$2,474,022	37.6%
Farebox recovery ratio	19.2%	29.4%	33.4%	29.3%	34.5%
Operating expense per revenue mile	$6.74	$6.93	$6.69	$7.30	7.6%
Operating expense per revenue hour	$78.58	$82.22	$78.36	$86.68	9.3%
Operating expense per passenger trip	$3.55	$3.94	$3.85	$4.33	17.9%
Operating expense per passenger mile	$1.03	$1.11	$1.06	$1.20	14.2%
Trips per vehicle revenue mile	1.90	1.76	1.74	1.69	-12.5%
Trips per vehicle revenue hour	22.11	20.85	20.36	20.04	-10.4%

Source: FTA National Transit Database

Safety Data

All safety data is obtained from NYSDOT's GIS-based Accident Location Information System (ALIS). The raw crash data is provided by the NYS Department of Motor Vehicles from MV-104 crash data forms (Table E-21 through Table E-23).

TABLE E-21: CRASHES, BY MUNICIPALITY (2015–2019)

MUNICIPALITY	2015	2016	2017	2018	2019
City of Binghamton	1,071	1,208	1,596	1,741	1,761
Town of Binghamton	80	73	79	75	57
Town of Candor	102	108	100	97	97
Village of Candor	9	12	4	8	14
Town of Chenango	384	334	328	326	319
Town of Conklin	110	119	107	111	89
Town of Dickinson	254	191	215	201	171
Village of Endicott	208	201	232	357	369
Town of Fenton	160	143	174	156	155
Village of Johnson City	398	472	467	552	524
Town of Kirkwood	352	302	331	354	332
Town of Maine	126	131	159	150	159
Town of Nichols	113	115	117	154	145
Village of Nichols	4	12	6	7	9
Town of Owego	371	427	378	416	380
Village of Owego	117	98	118	135	141
Village of Port Dickinson	26	23	23	30	33
Town of Tioga	109	98	71	89	69
Town of Union	544	529	470	592	530
Town of Vestal	664	789	770	899	887
Town of Windsor	165	168	144	195	192
Village of Windsor	15	8	16	19	12
Total	**5,382**	**5,561**	**5,905**	**6,664**	**6,445**

Source: NYSDOT Accident Location Information System

TABLE E-22: CRASH DATA ELEMENTS (2015–2019)

CRASH DATA ITEM	2015	2016	2017	2018	2019
Property Damage	2,491	2,556	2,602	4,099	4,315
Property Damage And Injury	703	714	648	760	790
Injury	355	352	305	172	120
Fatal	14	19	10	10	12
Non-Auto	2	0	2	1	1
Crash Type Not Reported	1,817	1,921	2,338	1,622	1,207
	1,817	1,921	2,332	1,611	1,186
Total	**7,199**	**7,483**	**8,243**	**8,286**	**7,652**
Total Injuries	1,396	1,411	1,205	1,249	1,144
Total Serious Injuries	133	152	115	134	133
Fatalities	15	21	11	11	13
Total	**1,544**	**1,584**	**1,331**	**1,394**	**1,290**
Pedestrian Accidents	85	97	75	79	73
Bicycle Accidents	56	52	58	41	41
Serious Pedestrian Accidents	8	14	8	9	13
Serious Bicycle Accidents	8	4	4	4	8
Fatal Pedestrian Accidents	4	5	2	3	1
Fatal Bicycle Accidents	0	0	0	0	1

Source: NYSDOT ALIS

TABLE E-23: HIGH-CRASH LOCATIONS, NONSTATE FEDERAL AID SYSTEM

ROAD SEGMENTS 2000-5000 AADT	SEGMENT	LENGTH	OWNER	LOCATION	NOTES
Robinson St.	Bigelow St.-Broad Ave.	0.41	City of Binghamton	Binghamton	Signalized and unsignalized intersection crashes.
Beethoven St.	Riverside Dr.-Leroy St.	0.21	City of Binghamton	Binghamton	Mostly intersection accidents at Leroy and Riverside.
Robinson St.	NYS 7-Chenango St.	0.31	City of Binghamton	Binghamton	Mostly crashes at the signalized intersections.
Vestal Ave.	Mill St.-S Washington St.	0.35	City of Binghamton	Binghamton	Almost all intersection crashes.
Kirkwood Industrial Park S Entrance	CR 52-Ind. Park Loop	0.21	Broome County	Kirkwood	Many non-intersection accidents.
ROAD SEGMENTS ABOVE 5000 AADT	**SEGMENT**	**LENGTH**	**OWNER**	**LOCATION**	**NOTES**
Front St.	Main St.-Leroy St.	0.28	City of Binghamton	Binghamton	Mostly intersections at Leroy and Main. Three pedestrian accidents at Main.
Jarvis St.	Main St.-Clinton St.	0.26	City of Binghamton	Binghamton	Crashes at signalized and non-signalized intersections. Five pedestrian.
Glenwood Ave.	Main St.-Clinton St.	0.29	City of Binghamton	Binghamton	Mostly intersection accidents at Main and Clinton. Some mid-block.
CFJ Blvd.	Airport Rd.-Lester Ave.	0.24	Village of Johnson City	Johnson City	Mostly intersection accidents at Airport, with some at Lester or Gannett.
African Rd.	NY434-Old Vestal Rd.	0.21	Town of Vestal	Vestal	Mostly intersection accidents at NY 434.
Robinson St.	Broad Ave.-NYS 7	0.49	City of Binghamton	Binghamton	Mix of hitting RR overpass, signalized and unsignalized intersection crashes.
Leroy St.	Front St.-Murray St.	0.21	City of Binghamton	Binghamton	A lot of accidents at Oak and Murray.
Broad Ave.	East Frederick St.-Robinson St.	0.28	City of Binghamton	Binghamton	Mostly intersection crashes at Robinson. Two ped accidents; one at George St.
Sycamore Rd.	Ny434-Old Vestal Rd.	0.35	Town of Vestal	Vestal	Mostly accidents at NY 434 and Old Vestal intersections, with a few at
Lester Ave.	Main St.-Erie Lackawanna	0.20	Village of Johnson City	Johnson City	Almost all were accidents at Main Street. Three ped accidents at Main.

McKinley Ave.	North St.-Columbus St.	0.26	Village of Endicott	Endicott	Mostly rear-end and right-angle crashes at the Monroe and North intersections.
Prospect St.	Airport Rd.-"CB Line"	0.25	Broome County	Dickinson	Mostly accidents at CFJ and unsignalized intersections.
Harry L Dr.	Airport Rd.-Lester Ave.	0.22	Village of Johnson City	Endicott	Almost all intersection accidents. 2/3 at Airport Road; the rest at Lester,
Airport Rd.	Lewis Rd.-"TU Line"	0.30	Broome County	Union	Mostly non-intersection accidents; many are collisions with deer or FO.
North St.	McKinley Ave.-Jefferson Ave.	0.31	Village of Endicott	Endicott	Mostly intersection accidents all along the length of segment.

Source: NYSDOT ALIS

Performance Data

Data used for the System Performance Report comes from NYSDOT for all measures except transit asset management, which comes from Broome County.

Infrastructure metrics are in the NYSDOT Transportation Asset Management Plan available at https://www.dot.ny.gov/programs/capital-plan/repository/Final%20TAMP%20June%2028%202019.pdf

Safety metrics are based on the NYS Strategic Highway Safety Plan available at https://www.dot.ny.gov/divisions/operating/osss/highway/strategic-plan

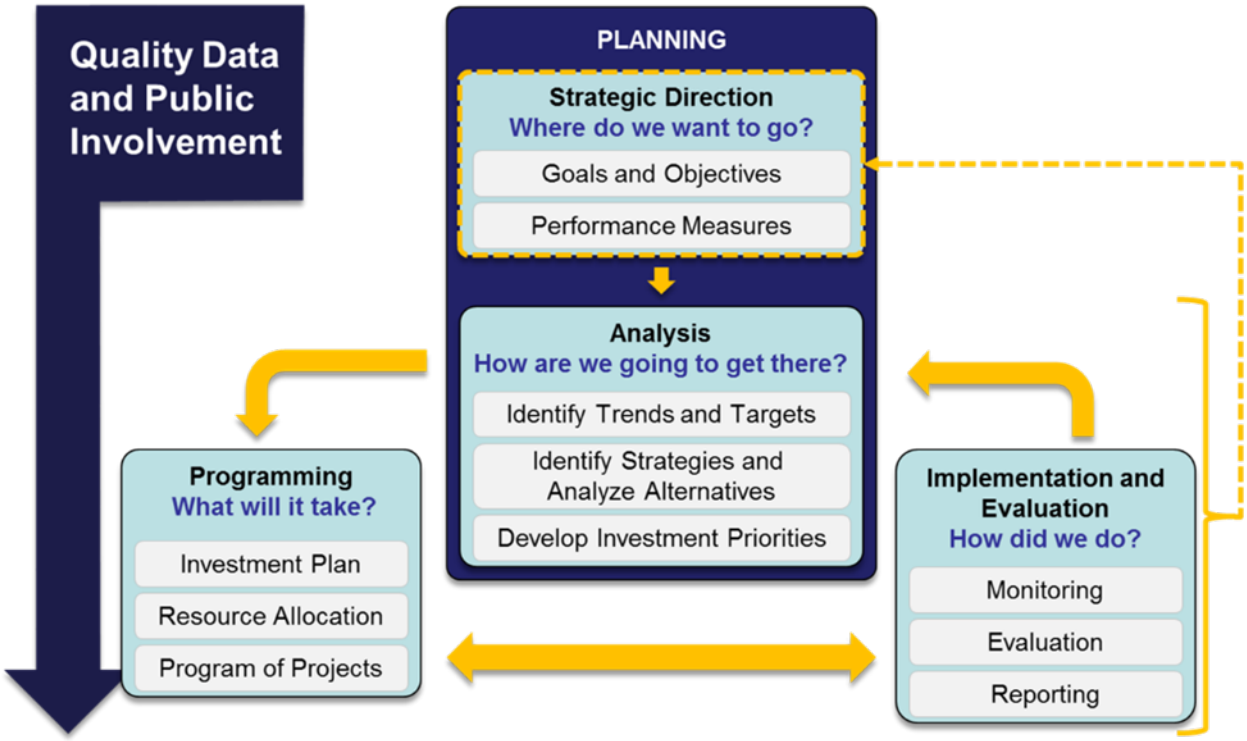
Transit asset metrics are in the Broome County Transit Asset Management Plan available from the Broome County Department of Public Transportation.

APPENDIX F.
SYSTEM PERFORMANCE REPORT

Background

MPOs must include a system performance report in the LRTP that describes the condition and performance of the transportation system with respect to required performance targets, and reports on progress achieved in meeting the targets in comparison with baseline data and previous system performance reports.[3] The importance of this is depicted in Figure F-1.

FIGURE F-1: PERFORMANCE-BASED PLANNING PROCESS



Source: FHWA TPM

[3] 23 CFR 450.324 (f)(4).

Pursuant to the Moving Ahead for Progress in the 21st Century Act (MAP-21) and carried through into the Fixing America's Surface Transportation (FAST) Act, Metropolitan Planning Organizations (MPOs) must employ a transportation performance management approach in carrying out their federally-required planning and programming activities. Chapter 23 part 150(b) of the *United States Code* includes the following seven national performance goals for the Federal-Aid Highway Program:

- **Safety**. To achieve a significant reduction in traffic fatalities and serious injuries on all public roads.
- **Capital Assets Condition**. To maintain the highway infrastructure and transit capital asset systems in a state of good repair.
- **Congestion Reduction**. To achieve a significant reduction in congestion on the National Highway System (NHS).
- **System Reliability**. To improve the efficiency of the surface transportation system.
- **Freight Movement and Economic Vitality**. To improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development.
- **Environmental Sustainability**. To enhance the performance of the transportation system while protecting and enhancing the natural environment.
- **Reduced Project Delivery Delays**. To reduce project costs, promote jobs and the economy, and expedite the movement of people and goods by accelerating project completion through eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies' work practice.

For public transportation, transportation performance management shall be utilized to advance the general policy and purposes of the public transportation program as included in 49USC §5301(a) and (b).

The BMTS LRTP *Moving Our Future Forward 2045* follows the performance-based planning process proposed by FHWA.

The BMTS LRTP *Moving Our Future Forward 2045* was adopted on October 23, 2020. As such, it includes performance targets for the measures associated with the following performance management rulemakings:

- Highway Safety Improvement Program (HSIP) and Highway Safety.
- Transit Asset Management.
- NHS Pavement and Bridge Condition.

- System Performance/Freight/Congestion Mitigation & Air Quality Improvement (CMAQ) Program.
- The final FTA rule for Transit Safety performance is expected on July 20, 2021, and therefore not addressed in this plan.

HSIP and Highway Safety

Baseline Conditions

Safety is addressed in Chapter 7.0 of the LRTP.

Performance Targets

On March 15, 2016, the Federal Highway Administration (FHWA) published the final rule for the HSIP and Safety Performance Management (Safety PM) Measures in the *Federal Register* with an effective date of April 14, 2016. Note that these metrics apply to all public roads regardless of owner or functional class.

The 2017 New York Strategic Highway Safety Plan (SHSP) is intended to reduce "the number of fatalities and serious injuries resulting from motor vehicle crashes on public roads in New York State." The SHSP guides the New York State Department of Transportation (NYSDOT), the MPOs, and other safety partners in addressing safety and defines a framework for implementation activities to be carried out across New York State. The NYSDOT Highway Safety Improvement Program (HSIP) annual report documents the statewide performance targets.

The BMTS Policy Committee agreed to support the NYSDOT statewide 2020 targets for the following Safety PM measures based on five year rolling averages per Title 23 Part 490.207 of the *Code of Federal Regulations* on December 12, 2019 via Resolution 2019-13.

- Number of Fatalities: 1,020.
- Rate of Fatalities per 100M VMT: 0.82.
- Number of Serious Injuries 10,392.
- Rate of Serious Injuries per 100M VMT: 8.42.
- Number of Nonmotorized Fatalities and Serious Injuries: 2,557.

Description of Progress

The BMTS LRTP *Moving Forward 2045* includes these safety goals and objectives:

GOAL: Provide safety and security to all users by whatever mode they choose for travel.

OBJECTIVE: Reduce the number and rate of crashes, fatalities, and serious injuries for all modes.

This is the first BMTS LRTP since the adoption of the final rules on system performance by FHWA and FTA. As such, it is not possible to report on progress toward achieving targets. Future iterations of the LRTP will include descriptions of progress achieved toward targets, including "information that is available at the time of the plan adoption, such as information that has been reported as part of the reports required under 23 CFR 490.107."

Transit Asset Management

The Federal Transit Administration (FTA) published a final Transit Asset Management (TAM) rule on July 26, 2016. The rule applies to all recipients and subrecipients of Federal transit funding that own, operate, or manage public transportation capital assets. The rule defines the term "state of good repair," requires that public transportation providers develop and implement TAM plans, and establishes State of Good Repair (SGR) standards and performance measures for four transit asset categories: rolling stock, transit equipment, transit infrastructure, and facilities. Table F-1 identifies the federal transit asset performance measures.

TABLE F-1: FTA TAM PERFORMANCE MEASURES

ASSET CATEGORY	PERFORMANCE MEASURE AND ASSET CLASS
Rolling Stock	Percentage of revenue vehicles within a particular asset class that have either met or exceeded their useful life benchmark
Equipment	Percentage of non-revenue, support-service and maintenance vehicles that have met or exceeded their useful life benchmark
Infrastructure	Percentage of track segments with performance restrictions
Facilities	Percentage of facilities within an asset class rated below condition 3.0 on the Transit Economic Requirements Model (TERM) scale

Source: FTA

Baseline Conditions and Performance Targets

Table F-2 presents the baseline performance/conditions for transit assets owned by Broome County, the transit provider in the BMTS planning area.

Broome County has set transit asset targets shown in the table. MPOs can either agree to program projects that will support the transit provider's targets or set their own separate regional targets for the MPO's planning area.

The BMTS Policy Committee agreed to support these transit asset targets on March 1, 2018 via Resolution 2018-03.

TABLE F-2 TRANSIT ASSET CONDITIONS AND PERFORMANCE TARGETS

ASSET CATEGORY & PERFORMANCE MEASURE	ASSET CLASS	NUMBER	AVERAGE AGE	PERCENT EXCEEDING USEFUL LIFE BENCHMARK	2021 TARGET
Rolling Stock					
Age - % of revenue vehicles within a particular asset class that have met or exceeded their Useful Life Benchmark (ULB)	Bus	47	12.2	29.8%	15%
	Cutaway bus	11	7	36.3%	15%
	Other: Trolley bus	1	20	100.0%	Replace by 2022
Equipment					
Age - % of non-revenue vehicles within a particular asset class that have met or exceeded their Useful Life Benchmark (ULB)	Non-revenue service autos	6	5.7	67%	15%
	Trucks and other rubber tire vehicles				15%
	Fareboxes				25%
	Other: Surveillance system				15%
Facilities					
Condition - % of facilities with a condition rating below 3.0 on the FTA TERM scale	Administration	1	37	0%	3.0
	Maintenance	1	37	0%	3.0
	Parking Structures	-	-		5.0
	Passenger facilities	1	8	0%	5.0
	Shelters	Not listed in TAM			

Source: Broome County Department of Public Transportation

This is the first BMTS LRTP since the adoption of the final rules on system performance by FHWA and FTA. As such, it is not possible to report on progress toward achieving targets. Future iterations of the LRTP will include descriptions of progress achieved toward targets, including "information that is available at the time of the plan adoption, such as information that has been reported as part of the reports required under 23 CFR 490.107."

Broome County is committed to meeting FTA life cycle requirements for rolling stock by 2022.

Pavement and Bridge Condition Measures (PM2)

FHWA published the Pavement and Bridge Condition Performance Measures Final Rule in January 2017. This rule, which is also referred to as the PM2 rule, establishes six performance measures for pavement and bridge condition on Interstate and non-Interstate National Highway System (NHS) roads. The PM2 measures are:

- Percent of Interstate pavements in good condition.
- Percent of Interstate pavements in poor condition.
- Percent of non-Interstate NHS pavements in good condition.
- Percent of non-Interstate NHS pavements in poor condition.
- Percent of NHS bridges (by deck area) classified as in good condition.
- Percent of NHS bridges (by deck area) classified as in poor condition.

Pavement Condition Measures

The four pavement condition measures represent the percentage of lane-miles on the Interstate and non-Interstate NHS that are in good condition or poor condition. The PM2 rule defines NHS pavement types as either asphalt, jointed concrete, or continuously reinforced concrete pavement (CRCP), and defines five pavement condition metrics that states are to use to assess pavement condition:

- **International Roughness Index (IRI)**. An indicator of roughness; applicable to all three pavement types.
- **Cracking percent**. Percentage of the pavement surface exhibiting cracking; applicable to all three pavement types.
- **Rutting**. Extent of surface depressions; applicable to asphalt pavements only.
- **Faulting**. Vertical misalignment of pavement joints; applicable to jointed concrete pavements only.
- **Present Serviceability Rating (PSR)**. A quality rating that is applicable only to NHS roads with posted speed limits of less than 40 miles per hour, for example toll plazas and border crossings. A state may choose to collect and report PSR for applicable segments as an alternative to the other four metrics.

For each pavement metric, a threshold is used to establish good, fair, or poor condition. Table F-4 lists the thresholds. Using these metrics and thresholds, pavement condition is assessed for each 0.1-mile section of the through travel lanes of mainline highways on the Interstate or the non-Interstate NHS, as follows:

- Asphalt segments are assessed using the IRI, cracking, and rutting metrics, while jointed concrete segments are assessed using IRI, cracking, and faulting. For these two pavement types, each segment is rated good if the rating for all three metrics are good, and poor if the ratings for two or more metrics are poor.
- Continuous concrete segments are assessed using the IRI and cracking metrics. A segment is rated good if both metrics are rated good, and poor if both metrics are rated poor.
- If a state collects and reports PSR for any applicable pavement segments, those segments are rated according to the PSR scale in Table F-4.

For all three pavement types, sections that are not good or poor are rated fair.

TABLE F-4: PAVEMENT CONDITION METRIC PERFORMANCE THRESHOLDS

Metric Rating	Good	Fair	Poor
IRI (inches/mile) (Applies to all pavements)	< 95	95–170	> 170
Cracking Percent (%) (Applies to all pavements)	< 5	CRCP: 5–10 Jointed: 5–15 Asphalt: 5–20	CRCP: > 10 Jointed: > 15 Asphalt: > 20
Rutting (inches) (for asphalt only)	< 0.20	0.20–0.40	> 0.40
Faulting (inches) (for jointed concrete only)	< 0.10	0.10–0.15	> 0.15

Source: FHWA

The good/poor pavement condition measures are expressed as a percentage and are determined by summing the total lane-miles of good or poor highway segments and dividing by the total lane-miles of all highway segments on the applicable system. Pavement in good condition suggests that no major investment is needed. Pavement in poor condition suggests major reconstruction investment is needed in the near term.

Bridge Condition Measures

The two bridge condition performance measures refer to the percentage of bridges by deck area on the NHS that are in good or poor condition. Bridge owners are required to inspect bridges on a regular basis and report condition data to FHWA. The measures assess the condition of four bridge components: deck, superstructure, substructure, and culverts.

Each bridge component has a metric rating threshold to establish good, fair, or poor condition, as shown in Table F-5. Each bridge on the NHS is evaluated using these ratings. If the lowest rating of

the four metrics is greater than or equal to seven, the structure is classified as good. If the lowest rating is less than or equal to four, the structure is classified as poor. If the lowest rating is five or six, it is classified as fair.

TABLE F-5: BRIDGE CONDITION PERFORMANCE RATING THRESHOLDS

Metric Rating	Good	Fair	Poor
Deck	≥ 7	5 or 6	≤ 4
Superstructure	≥ 7	5 or 6	≤ 4
Substructure	≥ 7	5 or 6	≤ 4
Culvert	≥ 7	5 or 6	≤ 4

Source: FHWA

The bridge condition measures are expressed as the percent of NHS bridges in good or poor condition. The percent is determined by summing the total deck area of good or poor NHS bridges and dividing by the total deck area of the bridges carrying the NHS. Deck area is computed using structure length and either deck width or approach roadway width.

Bridges in good condition suggests that no major investment is needed. Bridges in poor condition are safe to drive on; however, they are nearing a point where substantial reconstruction or replacement is needed.

Pavement and Bridge Condition Performance Target Requirements

Performance for the PM2 measures is assessed over a series of four-year performance periods. The first performance period began on January 1, 2018 and runs through December 31, 2021. NYSDOT must report baseline performance and targets at the beginning of each period and update performance at the midpoint and end of each performance period.

The PM2 rule requires state DOTs and MPOs to establish performance targets for all six measures and monitor progress towards achieving the targets. States must establish:

- Four-year statewide targets for the percent of Interstate pavements in good and poor condition.
- Two-year and four-year statewide targets for the percent of non-Interstate NHS pavements in good and poor condition.
- Two-year and four-year targets for the percent of NHS bridges (by deck area) in good and poor condition.

MPOs must establish four-year targets for all six measures by either agreeing to program projects that will support the statewide targets or setting quantifiable targets for the MPO's planning area.

The two-year and four-year targets represent expected pavement and bridge condition at the end of calendar years 2019 and 2021, respectively.

NYSDOT Pavement and Bridge Condition Baseline Performance and Established Targets

This system performance report discusses performance for each applicable target as well as the progress achieved by the MPO in meeting targets in comparison with system performance recorded in previous reports. The federal performance measures are new and therefore, performance of the system for each measure and associated targets have only recently been assessed and developed. Accordingly, this first LRTP system performance report highlights performance for the baseline period of 2017. NYSDOT will continue to monitor pavement and bridge condition performance and report to FHWA on a biennial basis. Future system performance reports will discuss progress towards meeting the targets since this initial baseline report.

NYSDOT established statewide PM2 targets on May 20, 2018. BMTS was then required to establish PM2 targets no later than November 16, 2018. The BMTS Policy Committee agreed to support NYSDOT's PM2 performance targets on December 13, 2018 by Resolution 2018-10. By adopting NYSDOT's targets, BMTS agrees to plan and program projects that help NYSDOT achieve these targets.

Table F-6 presents baseline performance for each PM2 measure for New York that will be supported by BMTS for its planning area as well as the two-year and four-year statewide targets established by NYSDOT.

TABLE F-6: PAVEMENT AND BRIDGE CONDITION (PM2) PERFORMANCE AND TARGETS

PERFORMANCE MEASURES	NEW YORK PERFORMANCE (BASELINE)	NEW YORK 2-YEAR TARGET (2019)	NEW YORK 4-YEAR TARGET (2021)
Percent of Interstate pavements in good condition	–*	–*	47.3%
Percent of Interstate pavements in poor condition	–*	–*	4.0%
Percent of non-Interstate NHS pavements in good condition	36.7%	14.6%	14.7%
Percent of non-Interstate NHS pavements in poor condition	26.7%	12.0%	14.3%
Percent of NHS bridges (by deck area) in good condition	22.8%	23.0%	24.0%
Percent of NHS bridges (by deck area) in poor condition	10.6%	11.6%	11.7%

Source: NYSDOT
**For the first performance period only (January 1, 2018 through December 31, 2021), baseline condition and 2-year targets are not required for the Interstate pavement condition measures.*

The BMTS LRTP *Moving Forward 2045* includes these goals and objectives:

GOAL: Provide excellent infrastructure that meets mobility needs of people and goods

OBJECTIVE: Maintain all elements of the regional transportation system in state of good repair

1. Continue to support NYSDOT targets for NHS Pavements and Bridges.
2. Develop and meet targets for non-State federal-aid pavements and bridges.

This is the first BMTS LRTP since the adoption of the final rules on system performance by FHWA and FTA. As such, it is not possible to report on progress toward achieving targets. Future iterations of the LRTP will include descriptions of progress achieved toward targets, including "information that is available at the time of the plan adoption, such as information that has been reported as part of the reports required under 23 CFR 490.107."

System Performance, Freight, and Congestion, Mitigation & Air Quality Improvement Program Measures (PM3)

On January 18, 2017, FHWA published the system performance, freight, and Congestion, Mitigation and Air Quality Improvement Program (CMAQ) Performance Measures Final Rule in the *Federal Register*. This third FHWA performance measure rule (PM3), which has an effective date of May 20, 2017, established six performance measures to assess the performance of the NHS, freight movement on the Interstate System, and traffic congestion and on-road mobile source emissions for the CMAQ Program. The performance measures are:

For the National Highway Performance Program (NHPP)

1. Percent of person-miles on the Interstate system that are reliable, also referred to as Level of Travel Time Reliability (LOTTR).
2. Percent of person-miles on the non-Interstate NHS that are reliable (LOTTR).

For the National Highway Freight Program (NHFP)

3. Truck Travel Time Reliability Index (TTTR).

For the CMAQ Program

4. Annual hours of peak hour excessive delay per capita (PHED).
5. Percent of non-single occupant vehicle travel (Non-SOV).
6. Cumulative two-year and four-year reduction of on-road mobile source emissions for CMAQ funded projects (CMAQ Emission Reduction).

The three CMAQ performance measures listed above are applicable only to designated nonattainment areas or maintenance areas for National Ambient Air Quality Standards by the Environmental Protection Agency. BMTS meets all current air quality standards and is not subject to establishing targets for these performance measures. The remaining performance measures are described below.

LOTTR Measures

Travel time reliability refers to the consistency or dependability of travel times on a roadway from day to day or across different times of the day. For example, if driving a certain route always takes about the same amount of time, that segment is reliable. It may be congested most of the time, not congested most of the time, or somewhere in between, but the conditions do not differ very much from time period to time period. On the other hand, if driving that route takes 20 minutes on some occasions but 45 minutes on other occasions, the route is not reliable.

The LOTTR is defined as the ratio of the longer travel times (80th percentile) to a normal travel time (50th percentile) over applicable roads during four time periods that cover the hours of 6:00 a.m. to 8:00 p.m. each day (AM peak, Mid-day, PM peak, and weekends). The LOTTR ratio is calculated for each roadway segment. The segment is reliable if its LOTTR is less than 1.5 during all four time periods. If one or more time periods has a LOTTR of 1.5 or above, that segment is unreliable.

The two LOTTR measures are expressed as the percent of person-miles traveled on the Interstate or non-Interstate NHS system that are reliable. By using person-miles, the measures take into account the total number of people traveling in buses, cars, and trucks over these roadway

segments. To obtain total person-miles traveled, the length of each segment is multiplied by an average vehicle occupancy for each type of vehicle on the roadway.

The sum of person-miles on reliable segments is divided by the sum of person-miles on all segments to determine the percent of person-miles traveled that are reliable.

TTTR Measure

The TTTR measure assesses travel time reliability for trucks traveling on the Interstate. A TTTR ratio is generated by dividing the 95th percentile truck travel time by a normal travel time (50th percentile) for each segment of the Interstate system over five time periods throughout weekdays and weekends (AM peak, Mid-day, PM peak, weekend, and overnight). The time periods cover all hours of the day.

For each Interstate segment, the highest TTTR value among the five time periods is multiplied by the length of the segment. The sum of these length-weighted segments is then divided by the total length of Interstate to generate the TTTR Index.

Travel Time Data

The travel time data used to calculate the LOTTR and TTTR measures is provided by FHWA via the NPMRDS. This dataset contains historical travel times, segment lengths, and Annual Average Daily Traffic (AADT) for Interstate and non-Interstate NHS roads.

PM3 Performance Target Requirements

Performance for the PM3 measures is assessed over a series of four-year performance periods. States must report baseline performance and targets during the first part of the performance period and update performance at the midpoint and end of each performance period.

For the LOTTR and TTTR measures, the first performance period began on January 1, 2018 and runs through December 31, 2021.

The PM3 rule requires state DOTs and MPOs to establish performance targets for each measure and monitor progress towards achieving the targets. NYSDOT must establish two-year and four-year state targets for the Interstate LOTTR, TTTR, Non-SOV Travel, and CMAQ Emission Reduction measures. For the non-Interstate NHS LOTTR and PHED measures, NYSDOT must establish four-year targets.

NYSDOT PM3 Baseline Performance and Established Targets

This system performance report discusses performance for each applicable target as well as the progress achieved by the MPO in meeting targets in comparison with system performance recorded in previous reports. The federal performance measures are new and therefore, performance of the system for each measure and associated targets have only recently been assessed and developed.

Accordingly, this first LRTP system performance report highlights performance for the baseline period prior to 2018. NYSDOT will continue to monitor performance and report to FHWA on a biennial basis. Future system performance reports will discuss progress towards meeting the targets since this initial baseline report.

NYSDOT established PM3 targets on May 20, 2018. In consultation with the New York MPOs, NYSDOT subsequently recalculated and amended the State's LOTTR targets after discovering an error in the formula used to determine the 2018 baseline. The BMTS Policy Committee was required to establish PM3 targets no later than November 16, 2018. the BMTS Policy Committee agreed to support NYSDOT's PM3 performance Resolution 2018-10, agreeing to plan and program projects that help NYSDOT achieve the State's targets.

Table F-7 presents baseline performance for the LOTTR and TTTR measures for New York and for the BMTS planning area as well as the two-year and four-year targets established by NYSDOT.

TABLE F-7: SYSTEM PERFORMANCE AND FREIGHT (PM3) PERFORMANCE AND TARGETS

PERFORMANCE MEASURES	NEW YORK PERFORMANCE (BASELINE)	NEW YORK 2-YEAR TARGET (2019)	NEW YORK 4-YEAR TARGET (2021)
Percent of person-miles on the Interstate system that are reliable (Interstate LOTTR)	81.3%	73.1%	73.0%
Percent of person-miles on the non-Interstate NHS that are reliable (Non-Interstate NHS LOTTR)	77.0%	–	63.4%
Truck travel time reliability index (TTTR)	1.38	2.00	2.11

Source: NYSDOT

The BMTS *LRTP Moving Forward 2045* supports the achievement of reliable travel time for personal and freight mobility.

APPENDIX G.
FEDERAL PLANNING FACTORS

Table G-1 shows how the planning factors from federal law (23 CFR 450.306(b)) are addressed in *Moving Our Future Forward 2045*.

TABLE G-1: PLANNING FACTORS FOR LRTP

PLANNING FACTOR	LRTP REFERENCE
(1) Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency	Chapter 6 Personal Mobility Chapter 8 Freight Mobility
(2) Increase the safety of the transportation system for motorized and non-motorized users;	Chapter 7.0 Safety
(3) Increase the security of the transportation system for motorized and non-motorized users	Chapter 7 Safety Chapter 10Transportation Technology (cybersecurity)
(4) Increase accessibility and mobility of people and freight;	Chapter 6Personal Mobility Chapter 8 Freight Mobility
(5) Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns	Chapter 9 Environment and Resiliency
(6) Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight	Chapter 6 Personal Mobility Chapter 8 Freight Mobility
(7) Promote efficient system management and operation	Chapter 3 Performance Based Planning Chapter 6 Personal Mobility Chapter 8 Freight Mobility
(8) Emphasize the preservation of the existing transportation system	Chapter 4 Asset Management
(9) Improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation	Chapter 9 Environment and Resiliency
(10) Enhance travel and tourism	Chapter 6 Interregional Travel

APPENDIX H.
ENVIRONMENTAL JUSTICE

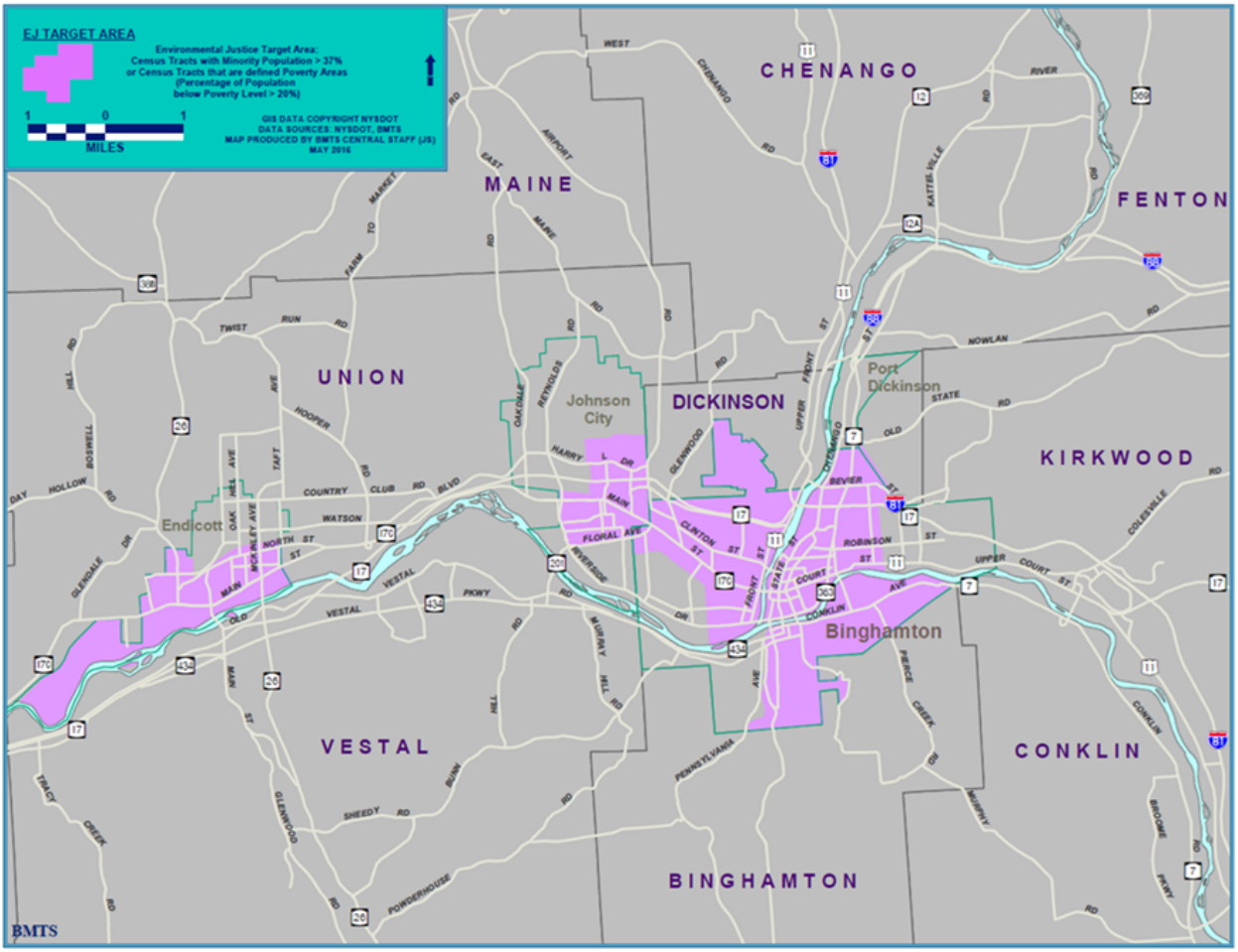
The concept of environmental justice (EJ) entered the federal lexicon with the issuance of Executive Order 12898 "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations" in February 1994. The most recent guidance from USDOT is found in the Final DOT Environmental Justice Order 5610.2(a). The purpose is identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of DOT programs, policies, and activities on minority populations and low-income populations. This applies to actions with federal participation or funding.

BMTS incorporates these EJ principles in its planning work, including the LRTP and TIP:

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 inthe 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.

Location of subject populations is determined by Census population data as shown in Figure H-1.

FIGURE H-1: LOCATION OF SUBJECT POPULATIONS



Census tracts are demarcated if (1) more than 20% of the population is below the federally prescribed poverty level; or (2) the minority population is greater than the national average of 37%.

The Broome Tioga Transportation Study that surveyed households in 2018 found the following mode share distribution for households reporting income less than $25,000, and from $25,000 - $49,999 (Table H-1).

TABLE H-1: MODE SHARE, BY HOUSEHOLD INCOME

MODE	HH INCOME <$25,000	HH INCOME $25,000 – 49,999
Walk	27.8%	11.1%
Bike	1.3%	0.1%
Car	60.9%	82.4%
Transit	4.1%	3.4%
Taxi	4.2%	0.2%
School bus	0.2%	1.0%
Other	1.6%	1.9%

Source: RSG

Households reported all of the trips made by every member for either a one-day or three-day period. While this data is not geospatial, it still offers some insight into how lower income people travel. Note that those in the lowest income cohort, which is below the poverty level for households of 1 – 4 people, rely much more on walking and less on car travel. The survey was constructed so that trip segments are counted separately, so walking to or from a bus stop is considered a walk trip. Also, while the percent of transit trips is relatively small, it is still important in reflecting those people that are transit dependent.

Analysis of LRTP Investments

First, there are investments that have regionwide impacts, and therefore contribute travel benefits to the EJ population. These include:

- Public Transportation. The BC Transit fixed route service provides an important level of access and mobility to EJ populations. The Greater Binghamton Transportation Center is located in the Binghamton CBD, an EJ target area. BC Transit routes use this as a central transfer point, so people who walk there can access the whole service area. The investments in public transportation in the LRTP are to maintain the bus fleet within FTA service life, to maintain the Center, and to support system operations can all be considered a positive for EJ target populations.
- Asset Management/System Preservation. Working toward achieving and maintaining a state of good repair for roads and bridges is broadly beneficial, especially within the BMTS approach of investing in systems that include both local and state facilities. To the extent that this work includes construction and maintenance of sidewalks, the benefit grows because of the greater reliance on walking of the EJ target populations.

This LRTP does not include specific project investments for the roadway system.

MOVING OUR FUTURE FORWARD
2045
Binghamton Metropolitan Transportation Study
TRANSPORTATION PLAN

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