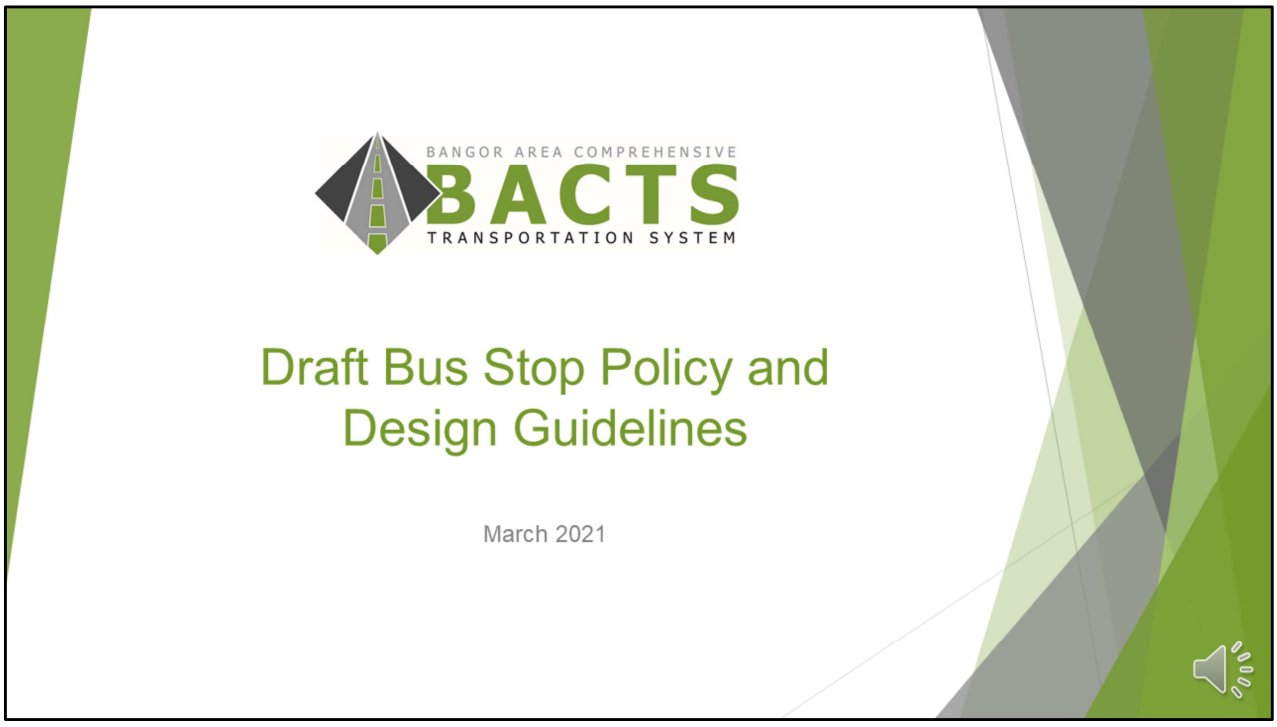


This overview is presented by the Bangor Area Comprehensive Transportation System

The purpose of this document is to provide guidance to the stakeholders of the fixed route bus system in the Greater Bangor region to ensure consistency in the design, placement, and location of bus stops; as well as to ensure bus stops are managed and maintained properly and uniformly throughout the system.

Bus stops and related infrastructure and/or amenities may be constructed or owned by one entity and used or connected to facilities or property owned by another entity. It is important for all entities to coordinate and work closely together, especially during the design and construction of these facilities.

The current flag stop system creates challenges to providing the most cost effective, efficient, reliable, and legible transit service.

Designated stops will not only provide better customer service by providing for better on-time performance and predictability, improve rider understanding of the system, and offer more facilities with brand recognition; it will provide the necessary data points that will make implementation of technologies to provide trip planning and real-time information available to passengers and free up administrative staff.

This document is the first step in transitioning the Community Connector from a flag-stop system to a designated stop system as recommended in the 2019 Transit Study prepared by Stantec.

The Bus Stop Policy and Design Guidelines were developed through the efforts and input of a Work Group consisting of Community Connector staff, Municipal Staff from each community participating in the Community Connector system, and MaineDOT Transit staff.

The document is made up of two distinct parts. It outlines the design guidelines by which bus stops will be located, designed, and placed, following industry standards and best practices, as well as requirements for ADA accessibility, while also taking into consideration the unique characteristics of the Greater Bangor region.

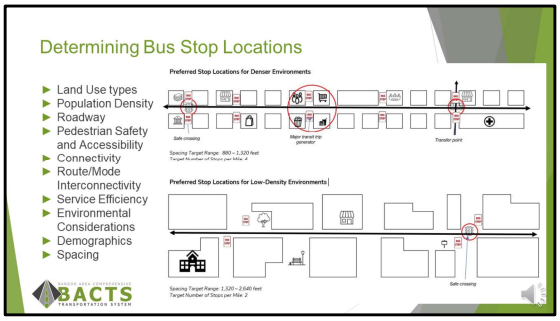
In addition to the development of the initial designation plan, the bus stop design guidelines are intended to provide municipalities, local developers, and other partners a consistent set of guidelines to facilitate the proper siting, design, installation, and maintenance of either existing or proposed bus stops and shall be applied to any future routes, proposed bus stop plan, design, and/or improvements.

It also outlines policies relating to the management and maintenance of bus stops. This includes the coordination and cooperation between jurisdictions and stakeholders; Defining roles and responsibilities in planning, designing, funding, acquiring, constructing or installing, maintaining, replacing and repairing bus stops and bus stop infrastructure.

It is the desire of the Work Group to present this draft document to local municipal councils and the public for review and comment with the intent to move forward with the project to complete the initial system-wide designating of bus stops.

The Work Group feels strongly that in order to finalize the Policies of how bus stops will be managed and maintained, it is necessary to understand the total number and scope of bus stops and facility requirements in the system.

Therefore, while there is agreement on, and it is the intent of the Work Group to follow the design guidelines within this document to complete the initial system-wide designation of bus stops, it is the intent of the Work Group that the Policies be revisited and this document be finalized and presented for final approval only after the project to designate the stops is completed.



Due to the number of factors involved, each new or relocated stop must be examined on a case-by-case basis. Existing conditions affect the way that bus stops should be spaced and designed. There are also additional considerations that impact safety, convenience, and accessibility of a stop.

However, general guidelines for stop spacing and placement are as follows:

Stops should be located near areas of high population density or activity (also referred to as transit trip generators). This typically means shorter spacing between stops in dense areas and increased spacing as the environment becomes less dense and more spread out. Placing bus stops near activity centers attracts ridership by enhancing the convenience of transit service. In areas where there are several of these types of locations near each other, bus stop placement will depend more on stop spacing and other factors.

Adjacent roadway speed and width should be considered when siting and designing a bus stop.

Stops should be located in areas that protect passengers from passing traffic and are convenient and safe for pedestrian travel. Proximity to crosswalks and curb ramps will be a consideration in determining stop location.

Most people are traveling to and from the bus stop as a pedestrian or using a wheeled mobility device. The conditions of the sidewalk and connections with the surrounding area are important. A nearby street crossing with curb cuts for wheeled mobility devices, is required. For areas where it is likely that a higher volume of people will visit multiple destinations in a single trip, priority should be given to making sure that there is an accessible path throughout the area. For bus stops which serve mostly a single destination, the focus can be on a path between that destination and the bus stop.

The reach of transit service can be extended by providing connections for passengers to combine bicycling in a single trip. Wherever possible, stops should be placed close to bicycle infrastructure, especially where a stop can facilitate connections to areas without bus service. Some stops may warrant bicycle parking.

Stops should be strategically placed at transfer points where routes overlap in order to enhance coordination in the network and with other modes and providers. When nearby routes don't overlap, stop spacing should be adjusted to take into consideration the shortest path between nearby routes and services.

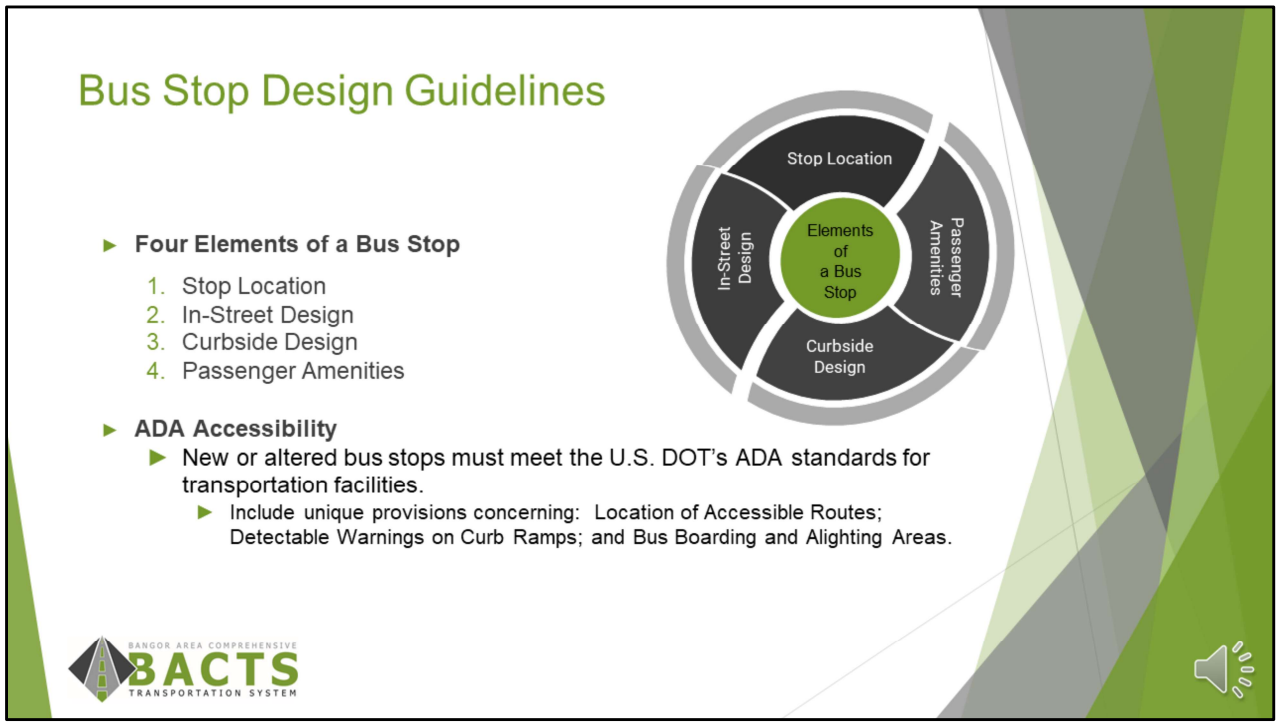
Whenever possible, bus stop locations should be paired, so that people board and alight on opposite sides of the same street in the same vicinity when making a round trip. This allows the transit service to be more intuitive and maximizes convenience for the greatest number of users.

For safety reasons, bus stops should be located so that bus operators are able to see passengers at the stop as they approach and passengers waiting at the bus stop can see bus operators. When possible, bus stops should be located at areas with existing streetlights or other ambient lighting.

Community demographics are taken into account when deciding where to operate service and the appropriate level of bus service. Federal Transit Administration requires that concentrations of Title VI populations, including low-income individuals and minorities, are considered when prioritizing the provision of amenities at bus stops.

In many cases, there are certain existing or planned locations for bus stops which stand out as being particularly important. This can be due to existing use, activity centers, transfer opportunities, or other conditions. Once these critical locations are settled, the remaining stops can be planned for optimal spacing.

This distance is a reasonable balance of the conflicting goals. However, finding suitable sites for bus stops may necessitate altering the spacing significantly. In addition, there may be reasons for bus stops to be closer together, such as major transfer points and/or activity centers. And there may be places where bus stops should be further apart.



There are four elements of every bus stop

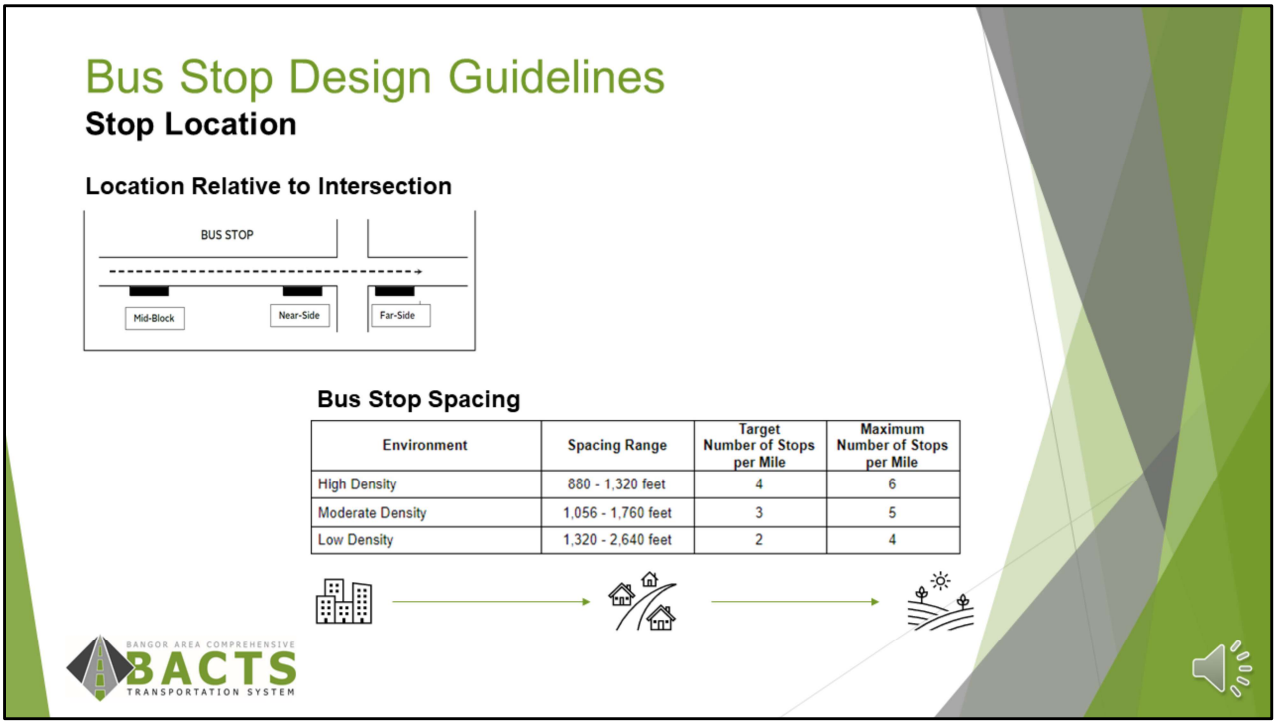
1. Stop Location
2. In-Street Design
3. Curbside Design
4. Passenger Amenities

U.S. DOT ADA standards apply to facilities used by State and local governments to provide public transportation services, including bus stops.

The Bus Stop Policies and Design Guidelines reference those standards as of writing of the document and provide reference of where to find the standards. The current ADA requirements should be reviewed prior to constructing any new facilities.

New or altered bus stops must meet the U.S. DOT's ADA standards for transportation facilities. These standards include unique provisions concerning: Location of Accessible Routes; Detectable Warnings on Curb Ramps; and Bus Boarding and Alighting Areas.

It should be noted that the design guidelines are intended to ensure that bus stops are placed and designed in a manner that is consistent system-wide and ADA compliant; however, not all bus stops will fit exactly into the preferred location and within an exact spacing. Each stops' jurisdictional and physical context may require individual review which may meet some guidelines as outlined, but not others based on those limitations.



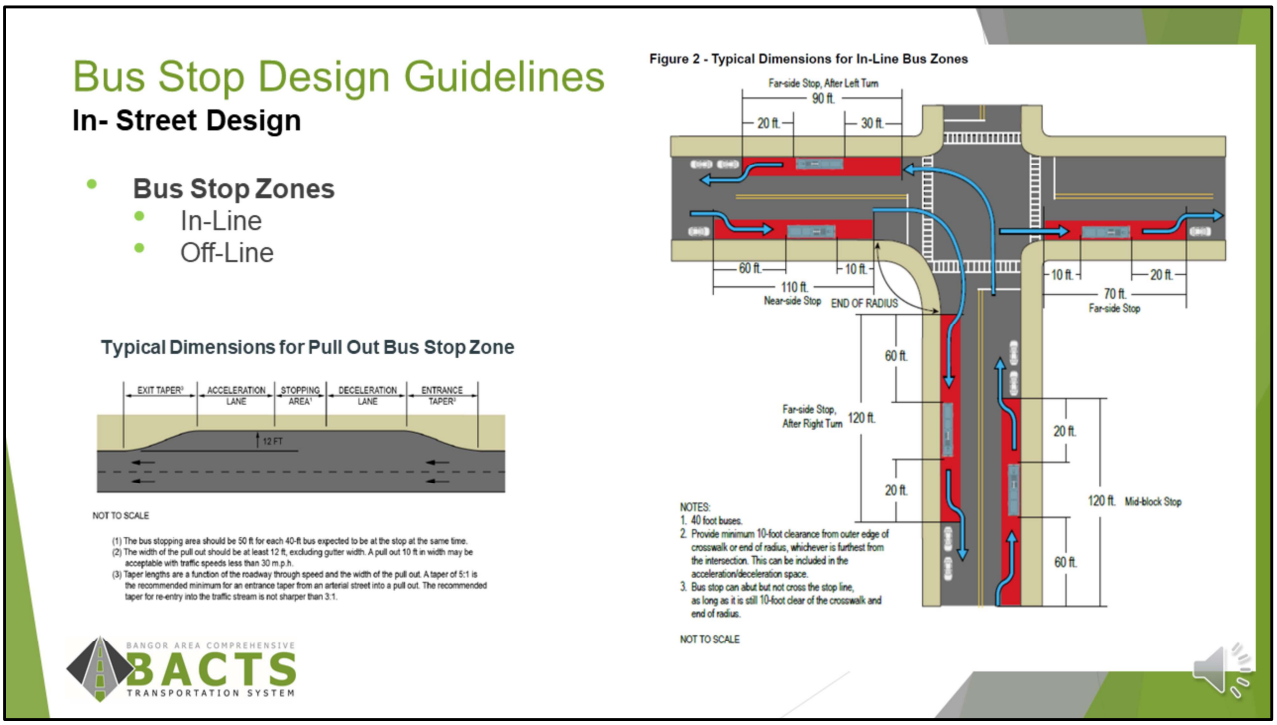
The preferred stop configuration relative to the intersection is far side. However, when the far-side cannot safely accommodate a stopped bus or the required passenger facilities a near-side stop may be used at signalized intersections.

Mid-block stops should only be used when nearby intersections cannot safely accommodate a bus and when there are major destinations between intersections on especially long blocks.

The guidelines include a table describing the advantages and disadvantages of each type of bus stop location and an appendix with flow charts to assist municipal planners and engineers in determining stop configuration.

As a generalization, for local service in urbanized areas, bus stops should be spaced every ¼ mile, with some denser areas requiring stops spaced closer together and less dense areas being spaced about every ½ mile. Keeping those generalizations in mind, We have set target number of stops per mile, with maximum number of stops per mile by environment type.

Again, there may be instances where they are existing conditions and additional considerations that require stops to be spaced closer or further apart.

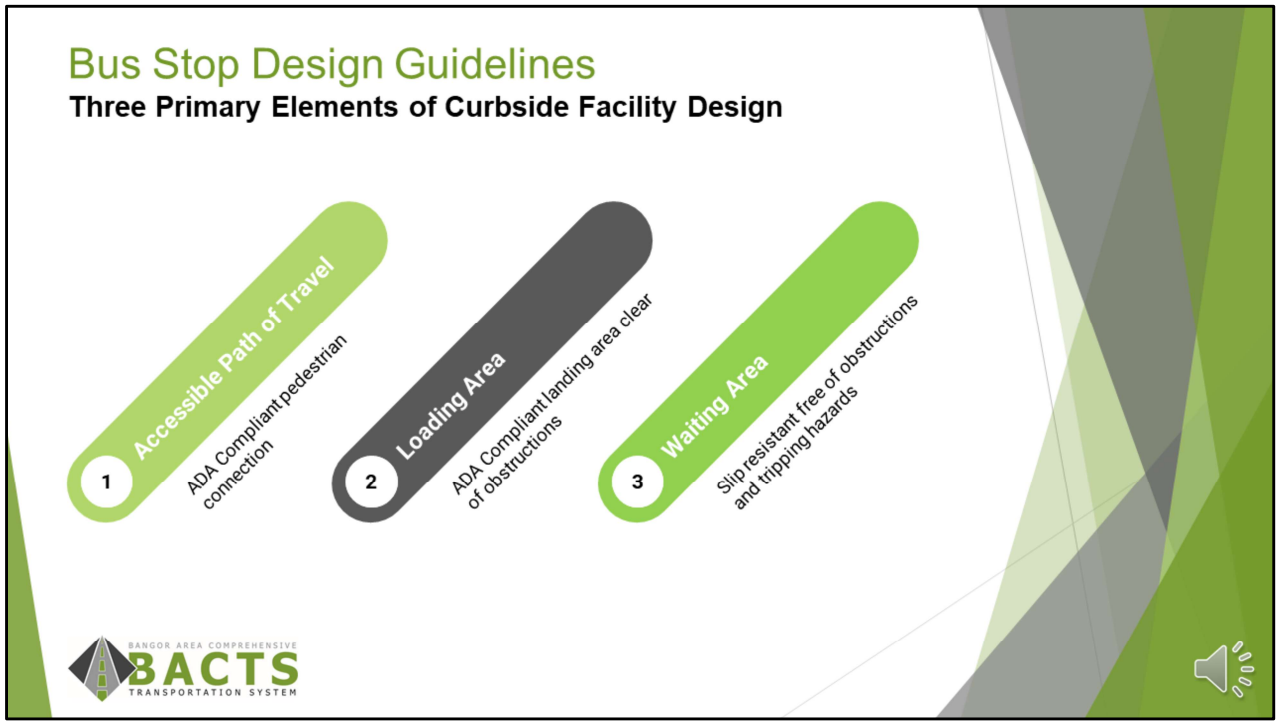


The Bus Stop Zone is the primary area devoted to bus movements and requires space for decelerating, stopping, and accelerating. The length required will vary depending on location relative to intersection, but in general will be between 70 and 120 feet.

There are two types of bus stop zones, in-line and off-line. In-Line Curbside Bus Stop requires minimum design and can be easily established or relocated. In-line zones are part of the street and participate in the general pattern of traffic. In-line zones are not recommended in areas where there is high traffic volumes with posted speed limits of more than 40 mph.

The pavement and/or curbing can be marked with white or yellow paint to alert motorist that the area is an in-line bus zone.

Off-line bus stop zones are out of the general travel way and designated for bus only. A bus bay, or pull out, is a stop that is out of the way of traffic flow and is most effective when used in areas where traffic speeds are greater than 35 mph and is recommended over a curbside stop if traffic speeds are greater than 40 mph and high-volume boarding is anticipated.



Curbside facility design has three primary elements.

An accessible path of travel is an ADA compliant pedestrian connection to bus stop via sidewalk, pedestrian/multi-use trail or road shoulder. It includes a clear width through and around the bus stop. Curb ramps to safely transition from roadway to curbed sidewalk with detectable warnings at traffic controlled intersections and mid-block crossings are also required to be deemed accessible.

An ADA compliant landing pad where the front doors of the bus open for boarding and alighting is required at each bus stop. The loading area must be clear of obstructions by any physical features, such as utility poles, trees, or signs.

The passenger waiting area must be slip resistant and free of obstructions and tripping hazards. Any amenities provided at the waiting area will be dependent upon the bus stop type, but may be limited by physical and financial constraints. Any amenities provided at bus stops must meet ADA requirements.

Three types of bus stops have been defined.

A Basic Stop is one with low daily passengers and no comfort amenities. The required elements include a bus stop sign and post and an ADA-compliant landing area. These elements are required at all bus stops.

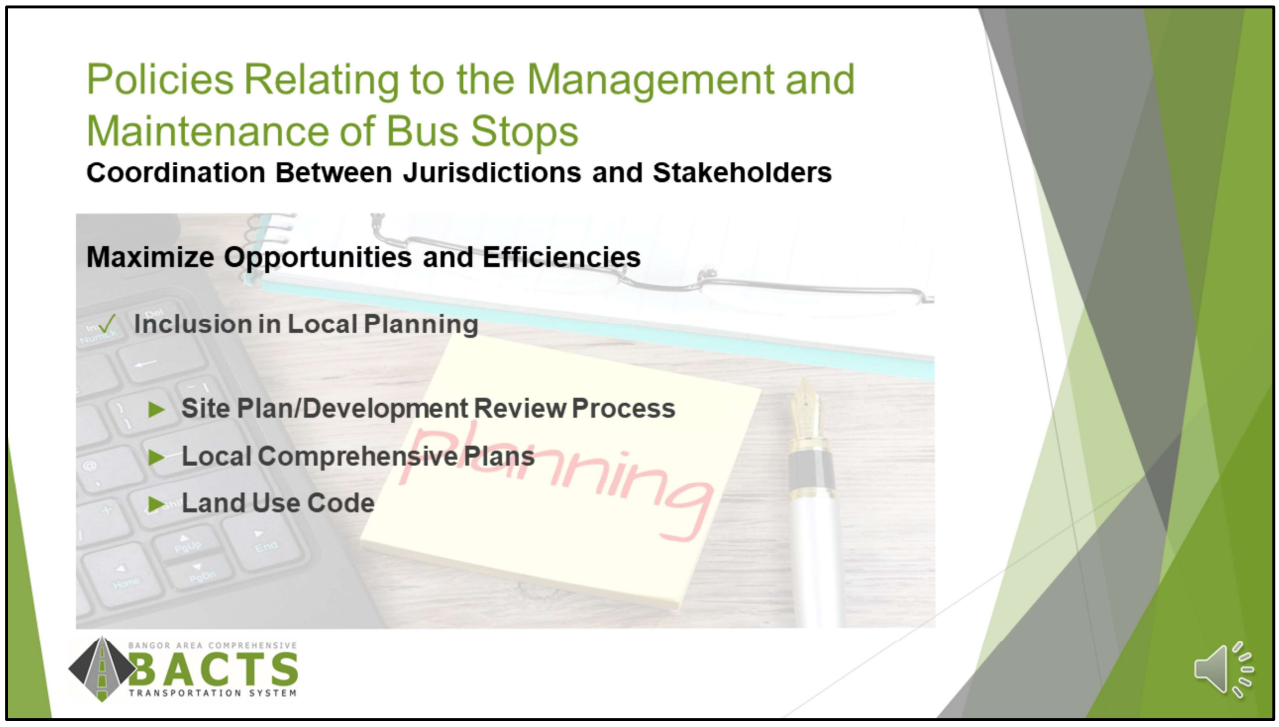
A Bench Stop is one with a moderate-level of daily passengers. Comfort amenities include passenger seating.

A Shelter Stop is one with high-level daily passenger usage. Comfort amenities include bus shelter and passenger seating.

Additional elements that may be found at all bus stop types include: Pavement markings delineating the bus stop zone; and If not near a streetlight or ambient light from adjacent business; lighting may be installed

Optional Amenities include: Trash receptacles, Bicycle Parking, Information Kiosks, Route and/or System Maps

The landing pad is the top priority in order to comply with ADA mandates. Other amenities are important, but should not displace investment in proper landing pads.



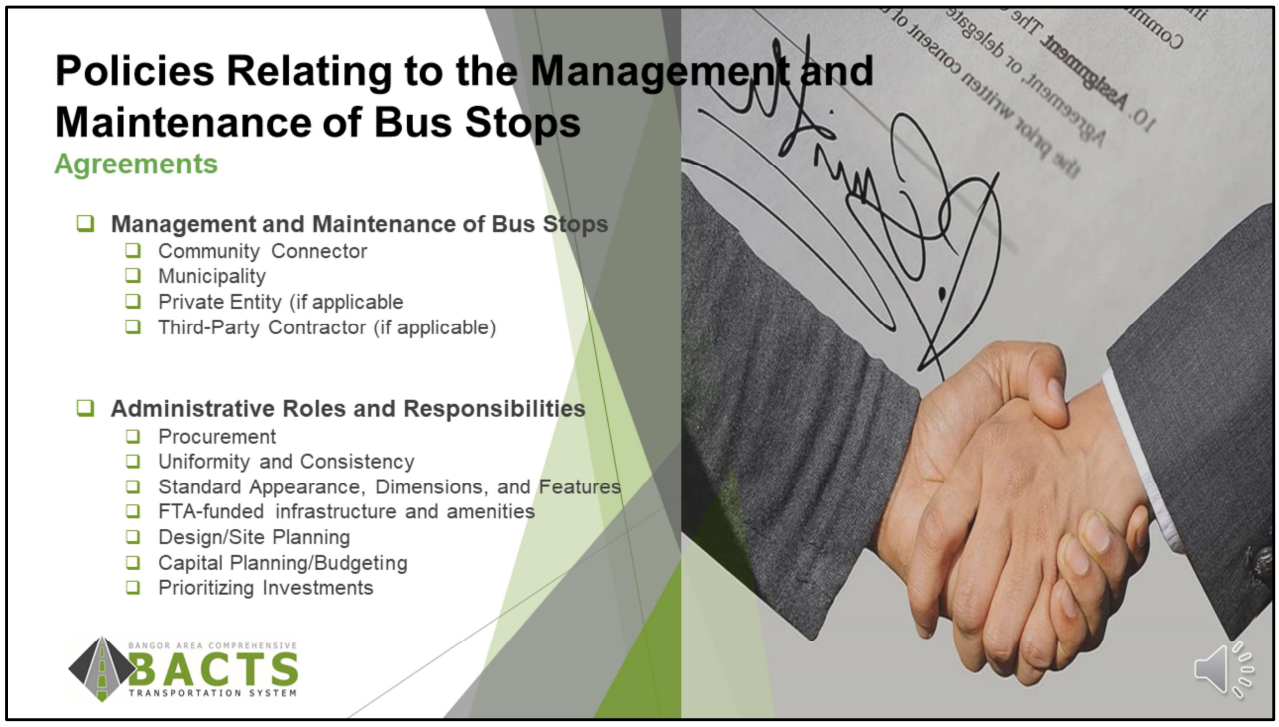
As mentioned earlier, it is the intent of the Work Group to revisit the Policies section after the initial system-wide designated bus stop plan is completed.

In order to ensure bus stops are properly managed and maintained, processes and agreements must be implemented and coordinated among jurisdictions to ensure there is mutual understanding and acceptance of each entity's roles and responsibilities.

Locally, including consideration of transit needs and impacts as a required step during the site plan or development review process can not only maximize construction efficiencies and avoid frustration of costly retrofitted infrastructure, it provides a mechanism to ensure that new development adequately accommodates impacts to existing and planned transit service.

Recognizing the transit system as a critical component of the larger regional community should also be reflected in local comprehensive plans. Local comprehensive plans should address the need to ensure systems are planned and developed to serve growth in an orderly and efficient manner. Future land use plans and policies should encourage a more transit and pedestrian-supportive development pattern to enhance the potential for future transit service operation and investment efficiencies.

Incorporating language into local land use code to ensure that new development adequately accommodates for impacts to existing and planned transit service can offer greater support and ensure efficiencies in future transit facility investments.

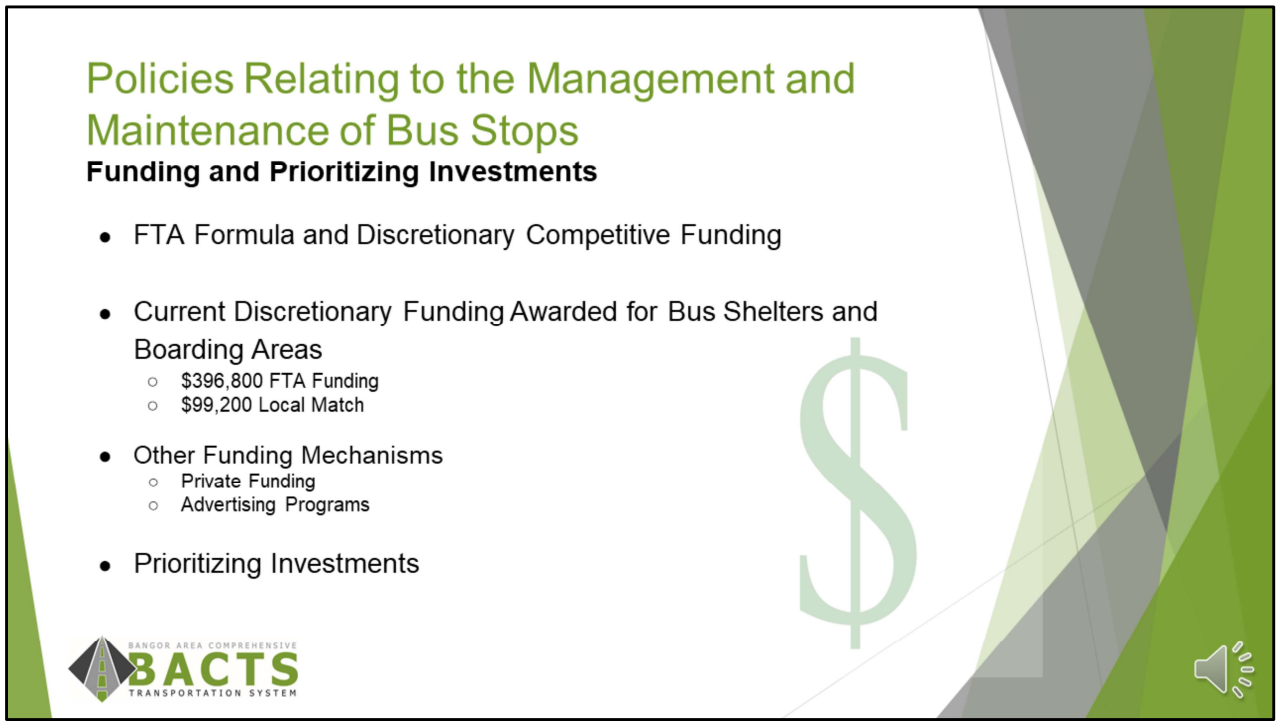


Community Connector is responsible for developing and implementing a bus stop maintenance program, as such coordinating and securing agreements with all entities to ensure everyone understands their roles and responsibilities for maintaining bus stops is extremely important. In addition to a maintenance policy and the associated agreements; policies and agreements between stakeholders related to administrative roles and responsibilities ensure the proper ongoing maintenance and management of bus stops.

Having uniform and consistent bus stop infrastructure and amenities is essential for customer service and brand recognition. Community Connector will be responsible for the procurement process for bus stop infrastructure and amenities purchased with Federal Transit Administration (FTA) funding.

Community Connector will work with the municipal partners develop agreed upon Bus Stop Sign, Sign Post, Bench, and Bus Shelter general appearance, dimensions, and desired features through the BACTS Transit Committee and develop any required product specifications and/or RFPs based on those agreed upon features.

All Community Connector bus stops, whether funded by a private entity or publicly funded, shall not deviate from the Community Connector standards. Once general design and appearance standards and specifications are agreed upon, the Community Connector bus stop element standards will be incorporated, either directly or by reference, into these guidelines.



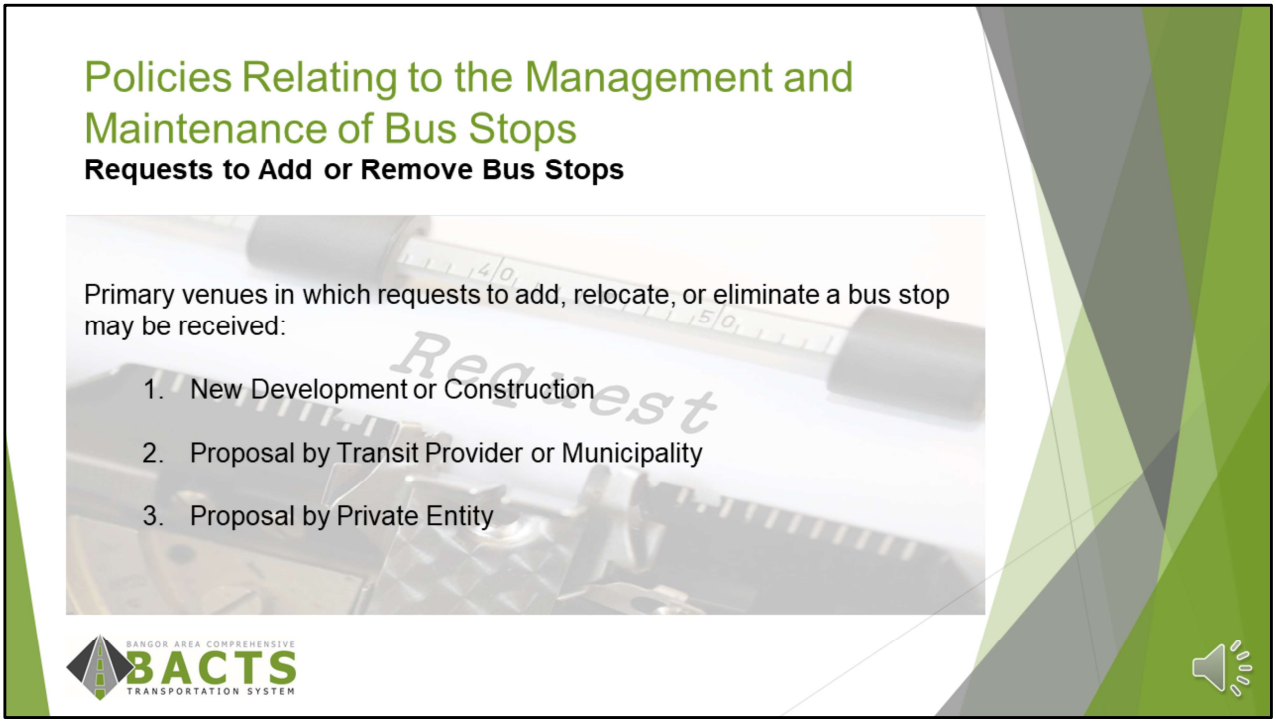
The municipal partners have expressed the desire to continue to apply for and take advantage of all available federal funding resources to finance system improvements including, the cost of implementing and maintaining bus stop infrastructure to the greatest extent possible. However, there is no guarantee of the continued availability of federal funding.

As the direct recipient of FTA funding, Community Connector will apply for annual apportioned formula funding, as well as competitive discretionary funding opportunities.

The Community Connector has been very successful in obtaining competitive discretionary funding in the last several years. Community Connector was awarded $396,800 in federal funding to add passenger shelters and bus boarding areas in federal fiscal year 2020. With the required local match of $99,200, the total amount available for this project is $496,000.

In addition to Federal Transit funding, there are other programs and/or strategies which can be explored for the purpose of subsidizing the cost of maintaining bus stop facilities, such as bus stop shelter advertising programs, private funding, and/or adopt a stop programs.

Even with the FTA funding awarded for the bus shelters and boarding areas, it is anticipated that the total cost to implement system-wide designated bus stops will exceed the amount awarded. In conjunction with the system-wide bus stop designation plan, a Facility Improvement/Amenity Needs Plan will be completed to estimate the needs system-wide and investments can be prioritized.

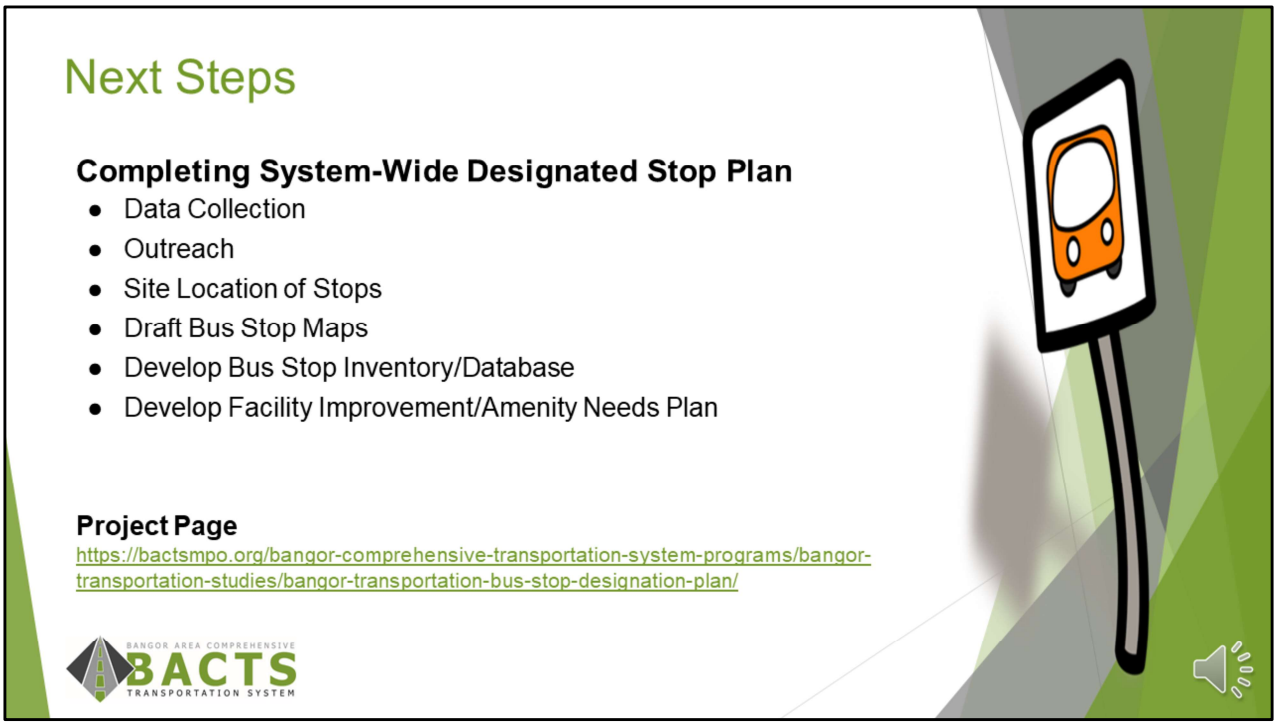


There are three primary venues in which requests to add, relocate, or eliminate a bus stop may be received:

1. New Development or Construction
2. Proposal by Transit Provider or Municipality
3. Proposal by Private Entity

During the municipal development and site plan review process, Municipal Planning/Economic Development staff will coordinate with Community Connector staff to determine if the proposed development is on an existing or proposed bus route, if current bus stop facilities are adequate to serve the proposed development, and whether or not developer will be required to incorporate bus stop improvements into the development plan and/or provide for a funding mechanism for any required improvements for a new or existing bus stop and related infrastructure and amenities. The process review, concurrence, and approvals are done at the Municipal and Community Connector level.

For requests to add or remove bus stops made outside of the Municipal development and site plan review process, those made by a private entity, or those being proposed by the Municipality or Community Connector, Community Connector Staff and Municipal Public Works and/or Engineering staff will conduct an on-site review of the proposed location to consider traffic patterns, street design, traffic safety issues, etc. The findings will be documented and a proposed site plan with improvements and cost estimates will be brought to the BACTS Transit Committee for review and concurrence.



The next phase of this project is to complete the system-wide designated bus stop plan. BACTS will be developing the Plan in consultation and collaboration with Community Connector Staff, the municipal partners, and an Advisory Work Group which will also include community representatives. It is anticipated that the Advisory Work Group will be organized and begin meeting in early summer. Desktop data collection has begun and bus operator interview/ride-alongs are expected to begin this spring.

This process is expected to take approximately 18 months to complete.

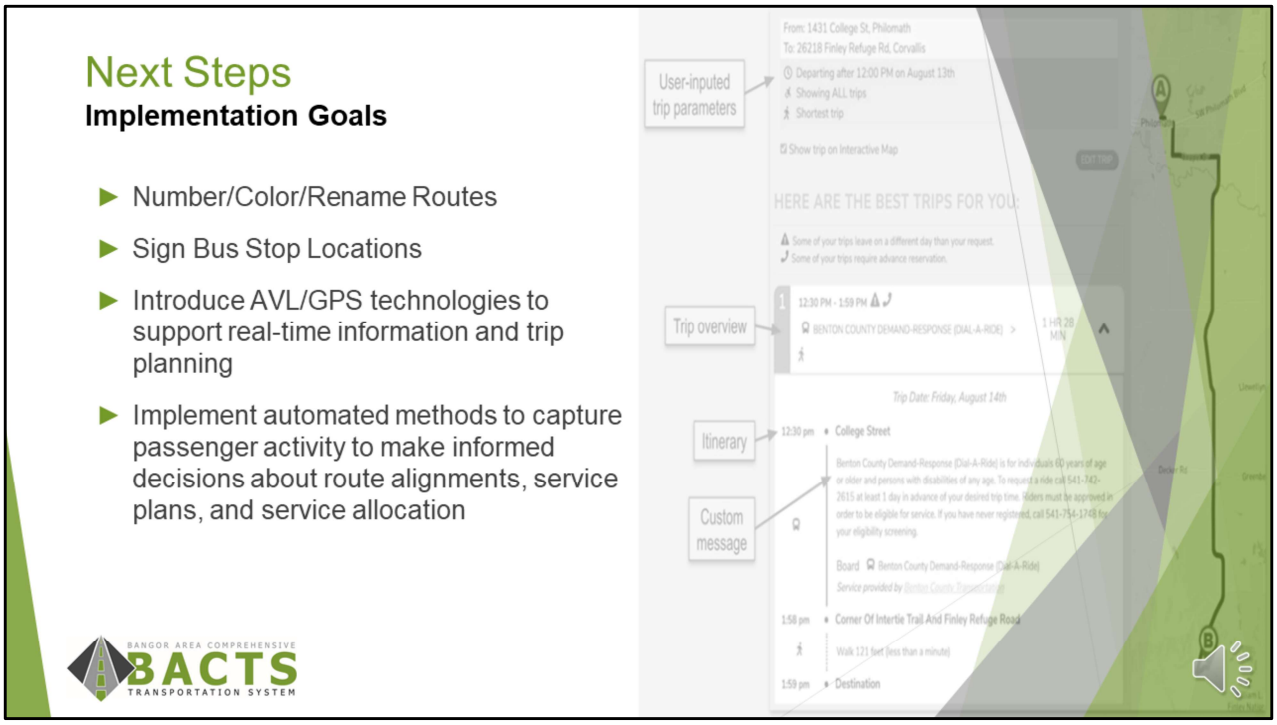
This project will be somewhat labor intensive and have an extensive public outreach component.

Data will be collected and guidelines applied to each route. Once this process is completed for the route, the project manager will connect with the appropriate municipal planner, engineer, or public works director to schedule a meeting to review the site locations. After the municipal staff reviews and agrees with the proposed location, a draft bus stop map will be developed for the route.

Public outreach and education will be a big part of this project as well. Municipal staff will have an opportunity to review and comment on any proposed plan prior to public release. There will be several outreach events to educate and obtain public feedback on the proposed plans. The final Plan will include final maps of each route detailing the location and type of each bus stop.

Once each route has been completed, a bus stop inventory will be developed to include the bus stop number, the stop type, infrastructure, amenities, and maintenance. In addition to the inventory, a facility improvement and amenity needs plan will be developed to outline the identified required improvements and amenities required for each designated stop type based on the Bus Stop Policy to assist in developing a fiscal/capital plan.

As things progress throughout this project, information will be posted on the project page on the BACTS website https://bactsmpo.org/bangor-comprehensive-transportation-system-programs/bangor-transportation-studies/bangor-transportation-bus-stop-designation-plan/



In conjunction with the bus stop designation plan, we anticipate that Community Connector will also be implementing numbering and coloring of routes and potentially renaming of routes.

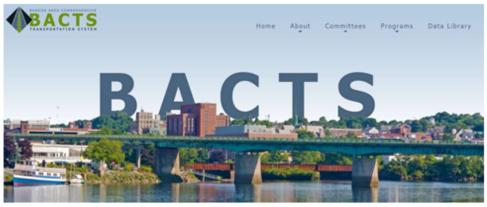
It is likely that designating stops will be done in several phases. The first phase of implementing the designated stops may be to erect bus stop signage to identify locations - treating all stops as basic stops.

The ultimate goal for designating bus stops is to be able to implement technologies that will be able to provide passengers with better information, predictability, and trip planning services. These technologies can also provide systems to capture passenger data that will provide more transparency and data to support service decisions.

Public Review and Comment Period

The draft Bus Stop Policy and Design Guidelines document can be viewed on the BACTS website at:

https://bactsmpo.org/wp-content/uploads/2021/03/DRAFT-Bus-Stop-Policy-and-Design-Guidelines.pdf



Public Comments should be made in writing on or before 4:00 p.m., Friday, April 30, 2021 to:

Connie Reed
12 Acme Road, Suite 104
Brewer, Maine 04412
connie.reed@bactsmpo.org

BANGOR AREA COMPREHENSIVE BACTS TRANSPORTATION SYSTEM

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