



# SHUTTLE BUS FEASIBILITY STUDY AND A QUALITATIVE EVALUATION OF CURRENT TRANSIT SERVICES

**Salem, Massachusetts**



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## EXECUTIVE SUMMARY

The City of Salem is an AARP-recognized, age-friendly community with a focus on providing services that make it an exceptional place to live, work and play. With a 20-member stakeholder representative group, seven staff and its consultant TransAction Associates, the city conducted a shuttle bus feasibility study and an evaluation of its existing transit services. The goal was to determine if a new shuttle system is operationally and fiscally practical, and to determine if existing transit services can be improved and, if so, how.

To understand the transit needs in Salem, the study began with an inventory of available services, public meetings and a city-wide transportation survey.

Through this process the following items were identified as priorities:

- Connectivity between neighborhoods.
- Dependable and frequent connections to major shopping and medical centers.
- Expansion of the existing Council on Aging shuttle service to accommodate social/recreational trips (existing service is currently limited to trips related to shopping and medical services).
- Evening and weekend shuttle services.
- Improvement to the reliability of existing six MBTA bus routes that travel through the City of Salem (the MBTA indicates approximately one out of every three buses generally arrives six minutes before or after its scheduled time).
- Improved sidewalk and roadway surfaces for better accessibility.

Successful transit services in Massachusetts, as well as one national model in California, were contacted and evaluated to identify strategies for scheduling, routing, partnering, branding and funding. From this effort, several “best practices” were identified such as:

- Cost-sharing models between the public and private sectors can be successful.
- Shuttle bus schedules and routes should be flexible to respond to seasonal demands and special events.
- Branding is important for increased awareness and marketing.
- Demand-response routes provided by adjacent cities’ and town’s Councils on Aging vans can be dispatched from a common dispatch center. This allows more time for riders to speak with a live person, potentially increased ridership, and an improved ability to fill in gaps left by last minute cancellations, improving the efficiency of current Council on Aging services.
- When starting a new shuttle service, consider starting with a demand-response route. Collect data on ridership and use that data to establish fixed-route service that meets actual needs.

Combining the transit needs with best practices, along with additional input of stakeholders and city planning staff, the following nine alternatives for improving transit services in Salem were developed:

- Two alternatives for refining existing services.
- Five alternatives for new services, including intra-city circular loops and a demand-response shuttle service.
- Two alternatives for forming partnerships.

The study recommended that intra-city circular loops or a demand-response service be implemented and that the city request a meeting with the MBTA to try to negotiate improved services. However, any of the nine alternatives, or combinations of alternatives could be implemented.

The conceptual routes depicted within the report were developed based on community input in consultation with the City of Salem's Council on Aging. It is expected that they will be modified either before launching based on future community input or based on real-world experience once fully launched. The study presented conceptual level costs to implement both the fixed-loop and demand-response routes. Costs for the city to directly provide the services, as well as to contract-out the service to a vendor, were estimated.

The report concludes with a list of possible funding sources and recommendations for next steps.

# 1.0 INTRODUCTION

The City of Salem, Massachusetts is a historic coastal city of eight square miles located in Essex County on the North Shore. Founded in 1629, Salem has an estimated 43,000 residents and is home to a unique blend of historic landmarks, tourist attractions, museums, and employment centers, as well as Salem State University and the North Shore Medical Center, the North Shore's largest healthcare provider. Salem takes great pride in being a place that offers opportunities to live, work, and play. It also has an objective to provide excellent transit services.

Salem has a number of transportation services including an MBTA Commuter Rail Station, MBTA bus services, ferry boat services, and local options such as the Council on Aging (COA) vans and the Salem Trolley. However, these various options do not meet all of the needs of the community and are not connected in a coordinated way, rather each one serves a particular niche. For example, the COA provides a limited van service for trips to grocery stores and to health providers. The vans cannot be used for any other purposes such as social or recreational trips. The Salem Trolley provides service around the downtown area, but it is seasonal and residents can only ride if it is not full with paying customers. Lastly, it is challenging for transit riders, especially seniors, to depend on any public services for intra-city travel due to long waits between trips and bus stops without shelters, which do not meet current standards for accessibility.

According to the U.S. Census Bureau, Salem's population has been in a growth phase and this trend appears to be continuing--in particular among older adults. Currently, approximately one in five Salem residents (8,000) is over the age of 60. The Metropolitan Area Planning Council (MAPC) projects that this will grow to one in four (12,000) by 2030. A quarter of the households in Salem are home to one or more children. These populations, among others, have been identified as having an interest in transit services currently not offered within the city. Gaps in transit services can potentially be closed by implementing new shuttle service and/or modifying existing transit services within the city.

The goal of this report is to identify whether a shuttle system is operationally and fiscally practical, and to determine if existing transit services can be improved and if so, how.

## PROJECT HISTORY/BACKGROUND

In 2016, Salem was added to the AARP national network of Age Friendly communities. Salem became the first city on the North Shore to join the network and only the third in the Commonwealth. Being in the network prompted the city to develop *Salem for All Ages: An age-*

*friendly action plan*. The action plan focuses on establishing a vision for each of what the AARP and the World Health Organization (WHO) call the “eight domains” of an age-friendly community, one of which is transportation. A transportation goal identified in the action plan is to commission a feasibility study of a shuttle in the city.

Recognizing the importance of transportation, the city commenced the *Imagine Salem Visioning Project*, an in-depth visioning process with a focused dialogue around transportation, housing, and employment, with themes of equity and inclusiveness woven throughout.

The *Imagine Salem Progress Report* recommends that the city’s transportation system should allow travelers to string together different mode choices where appropriate. The report specifically notes that “it is unreasonable to expect all transportation modes to work for all trips and creating independent systems for all transportation modes would be redundant in many places.”

With limited access roads into and out of the city, vehicular congestion was cited as a major concern among residents throughout a number of recent studies and in the *Imagine Salem Progress Report*. The report also notes that Salem, located just 26 miles north of Boston, is by no means a bedroom community. Approximately 17,000 commuters leave Salem each day, and roughly the same number arrive to work in the city. In terms of commuting choice, of the approximately 22,000 working residents of Salem, 67 percent drive alone to their jobs each day, which has a significant impact on local roadways.

The Point neighborhood is the densest area of the city with some block groups populated by 95 people per acre. Other neighborhoods identified as being relatively dense in the *Imagine Salem Progress Report* (data from the American Community Survey, 2010-2014 five-year estimates) include the downtown area, McIntire District, Gallows Hill, Salem Common, and Derby Street. Parts of Bridge Street Neck, North Salem, and South Salem were also identified as being relatively dense.

The report also notes that it is important to look at the daytime population, which includes job centers. The most densely populated areas with regard to job centers include the area around North Shore Medical Center and Salem State University.

The more than one million tourists that visit Salem throughout the year pose specific challenges around transportation. As home to *Haunted Happenings*, a month-long Halloween celebration, the city hosts more than 250,000 visitors in October alone. As a coastal community, roadways can also be congested with visitors to the city’s many summer attractions as well as throughout the year.

Salem Mayor Kim Driscoll wrote in the opening of the *Salem for All Ages* report that “Great cities do not happen by accident. They take careful planning, public input, and meaningful action.” In keeping with that statement, this report identifies ways to improve transportation options in Salem as part of the effort to make it a place where people want to live, work and play for many years to come.

Thus, this transit study stems from the goals of the *Salem for All Ages Action Plan* and recommendations developed through the *Imagine Salem Visioning Project*. The study is funded through a Tufts Health Plan Foundation Grant awarded to the Friends of the Salem COA in the summer of 2017. The grant reflects the Tufts Health Plan Foundation’s commitment to building healthier communities by promoting collaboration and improving systems and best practices.

## ACKNOWLEDGEMENTS

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- Dominick Pangallo, Chief Administrative Aid/Age Friendly Task Force
- Matt Smith, former Traffic and Parking Department Director

## 2.0 STUDY PROCESS/METHODOLOGY

To determine the feasibility of a shuttle service within the city and to assess the efficiency of existing transit services, extensive background research was conducted and input from the public was solicited. From this information, alternatives for shuttle routes/services and ways to enhance the existing transit services were developed and analyzed.



The project began with a comprehensive public involvement process including several public meetings and a city-wide transportation survey. A detailed inventory of available transportation resources in the city was created, including transit options, as well as options to connect to destinations outside of Salem. Based on information received from the public, the survey and the inventory of existing transportation resources, gaps in existing services were identified.

Other communities' shuttle systems were then reviewed in order to identify best practices for operating an intra-city shuttle service. In addition, phone and email interviews were conducted with several transportation providers.



Alternatives for improving existing services, as well as developing new shuttle services, were reviewed and analyzed using the information gathered from the outreach meetings, the survey, the inventory and evaluation of existing transit services, and research conducted on existing successful shuttle systems and transportation management associations.

The report was reviewed in draft form by the stakeholder group participants who offered feedback and suggestions. It concludes with recommendations to further develop several of the alternatives and provides suggestions for implementation, funding sources and next steps.

## 3.0 EXISTING TRANSIT/FERRY/BICYCLE SERVICES

The City of Salem provides some options for residents who do not wish to travel by car. Existing services are available for certain trips within the city and some service is provided to/from destinations outside the city, mostly to/from Boston. Most of the current services target specific users such as the Salem seniors, Salem State University students and Salem tourists. Local services include a van service provided by the COA, the Salem Trolley, rideshare services, special event shuttle services, MBTA buses, bicycle share programs and a seasonal harbor ferry. More regional services include the MBTA (commuter rail system, bus system and RIDE), a ferry service between Boston and Salem, and Logan Express (to/from Boston's Logan Airport).

### COUNCIL ON AGING (COA) VANS

The COA vans are available to Salem residents aged 60 or older, or those with a qualified disability. The service offers rides by appointment for medical trips (in and out of the city) and shopping/errands within the city. No fares are required, but donations of \$1.00 per trip for trips within the city, \$2.00 for trips to destinations outside of the city and \$5.00 for certain special events are requested. The COA operates three 8-seat vehicles and two 12-seat vehicles. Although the COA vans are a good example of a successful service, the service is only available to a certain segment of the population and does not operate on a fixed route. In 2017, the program provided approximately 17,000 rides or 1,400 rides a month. The most requested destinations were the Senior Center, medical facilities and retail centers. The COA vans are paid for with a combination funding sources including the city's municipal budget, the state budget (formula), and state grants.

The Council on Aging recently ran an evening and weekend pilot program. The vans operated three nights a week (Tuesday and Wednesday until 6:00 p.m., and Thursday until 7:00 p.m.) and on weekends. Just under 2,000 rides were taken as part of the pilot between September 2017 and June 2018. Service was only available to destinations in Salem and could not be used for medical trips. The data collected indicates that people primarily used these hours of service for social/employment trips to go to places such as the grocery store, shopping, and to restaurants.

## MASSACHUSETTS BAY TRANSIT AUTHORITY (MBTA) COMMUTER RAIL

Salem Depot, the MBTA Commuter Rail Station, is located in downtown Salem and is on the Newburyport/Rockport line. The station is within walking distance (half-mile or ten minutes) of the downtown historic core and some neighboring areas. There is frequent weekday service between Salem Depot and North Station that provides good access to Boston. Weekend service is somewhat more limited but still available throughout the day. Salem Depot is fully accessible and has a parking garage with 700 spaces. In 2016 the MBTA reported there were an average of 2,389 inbound boardings per day. The cost for a one-way trip is \$7.50 and a monthly pass is available for \$244.25. The Commuter Rail schedule is as follows:

- Monday to Friday: Inbound: 4:55 a.m. to 12:00 a.m., Outbound: 6:26 a.m. to 1:22 a.m.
- Saturday: Inbound: 7:00 a.m. to 11:11 p.m., Outbound: 12:42 a.m. to 11:30 p.m.
- Sunday: Inbound: 7:00 a.m. to 11:11 p.m., Outbound: 8:30 a.m. to 12:42 a.m.

## MBTA BUS SERVICES

The table and figures that follow summarize the four bus routes operated by the MBTA in the City of Salem. Although six bus routes are identified on the MBTA website as traveling through Salem, two bus routes follow the same routes within the city, differing only south of Lynn and two other bus routes also follow similar routes within the city, differing only south of Revere. All of the routes stop at Salem Depot, serve many of the city's arterials roadways, and all travel over municipal boundaries either north to Beverly or Danvers, or south to Lynn, Revere and Boston. The cost to ride the MBTA Route #451 and #455 bus is \$1.70 to \$2.00, depending on the payment method or is included with an \$84.50 Monthly Link Pass. The cost to ride the MBTA Route #450/450W and Route #459 is either \$4.00 or \$5.00 depending on the payment method and is \$128 for an Inner Express Bus Pass. Public input indicates that many people are unsure of the bus schedules and have reported issues such as unreliability and inconsistency. A review of the schedules published by the MBTA, confirms that they are confusing and difficult to understand.

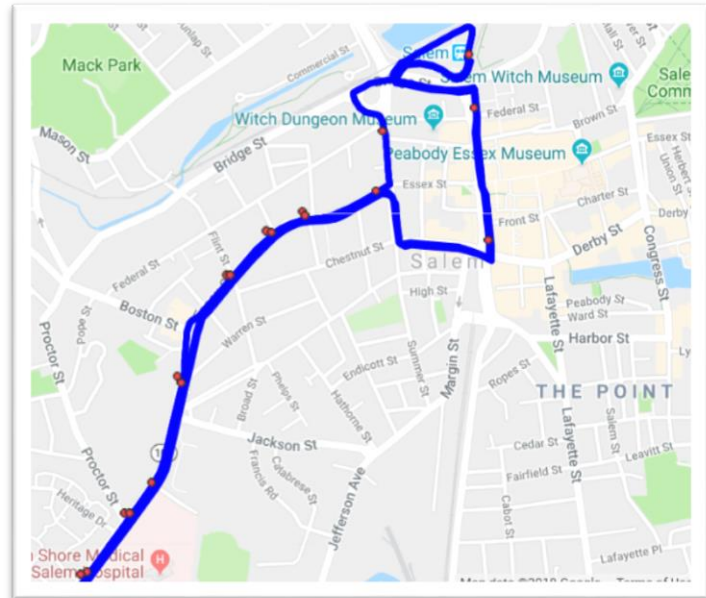
A brief summary of the six routes is provided below. Ridership and reliability data are summarized in a table that follows the summaries.

## **BUS ROUTE #450/#456**

*Salem Depot to Boston/Revere (#450)  
and Lynn Central Square (#456)*

### SERVICE:

Washington Street (Downtown area, Riley Plaza), Essex Street (McIntire Historic District, Salem Public Library), Highland Avenue (Salem Hospital, Market Basket, Salem High School, Walmart). Although these routes provide the same local service, #450 terminates at Wonderland Station in Revere or at Haymarket in Boston and #456 terminates in Central Square in Lynn.



### WEEKDAY SCHEDULE:

All day except from approximately 1:30 a.m. to 5:00 a.m. Headways are generally 30 to 40 minutes southbound and vary from 25 to 70 minutes northbound during day time and early evening hours. After 9:00 p.m., headways average one hour southbound and 20 minutes northbound.

### SATURDAY SCHEDULE:

From approximately 6:30 a.m. to 12:00 a.m. Headways are generally 70 minutes in both directions.

### SUNDAY SCHEDULE:

From approximately 8:15 a.m. to 12:00 a.m. Headways are 60 minutes.

## **BUS ROUTE #451**

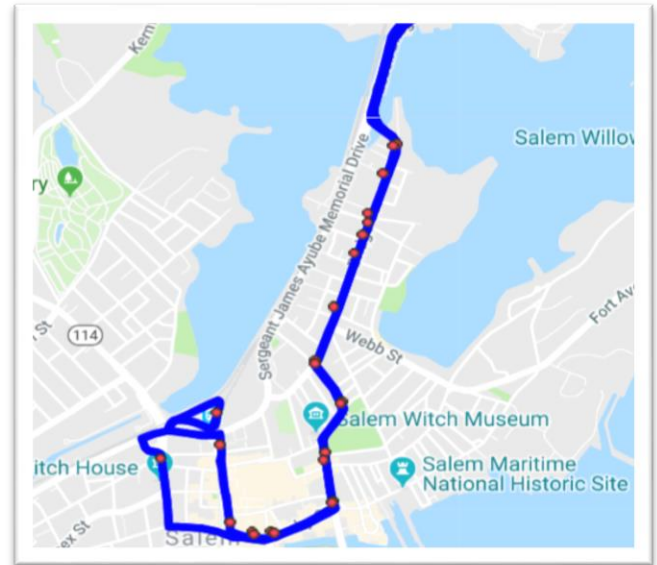
### *Salem Depot to Beverly*

#### SERVICE:

Bridge Street, Hawthorne Blvd (Tourist sites, Waterfront Garage), Derby Street, Washington Street (Court House, Riley Plaza) and Beverly Hospital.

#### WEEKDAY SCHEDULE:

From approximately 6:00/6:50 a.m. to 7:10 p.m. Headways are generally 60 minutes. However, there are significant gaps in service. Northbound to Beverly, there is no bus service between 8:20 a.m. and 2:30 p.m. Returning to Salem from Beverly, there is no bus service between 9:32 a.m. and 3:52 p.m. There is no weekday evening service or weekend service.



## **BUS ROUTE #455/#459**

### *Salem Depot to Revere (#455) and Boston (#459)*

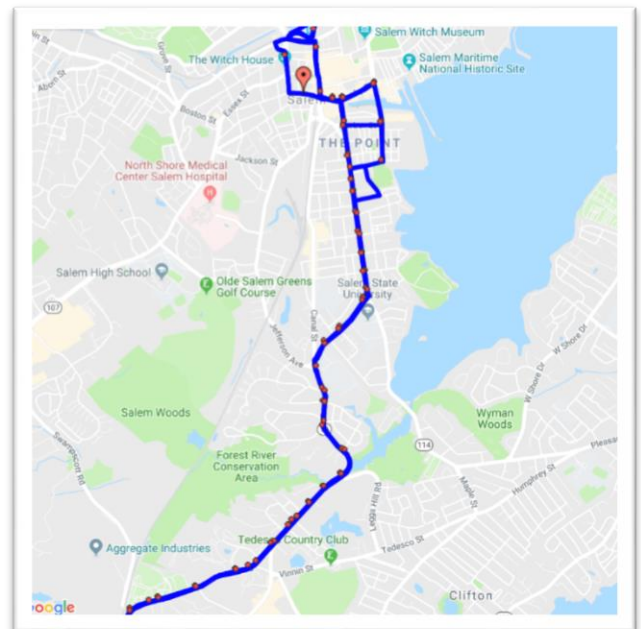
#### SERVICE:

Bridge Street, North Street, Washington Street (Riley Plaza, Court House), Derby Street (tourist area), Congress Street (Palmer Park and Palmer Cove), Lafayette Street (Salem State University), Loring Avenue and Vinnin Square.

Although these routes provide the same local service, #455 terminates at Wonderland Station in Revere and #459 terminates in Boston, with stops at Logan Airport, Seaport District and Downtown Crossing.

#### WEEKDAY SCHEDULE:

All day except from approximately 12:30 a.m. to 5:00 a.m. Headways for local service range from 20 to 40 minutes during the day and over an hour after 7:00 p.m.





SATURDAY SCHEDULE:

#455 runs on Saturdays from approximately 6:00 a.m. to 12:00 a.m. Headways are generally 30 to 35 minutes.

SUNDAY SCHEDULE:

#455 runs on Sundays from approximately 6:00 a.m. to 12:00 a.m. Headways are 60 minutes.

**BUS ROUTE #465**

*Salem Depot to Danvers*

SERVICE:

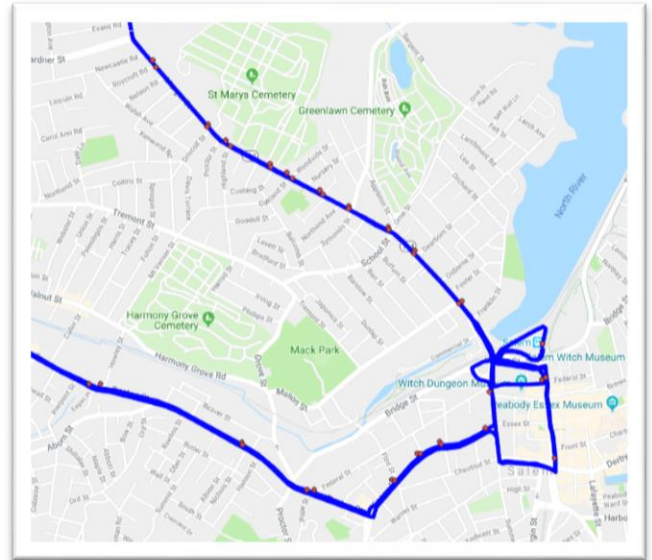
Washington Street (Court House, Riley Plaza), Essex Street (McIntire Historic District, Salem Public Library), Boston Street. This bus also provides a connection to the Northshore Mall in Danvers.

WEEKDAY SCHEDULE:

From approximately 7:00 a.m. to 7:00 p.m. Headways are generally 60 minutes.

SATURDAY SCHEDULE:

From approximately 9:30 a.m. to 7:00 p.m. Headways are generally every two hours.



**RIDERSHIP & RELIABILITY**

Reliability and average daily ridership data for the six MBTA bus routes providing service in Salem is summarized in the table below. A comparison of ridership data from 2012 indicates that ridership is lower on all routes with the exception of the Route #455 bus weekday service. The reliability ratings for these buses, each of which have headways exceeding 15 minutes, is the percentage of buses that arrive within six minutes of its scheduled time. As shown, bus route #455 is the most highly utilized with generally almost 1,300 riders per weekday inbound and under 1,000 outbound with similar ridership on Saturday in each travel direction. Unfortunately, #455 also has a 59 percent reliability rating. With the exception of bus #456, all the bus routes have a reliability rating of 62 percent or less. This means that at least one out of every three buses arrive more than six minutes before or after its scheduled time.

			2017 Ridership <sup>2</sup>					
Bus Route	End Points	Reliability <sup>1</sup>	Weekdays		Saturdays		Sundays	
			Inbound	Outbound	Inbound	Outbound	Inbound	Outbound
#450	Salem Depot (N), Boston (S)	56%	696	784	506	363	388	464
#451	Beverly (N), Salem Depot (S)	60%	52	81				
#455	Salem Depot (N), Revere (S)	59%	1298	975	1246	1009	821	590
#456	Salem Depot (N), Lynn (S)	79%	101	148				
#459	Salem Depot (N), Boston (S)	40%	489	418				
#465	Danvers (N), Salem Depot (S)	62%	156	147	95	72		

<sup>1</sup>Source: MBTA Dashboard Website (last 30 days)

<sup>2</sup>Ridership provided by the MBTA based on 2017 Composite Day data

## THE RIDE

The RIDE is the MBTA's door-to-door, shared-ride paratransit service. The RIDE is operated by the MBTA in compliance with the Americans with Disabilities Act (ADA). The RIDE can assist with public transportation for individuals who have a disability that prevents them from using the MBTA bus, subway, or trolley all or some of the time. In Salem, the RIDE is operated by Greater Lynn Senior Services. The one-way fare for local trips is \$3.15.



The MBTA is also running an on-demand paratransit pilot with Uber and Lyft, where RIDE customers can book subsidized rides instantly from their smartphones. Each month RIDE customers get a limited number of subsidized rides, depending on their eligibility. Riders pay the first \$2.00 of the trip, and anything over a \$42.00 fare. Rides can be requested in the Uber and Lyft apps, and Lyft offers a call-in feature as well for those who prefer not to use the app.

## TAXI AND RIDESHARE SERVICES

Salem is fortunate to have a number of taxi companies (Witch City Taxi, Salem Taxi and Americab Taxi), as well as good access to transportation sharing services like Lyft and Uber. Although these services can be expensive for regular trips such as for commuting, and for those with a fixed income, they do provide good access around the area for specific trips. Typical trips within Salem could cost between \$6 and \$20 depending in the distance and time of day. In 2017, the Massachusetts Department of Public Utilities reported that 296,482 trips were provided by rideshare companies with an origin in the City of Salem.

In addition to the taxi companies and services such as Lyft and Uber, Salem has several locations where Zipcars are available. Zipcar is a carsharing service that offers access to rental vehicles by the day or by the hour to its members. For an annual membership fee and a nominal cost to rent the car, participants can have access to a vehicle without owning one.

## SALEM STATE SHUTTLE

Salem State University (SSU) provides two shuttle services to its community and guests. These include two fixed-routes operated by a private carrier (the Viking Campus Shuttle and the Viking Salem Depot Shuttle), and a student operated demand-response shuttle.

The fixed-route shuttles are operated using coach buses and only on weekdays. The Viking Campus Shuttle operates from 7:00 a.m. until 7:00 p.m. The Salem Depot Service provides a connection to the Salem Commuter Rail Station from 7:00 a.m. to 9:00 a.m. and from 3:00 p.m. to 6:00 p.m. None of these routes operates in the evening or on weekends. All vehicles are accessible. A 2015 report prepared by the SSU Geography Department on the Viking Shuttle indicated that the shuttles suffer from some service related issues and are “too often neither timely nor efficient.” This may explain why anecdotal information suggests that the service in general is underutilized.

The student-run shuttle provides service to on-campus locations, as well as several off-campus locations such as Vinnin Square, Market Basket and downtown Salem. This service is offered on Mondays from 5:00 p.m. to 12:00 a.m., other weekdays from 7:00 p.m. to 12:00 a.m. and on weekends from 12:00 p.m. to 12:00 a.m. It currently operates primarily as an on-demand service, but going forward will be moving more toward a fixed route. SSU indicates that reliability has been an issue for this service due to difficulty with retaining student drivers. The University owns the 4 vans used to operate this service, they are between 5 and 12 years old and only one of the four vehicles is accessible with a wheelchair lift.

City of Salem residents are not permitted to use this service unless they are affiliated with the University.

Salem State students get a discounted membership to Zipcar and also have the requirement to be 21 to rent waived through the University's affiliation with the program. Students need only be 18 years old and have a valid driver's license to participate. This provides access to a vehicle to students on-demand.

SSU has indicated a strong desire to collaborate with the City, in particular in the future when they may be looking to close their South Campus location which would present more opportunities to restructure the existing service. More data on usage of the existing services may help to make decisions about the best ways to collaborate with any programs that the City offers.

#### NORTH SHORE MEDICAL CENTER SHUTTLE

The North Shore Medical Center operates a shuttle service for its employees who are required to park off-site on weekdays. Two 12-seat buses are used for this service and operate from 5:00 a.m. to 12:00 a.m. Monday through Friday. These buses are not accessible.

#### LOGAN AIRPORT TRANSIT

For Salem residents traveling to the airport, Massport operates the Logan Express bus offering service between Peabody and Logan Airport. The bus leaves every hour from 3:15 a.m. to 10:15 p.m. Return trips leave Logan every hour from 4:15 a.m. to 1:15 a.m. One-way fare is \$12.00 and daily parking is \$7.00.

KT's Transportation and the North Shore Shuttle (operated by BeDriven) also provide scheduled door-to-door transportation to Logan Airport. Rides on the services can be scheduled as private or shared.

As of April 2018, the MBTA extended its Silver Line bus to travel from Bellingham Square in Chelsea to Logan Airport. Salem residents can get to Bellingham Square from the Chelsea stop on the MBTA Newburyport/Rockport line.

## SEASONAL/TEMPORARY TRANSIT SERVICES

### **SALEM FERRY**

As a coastal community, Salem has the unique ability to use water transportation options. A ferry service is operated by Boston Harbor Cruises, providing a connection between Long Warf in Boston to the Salem Ferry Center located at 10 Blaney Street in north Salem. Service is available between May and October. The regular round-trip cost for one adult is \$45.00, for Salem residents it is \$19.00, and for commuters (7:00 a.m. and 5:30 p.m. departures only) the cost is \$16.00.

### **SALEM HARBOR SHUTTLE/TAXI**

The Salem Harbor shuttle/taxi service operates from June to Labor Day and services four stops located along a loop. Stops are available upon request and include Blaney Street, Congress Street, Winter Street and Salem Willows. The fare is \$7.00 for adults.

### **SALEM TROLLEY**

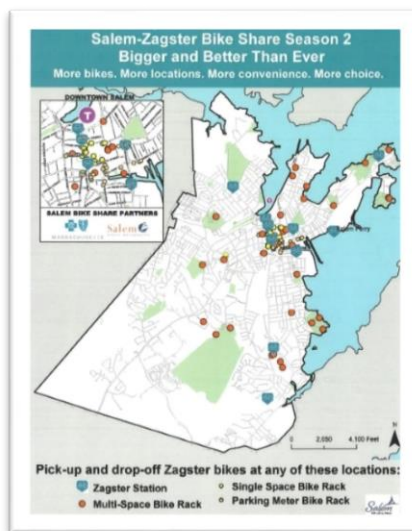
The Salem Trolley is a privately-owned seasonal service operating from June 1<sup>st</sup> to September 30<sup>th</sup> and is geared toward giving tourists a one-hour narrated tour of the city. Although it costs \$18 for tourists, the trolley is free to residents. This free service is made possible due to funds paid to the trolley company by the city. The trolley runs seven days a week from 10:00 a.m. to 5:00 p.m. The route includes much of downtown Salem and Salem Willows.

Trolley tickets can be purchased online, or at several museums and businesses throughout the city. A challenge for residents is that free tickets can only be purchased at the Salem Trolley office, which is not convenient for everyone. Moreover, priority is given to paying passengers.

## HAUNTED HAPPENINGS SHUTTLE SERVICE

In 2017 Salem launched an extremely successful seasonal pilot program on weekends in October called the *Haunted Happenings Shuttle*. The service used school buses to connect three off-site parking locations (Salem High School, Salem State University O’Keefe Center and Salem Hospital) to the downtown area, which is the primary destination for many of these seasonal trips. This program was able to reduce traffic congestion by keeping cars out of the downtown area. The service carried a total of 9,416 passenger trips and was offered at no cost.

## BIKE SHARE PROGRAMS



Salem is home to several Zagster Bike Share stations located strategically throughout the city. This has been an increasingly popular program with ridership expanding every month since it started in May of 2017. In May 2018, 696 rides were taken, bringing the total rides since the program’s inauguration to 3,758. Zagster has seen a 562 percent increase in monthly rides since it began, due to the fact that the program has expanded from three hubs and 18 bicycles to ten hubs and 50 bicycles. The city also added the option for riders to start or end their trip at any of the city’s public bicycle racks. The annual cost for Zagster Membership is \$25.00 and trips are billed at \$3.00 an hour after the first two hours.

Zagster stations are located throughout the city, including:

- Salem State University South and Central Campuses
- The Point Neighborhood
- Derby Square
- Salem Ferry Terminal
- Hawthorne Hotel
- Federal St. Downtown
- MBTA Commuter Rail Station, Lower Level
- North Salem at the corner of Orne St. And North St.
- Salem Willows

## 4.0 PUBLIC INVOLVEMENT/COMMUNITY INPUT

To fully understand the needs of the community and stakeholders, a comprehensive public involvement process was developed. The goal of this process was to work closely with the community, particularly older adults and others who are traditionally under-represented in the planning processes. A working group of stakeholder representatives was assembled to help guide the study and ensure that the needs of the stakeholders were understood. After the stakeholder group was formed, it was agreed that two additional public outreach meetings were to be held and a city-wide transportation survey conducted. This section summarizes information collected at these meetings and through the survey.

### PUBLIC MEETINGS

The public meetings were run by representatives from both the City of Salem and TransAction Associates. At each meeting, a brief introduction to the topics to be covered was presented and then attendees were asked to provide comments on questions related to transportation services in the city. Meeting notes are provided in the Appendix and summarized below.

#### **SEPTEMBER 20, 2017 - STAKEHOLDER MEETING**

At this meeting, the framework of the study was developed by the stakeholders identified in the acknowledgement section of this report. Approximately 22 attendees met on September 20, 2017 at the City Hall Annex. A brief presentation by city staff and TransAction Associates was given to introduce the project, and then the attendees were separated into three break-out groups and asked to discuss several questions related to the study. The discussions were facilitated by senior TransAction Associates staff. Key questions and responses are summarized below.

*What are the biggest challenges around transportation in Salem?*

- Seniors have no access to local transit for social trips
- Seniors can only bring two bags on the COA van for a shopping trip
- Senior population is rising due to good health
- Seasonal tourism during summer and in October
- Future Power Plant Redevelopment in North Salem

*Where are there significant gaps in existing service?*

- Lack of an east/west connection
- Lack of service between Salem State University/Jefferson Avenue and downtown
- Lack of service to Salem Willows and North Salem
- Lack of service to Market Basket, Walmart and other shopping centers
- Employee services

*What information should be collected as part of the study?*

- Information on car share services located in the city such as Zipcar, Uber and Lyft
- Information from the Waze application
  - Gaps in MBTA bus services
  - How Council on Aging vans are used
  - Accessibility of the city's taxi services
  - Availability of school buses for other than student use and bus accessibility
  - Bicycle accommodations in the city, both existing and future
  - After school and evening transportation needs of Salem High School students
  - Salem State University shuttle service routes and gaps in service
  - Locations of existing public parking areas

*What needs to be considered in operating a shuttle service in Salem?*

- Who are the users and where do they live
- How will accessibility be handled
- Where would passengers park
- Existing traffic flows through the city
- How will shuttles interconnect with other transportation services
- How will the shuttle service be marketed
- Should the buses have bicycle racks
- Will shuttle routes and schedules be different season to season
- Financial planning (initial and operational costs, fares and possible funding sources)

## **FEBRUARY 12, 2018 – PUBLIC MEETING**

In order to gain insight from the public-at-large, the City of Salem with TransAction Associates hosted a public meeting at the City Hall Annex. Approximately 37 residents attended and several meeting attendees followed up with emails to city staff. Similar to the meeting held with the stakeholder representatives, the meeting included brief presentations and break-out sessions where participants were able to give their specific feedback on major challenges around transportation. The key questions and responses discussed in the groups are summarized below.

### *What are the biggest challenges around transportation in Salem?*

- Increased traffic and insufficient parking during the summer and in October
- Conditions of sidewalks and roads
- Seasonal fluctuations in city's population
- Poor accessibility of existing services

### *Where are there significant gaps in existing transit service?*

- MBTA bus schedules are not convenient and some are underutilized (in particular bus route #459)
- MBTA buses primarily provide service in and out of the city and do not service intra-city connections
- MBTA bus frequency/reliability/efficiency are not good
- Access to, and the ability to use, transit/bus tracker applications
- Lack of coordination/connections between services
- Lack of bus shelters
- Lack of service between North Salem and downtown
- Lack of connection between the Commuter Rail Station and Salem Hospital
- Lack of weeknight and weekend service
- Lack of service to Logan Airport

### *What information should be collected as part of the study?*

- Data on other shuttle services such as those provided in Framingham/Metrowest and Lexington (Lexpress)
- Utilization of Salem State University shuttle bus service (often they appear empty)

- Potential for expanding the existing trolley service
- Feasibility of using the existing COA vans for residents other than seniors

*What needs to be considered in operating a shuttle service in Salem?*

- Accessibility/wheelchairs
- Child safety/strollers
- Snow management at shuttle bus stops
- Daily service, including weekends
- Special events
- Service to students to/from home and school
- Affordability
- Connection to existing summer trolley service
- User-friendly system information via transit apps and shuttle tracking
- Funding
- Volunteer services

*Where would you like to go if a shuttle service was provided?*

- Transportation hubs
- North Shore Medical Center and other medical facilities
- Highland Avenue shopping areas and the North Shore Mall
- Council on Aging
- Endicott College/ Salem State University
- Shop and Shop in Peabody
- Parks and beaches
- Downtown (City Hall/Library)
- The Point neighborhood
- Special events



## **FEBRUARY 14, 2018 – MEETING WITH COUNCIL ON AGING (COA)**

City of Salem staff attended a COA Valentine's Day party and met with more than 45 Salem seniors to fully understand the needs and concerns of the aging population of the city. Although this meeting was combined with a Valentine's Day party and was a less formal meeting than the first two, useful information was obtained from the seniors. A summary of the key questions posed at the meeting and responses is provided below.

### *What are the biggest challenges around transportation in Salem?*

- Lack of parking and traffic
- Poor roadway and sidewalk conditions
- Lack of evening transit options
- Cost of taxi services

### *How did you get to the party/meeting today?*

- Most seniors reported they drove to the party. These seniors suggested they would not be interested in a shuttle service.
- Others reported using the COA van or were transported by a caregiver. As expected, these seniors were more interested in a shuttle service.

### *How do you typically get around Salem and what is your experience with this option? What could be improved?*

- Seniors indicate that they currently use the COA van, the MBTA's RIDE, or walk. These seniors seemed more open to a shuttle service and indicated they would use the shuttle for evening commuting and social events.
- Seniors seemed generally happy with the existing COA van and its management, but would like to see more service in neighborhoods and downtown, as well as trips to the mall.
- Some mentioned that the COA van service has too many rules.
- Many seniors commented on the great number of pot holes on roadways, which COA vans do not handle well.
- Most seniors had not heard of Lyft or Uber.
- Drivers mentioned that pavement markings are difficult to see at night.

*If a shuttle service were available within the city, or to destinations outside of Salem, where are some of the locations you would like to go?*

- Downtown (particularly for free events)
- Salem Willows
- Shopping areas, including grocery stores and banks
- Lahey Clinic
- Recreational evening events, including movie theaters

### **JULY 19, 2018 – STAKEHOLDER GROUP MEETING**

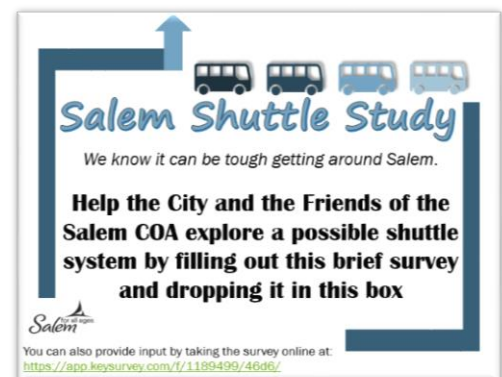
City of Salem Staff, TransAction Associates and 14 members of the stakeholder group met at the City Hall Annex to review a draft of this report. The report was emailed to all members of the stakeholder group prior to the meeting for their review. At the meeting a brief presentation including highlights from the report was given by TransAction Associates. Following the presentation, the group shared comments and feedback. Complete notes from the meeting are included in the appendix.

### **CITY OF SALEM TRANSPORTATION SURVEY**

In order to better understand some of the larger transportation issues in Salem, TransAction Associates and the City of Salem launched a survey. An online version of the survey was posted on the city's website and emailed to stakeholder representatives to share with their employees/residents/members.

Additionally, paper copies of the survey and collection boxes were placed at the Council on Aging, the Library, City Hall and the public meeting room at City Hall Annex. In total, 593 responses were received, of which 34 were provided by students. Approximately 66 percent of responses were from residents who work either full-time or part-time, 25 percent were from retirees and 9 percent were from residents who are not working. A copy of the survey is included in the Appendix.

The survey included a number of open-ended questions, which resulted in excellent qualitative data. Quantitative questions were related to mode choice, neighborhoods, transportation



challenges, and access to a vehicle. Approximately 78 percent of respondents reported that they have access to a private vehicle, 13 percent stated they did not have access, and 9 percent reported that they occasionally have access. Based on this data, it is noted that a significant portion of the data collected is not representative of the transit-dependent populations in Salem. However, with good public transit and a well-designed shuttle service, residents who have access to a vehicle may in the future choose not to drive. Thus, the information collected from the respondents who currently have access to a vehicle is very relevant to this study. A few select survey questions are repeated below with the question’s responses summarized in either tables or charts.

*How do you travel?*

Residents were asked how they typically get to where they need to go. Since many people, especially those who live close to a downtown area or transit hub, use more than one travel mode, the question allowed multiple answers. Not surprisingly, as most of the population who responded to the survey had either full or partial access to a vehicle, when asked how they typically get where they need to go, 80 percent indicated that they typically use their personal car. However, 60 percent reported walking to their destination, 40 percent used the commuter rail and 20 percent used on demand services such as Lyft, Uber, and taxis.

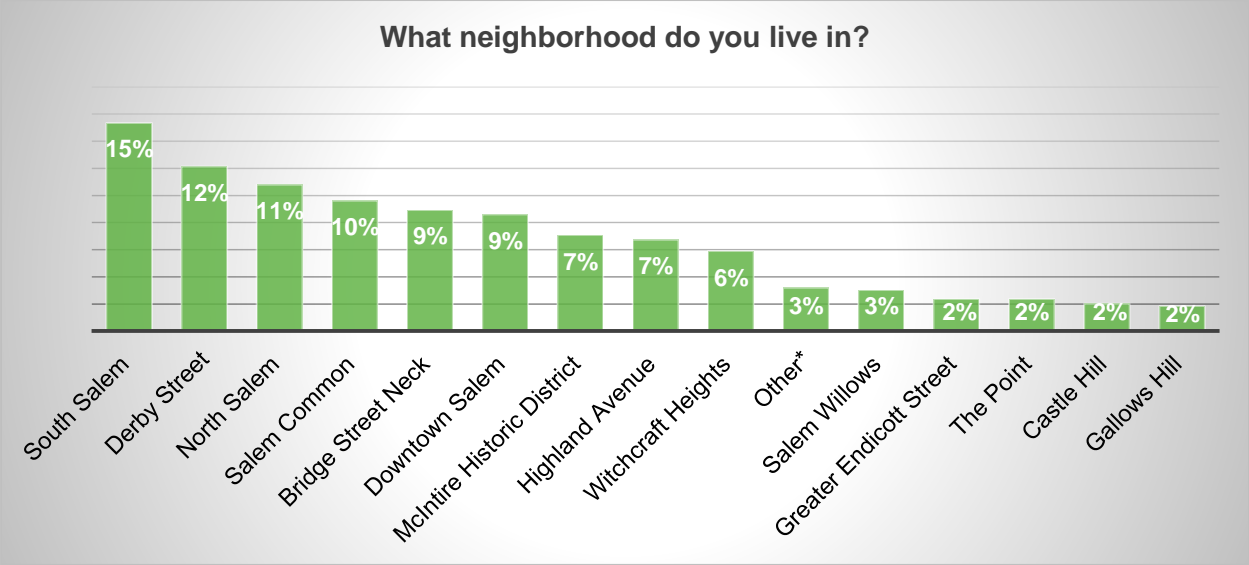
To better understand the behaviors of potentially transit-dependent population, the travel modes of respondents without a car were examined in more detail in the table below. Both walking and on demand services are more popular than existing public transit with this population.

Commute Mode Split for Respondents Without Access to a Vehicle	
Mode	Responses
Walk	9%
Commuter Rail	6%
MBTA Bus	6%
Taxi	5%
Uber/Lyft	4%
The RIDE*	2%
COA Van	2%

\*MBTA’s paratransit service

*Where do you live?*

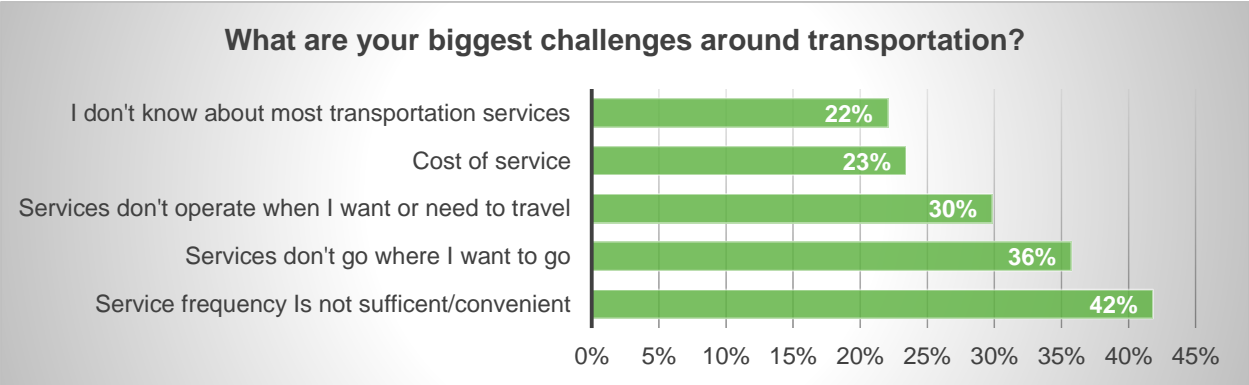
The survey included a question on where the respondent lives to better define where there is a need for expanded MBTA services and what the service area should be for future shuttle buses. The data from this question is summarized in the chart below and shows that the greatest number of respondents live in South Salem and along Derby Street.



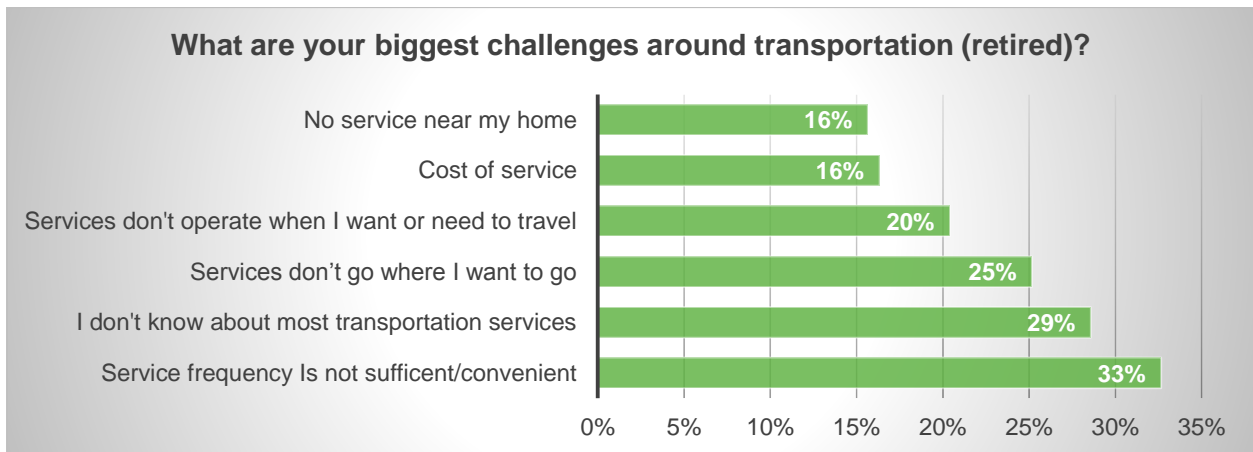
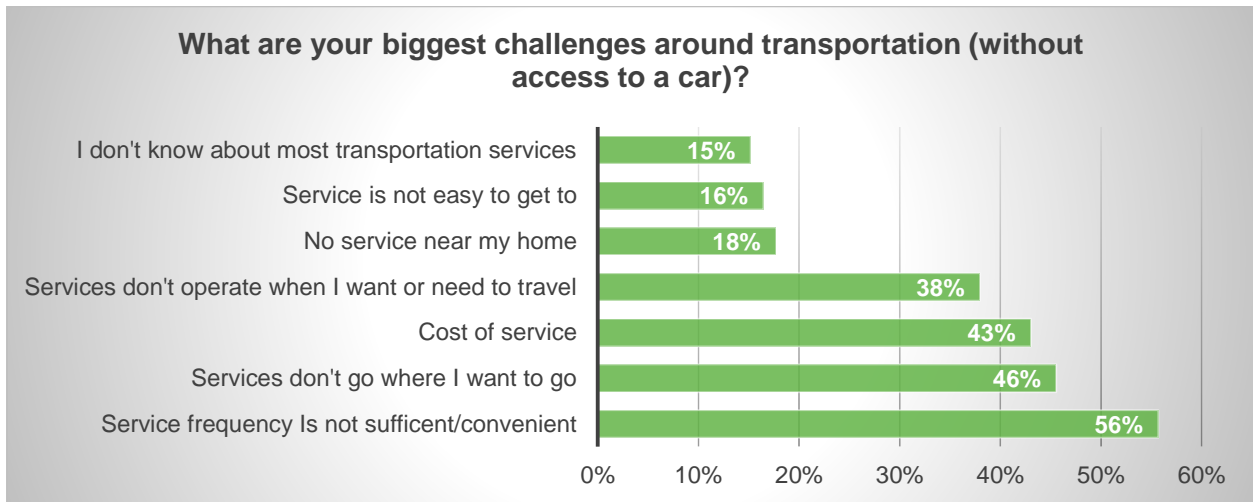
\*Responses included Vinnin Square, Salem State University, Lafayette Street, and other towns such as Beverly and Newbury.

*What are your challenges around transportation?*

The chart below summarizes the major challenges around existing transportation in the City of Salem. The two major challenges were related to frequency of service and that services did not serve desired destinations.



To establish if the challenges are different for residents who do not have a vehicle or for retired residents, two additional charts were created. In the first, data collected only from respondents without a vehicle was summarized. As expected, the results were similar to the population as a whole with frequency and a lack of service area cited as the most common challenges. As seen in the chart for retired residents, frequency is still the most common challenge, but a lack of information is the second most common challenge.



Reviewing only data from respondents who use the MBTA bus service, the following was determined:

- 33 percent reported service frequency is not sufficient or convenient.
- 25 percent reported services don't operate when I want or need to travel.
- 36 percent reported that the service does not go where I want to go.

Of the 279 respondents who said that they had access to a personal vehicle, 28 percent said that service frequency is not sufficient or convenient. More than 30 percent of respondents with access to a car did not know about most of the available services near them.

### *Where do you travel to and for what purpose?*

In addition to examining the modes residents use, the survey collected data on where residents are traveling. Respondents were asked to select where they go and for what purpose (work, food shopping/retail/errands, dining/night life, recreational/social, education and medical). The data, summarized in the table on the next page, shows the most popular destinations are downtown Salem, Highland Avenue and the Liberty Tree and Northshore Malls. The most popular trip purposes were related to recreation/social and retail shopping. There was also an “other” option, to which the top responses were: Boston (77) for work, school, and medical appointments; Danvers (29) for medical appointments, food shopping, and retail shopping; and Beverly (25) for recreation and personal errands.

To understand the travel habits of the city’s students, data obtained from the 34 student respondents was analyzed. Similar to all responses, the most popular destination for students was downtown Salem, while the most popular trip purposes were related to recreation/socializing and retail shopping.

### *What should the feasibility study include?*

To ensure that this study was responsive to city residents, the survey included a question on what issues should be addressed in this study. This was an open-ended question where the respondent typed in their comments. The most common response was about the frequency/schedule of a possible shuttle service. Other leading concerns were regarding the cost to operate or ride the shuttle and accessibility.

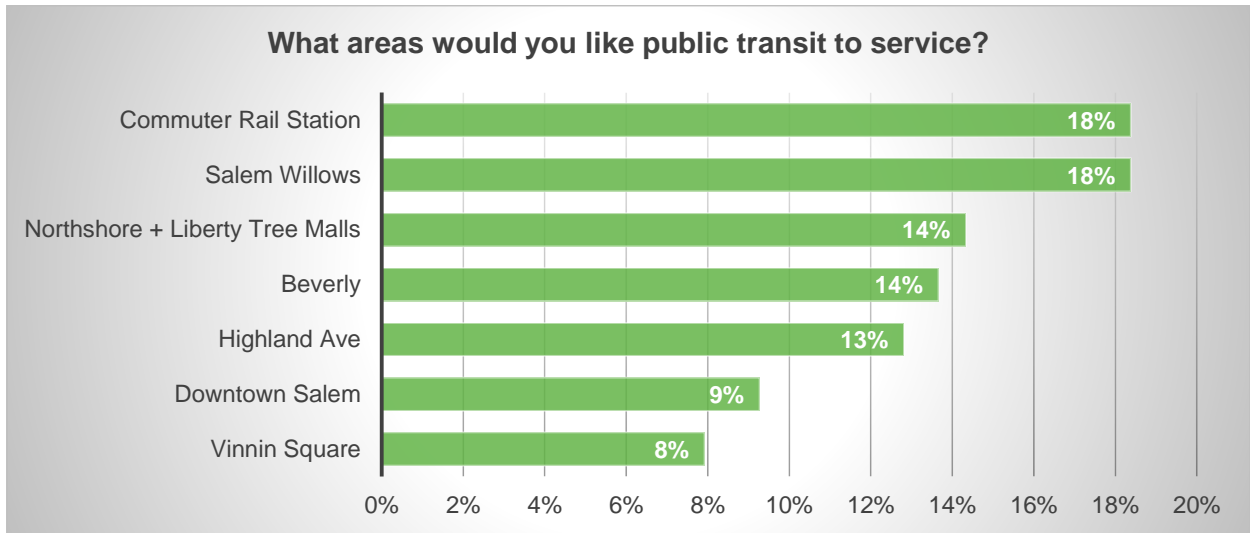
### Trip End by Geographic Area – All Responses

Trip Destination	Work	Food Shopping	Retail	Errands	Dining/ Nightlife	Recreation/ Social	School/ Education	Medical	Total
Bridge Street	22	25	22	53	54	54	14	5	249
Castle Hill/Jefferson	18	19	12	39	22	25	12	9	156
Derby Street	30	63	86	91	213	174	2	7	666
Downtown Salem	93	166	301	356	399	342	26	24	1,707
Gallows Hill	10	4	4	10	6	17	3	10	64
Highland Avenue	39	287	178	152	29	31	15	189	920
McIntire Historic	22	5	7	68	11	101	6	2	222
North Salem	24	19	14	32	21	53	7	7	177
The Point	18	16	15	22	44	45	16	6	182
Salem Common	18	17	22	23	58	267	4	0	409
Salem Willows	10	15	10	13	81	320	1	2	452
Downtown Peabody	24	48	30	58	65	44	5	16	290
Downtown Beverly	26	59	108	100	205	134	4	41	677
Vinnin Square	18	240	218	159	97	48	2	37	819
Northshore Mall/ Rte.114	18	130	330	120	115	80	3	60	856
Liberty Tree Mall	25	150	330	118	96	93	1	47	860
Marblehead	27	35	72	45	132	149	7	28	495
<b>Total</b>	<b>442</b>	<b>1,298</b>	<b>1,759</b>	<b>1,459</b>	<b>1,648</b>	<b>1,977</b>	<b>1,288</b>	<b>490</b>	<b>9,201</b>

*Where are some destinations you would like a potential shuttle to serve?*

In order to get a better picture of where a possible shuttle should go, the survey included a question regarding desirable locations within, or outside of, the city. Approximately 18 percent of respondents indicated they would like service to be provided to the commuter rail station and

to Salem Willows. Downtown Salem and Vinnin Square were requested by slightly less than 10 percent of respondents.



*Why do you use, or not use, existing transit services?*

The final questions in the survey were about why respondents chose to use, or not use, transportation services other than a personal car. For those who use alternative transportation, the biggest motivating factor was the limited availability of parking in the downtown area. Other motivating factors were cost and traffic. Those that do not use other forms of transportation besides their own car mostly pointed to convenience as their biggest motivating factor.



## 5.0 CITY OF SALEM TRANSIT NEEDS

From information collected through public input and an inventory of the existing services provided in the city, gaps in existing service areas, populations served, and schedules were clearly identified. A more dependable transit service was also identified as a need in the city.

### GAPS IN SERVICE AREAS

In the responses to the question, “what are your biggest challenges around transportation”, over a third of survey respondents suggested that the existing services do not go where they want to go. This was a frequent complaint heard at the three public meetings. A key issue identified through the process was the lack of connections between major city neighborhoods.

While the survey conducted as part of this study generally focused on travel within the city, comments provided in the open-ended response questions to the survey indicated a number of locations outside of the city that residents would like access. These included locations in Danvers, Peabody, Beverly, Lynn and Swampscott. The MBTA systems in Salem provide access to all of these communities. However, the buses generally travel along major arterials and are not easily available to neighborhoods and large residential populations.

### GAPS IN POPULATIONS SERVED

The inventory of existing transit services strongly suggests that transit service for seniors is limited. COA vans are available by appointment, but provide service to a limited area and most importantly do not accommodate trips for recreational/social purposes. For the health of seniors, it is well documented that social interaction is key for providing a good quality of life. The success of the COA’s evening/weekend pilot indicates that there is a need for better access to more services that allow seniors to engage in social activities.

Although service to seniors is limited, they do receive curb-to-curb service and SSU students almost receive door-to-door service with the three shuttle programs available to them. However, for the remaining population transit is less easily accessible. The COA vans are for the sole use of seniors and disabled residents, the RIDE is for disabled persons and the SSU shuttles are restricted to the SSU students, staff and visitors. The Salem trolley, Haunted Happenings Shuttle, and the Salem Harbor ferry/taxi are generally utilized by tourists and are not available all year.

## GAPS IN SCHEDULES/DEPENDABILITY

Based on input received at the February 14<sup>th</sup> meeting at the COA, the lack of evening service and the lack of transit options for social/recreational trips were identified as significant gaps in public transit. SSU students also indicated that the limited evening service is a problem. Although there is a demand-response service offered in the evening, students would need to know ahead of time when they would need transportation, a somewhat unrealistic goal for most students attending social events. Further, the student-run shuttles are in the process of moving toward a more fixed-route service which will limit access to evening service to specific destinations. Throughout the various stakeholder meetings, concerns about the lack of an evening service were expressed.

Although there are several MBTA bus routes within the city, seniors report difficulty in understanding the bus system/operations. They also suggest that bus services are not frequent enough and are not dependable. For a senior to feel comfortable using a public transit system, dependability is extremely important.

One of the major issues raised by survey respondents is the reliability and frequency of the MBTA bus routes. Five of the six bus lines that serve Salem had less than a 65 percent reliability score from the MBTA dashboard for May 2018. Bus routes 451, 456, and 459 do not operate on nights or weekends, and 465 does not run on nights or Sundays.

Survey responses and feedback from outreach indicate that lack of accessibility and reliability are the main reasons people choose not to ride the MBTA buses in Salem. Comments from the survey include: "I have to walk a mile to get to the nearest bus stop or rail. Very hard in the Winter!" and "MBTA buses are rarely on time and if very late, will skip runs."

## ROAD AND SIDEWALK CONDITIONS/PARKING AVAILABILITY

Another concern raised in both stakeholder meetings and on the survey is the condition of the roads and sidewalks in Salem. The combination of narrow road ways, and damaged or tough to navigate sidewalks, make it difficult to walk or bike. This impacts older citizens in particular.

One survey respondent said "My husband and I have disabilities and our neighborhood needs more sidewalks more crossing lights. It's hilly and unsafe." Although much of this is due to the age of Salem, some investment in bike and sidewalk infrastructure will likely lead to more residents choosing to leave their cars at home.

Seventy-three survey respondents said that the reason they chose NOT to drive their cars (when possible) is due to lack of parking.

## 6.0 OTHER TRANSIT SERVICES (BEST PRACTICES)

To begin to address the gaps in existing services identified in the previous section, several transportation programs were selected to be studied for the purposes of determining best practices for providing and operating transit services. A summary of each service is provided below. This section concludes with specific best practices from each service.

### BIG BLUE BUS

Located in Los Angeles County, California, the Big Blue Bus (BBB) is an example of an extremely successful, large scale, transit system. The BBB model was suggested by several of the members of the stakeholders working group for inclusion in this study due to its success and popularity. Governed by Santa Monica's City Council, the BBB's service area spans more than 51 square miles of greater Los Angeles and provides over 16.5 million rides for customers each year.



The BBB is able to get most of its funding through state grants. The rest of its funding comes from Los Angeles County sales tax and fare revenues. Despite it being a major service provider, similar to Boston's MBTA, the BBB is able to keep its fares relatively low at \$1.25 per ride. The BBB offers discounted rates to seniors and persons with disabilities, as well as a supplemental on-demand service.

One of their more innovative programs is the Blue to Business program. The program offers discounted fares to employees of certain businesses that contribute to the cost of operating the service. They offer the discounted rates for high school and college students as well.

BBB also brands itself very well with the service's name and graphics easily recognizable.

### CROSTOWN CONNECT TRANSPORTATION MANAGEMENT ASSOCIATION

CrossTown Connect is a unique model of a Transportation Management Association (TMA) developed to manage and combine transit services offered in adjacent communities. Started as a partnership between participating communities (Acton, Boxborough, Littleton and Maynard), the group had a vision of an integrated local transportation system of shared resources. Rather than providing individual transportation services for specific groups (seniors, commuters, etc.), CrossTown Connect pooled their available resources to address the needs of area passengers. The organization took a patchwork collection of overlapping services and created a coordinated transportation system, which resulted in a more efficient use of all of the existing systems. In

addition, the data collected as part of the process enabled the group to advocate for new services in the region. Today several transit services are managed through the TMA. These include both demand-response shuttles routes and fixed-route shuttle routes.

## **DEMAND-RESPONSE SHUTTLE ROUTES**

### DIAL-A-RIDE #1 AND #2

Acton's Dial-A-Rides are demand-response services where riders can call to book a trip within the designated service area. Reservations are made for demand-response trips and are open to all people and all ages. This includes providing rides to children over the age of 12 with a parent/guardian's permission. The service area has expanded from its initial 3.5-mile radius to include all of the CrossTown Connect TMA's partner area communities. In addition, while the Dial-A-Ride shuttles primarily serve those who live in Acton, they are open to riders in the participating communities when space is available and the trip request fits into the route for the day. By collecting data and studying the trips booked for this service over a two-year period, Acton was able to assess popular stops and times, and from this data developed a new fixed-route service called the Cross-Acton Transit (CAT). The CAT is described below under Fixed-Route Shuttle Routes. There is a fare of \$1.00 for the Dial-A-Ride services, which are collected by the driver.

### ROAD RUNNER (ACTON)

This is a demand-response service primarily used for medical appointments and seniors or people with disabilities, but open to all if space is available. It is operated through a partnership with the Lowell Regional Transit Authority (LRTA). Priority remains for medical trips and essential services, but by allowing people of all ages and accommodating trips other than medical ones, the utilization of the shuttles is high and people of all ages are connected, rather than separated. The fare is \$1.00 for a one-way trip.

### OTHER COUNCIL ON AGING SHUTTLE SERVICES

Unlike Acton's Dial-A-Ride service, COA shuttle services in Maynard, Boxborough and Littleton are limited to seniors for medical and shopping trips. The TMA provides dispatch services for all participating towns' COA shuttles. Since moving to the central dispatch model, ridership has increased on all COA services. This is because the additional hours of live dispatch enable riders to speak to a live person to book trips. All-day dispatching also allows for cancellations to be back filled with passengers who were not initially accommodated.

## **FIXED-ROUTE SHUTTLE ROUTES**

### **CROSS-ACTON TRANSIT (ACTON)**

The Cross-Acton Transit (CAT) is a fixed-route service covering a loop through major residential locations and popular destinations in the Town of Acton. The fare is \$1.00 and is collected by the driver. The route is popular in Acton and provides approximately 262 weekday trips.



### **RAIL SHUTTLE/NORTH ACTON COMMUTER (ACTON ONLY)**

This service connects satellite parking areas to the MBTA Commuter Rail Station in South Acton and has recently been extended to service neighborhoods in North Acton. The Rail Shuttle, initially funded with a Congestion Mitigation Air Quality Grant, connected satellite parking to the South Acton MBTA Commuter Rail Station to provide additional parking for commuter rail passengers.

### **MAYNARD COMMUTER SHUTTLE (MAYNARD/ACTION)**

Funded in part by the Town of Maynard, and in part by a Community Transit Grant, this service uses the COA van before and after hours to connect a satellite parking area and some neighborhoods to the South Acton Commuter Rail station.

### **LITTLETON COMMUTER SHUTTLE (LITTLETON/WESTFORD)**

Funded in part by the Towns of Littleton and Westford, and in part by a Community Transit Grant, this service is operated under contract by the Montachusett Regional Transit Authority and serves the Littleton Commuter Rail Station, as well as businesses in Littleton and Westford. The goal is for businesses to contribute as well

## **OPERATIONS/DISPATCH**

The CrossTown Connect TMA has developed a new model for a centralized dispatch operation for the demand-response routes it services. Prior to the start of the TMA, each community's COA vans were limited to two-to-four hours of service because of limited dispatching. By banding together as a TMA and sharing the cost, the TMA is able to offer full-time dispatching. This is similar to some of the new Regional Emergency Dispatch Call Centers that have been established to save resources in the same fashion. The dispatch call center also began using a new dispatch software (Easy Rides) to book trips and develop schedules. This has enabled more efficient scheduling. Drivers receive their daily schedules via tablet, which allows for flexibility in making changes and adjustments during the day. It also automatically counts passengers as data on

delivered trips is uploaded from the tablet into the system, saving time and providing better data for analysis.

CrossTown Connect has seen a great deal of success and has won several awards recognizing them for their innovative approach to transportation.

## **BUDGET/FUNDING**

The total CrossTown Connect TMA budget is approximately \$300,000/year for staffing and the dispatch call center. Part of the CrossTown Connect budget is funded through grants, particularly through the Community Transit Grant program and through partnership with local regional transit agencies. Each service is also funded by an allocation from the community in the annual budget. Business partners pay membership fees as well to support the work of the organization. Each individual community maintains their own budget for their COA vans and any other local shuttle services. Acton's budget for transit services is approximately \$500,000 annually.

## **THE BEDFORD DASH**

The Town of Bedford looked at the model created in Acton and used it to start their own demand-response service. The DASH is a Dial-A-Ride service open to all Bedford residents and dispatched out of the same dispatch call center that operates the CrossTown Connect's TMA services. This allowed the service to get started with minimal costs and takes advantage of the same dispatch software that is used so successfully by CrossTown Connect. Initially conceived as a two-year pilot, the goal was to let residents make requests to travel within a designated service area and look for the establishment of patterns. After two years of operation the project will look to see if it is possible to establish fixed-route services based on the data collected about popular destinations and travel times. The program operates with a budget of approximately \$100,000 and is funded from a town allocation and a Community Transit Grant.

## **CAPE ANN TRANSPORTATION AUTHORITY (CATA)**

CATA is one of fifteen regional transit authorities in Massachusetts and is funded with state and federal dollars, as well as from contributions from participating communities. It services the communities of Gloucester, Rockport, Beverly, Ipswich and Essex, and provides year-round fixed-route, ADA, and senior Dial-A-Ride transit services in the Cape Ann region. CATA is also the broker for Department of Developmental Services/MassHealth Transportation in the Cape Ann/North Shore area. CATA provides service for trips to Beverly and the malls on Saturday at a rate of \$5 roundtrip.

## BEST PRACTICES

### **BIG BLUE BUS - COST SHARING**

A cost-sharing model between the public and private sectors could be implemented in Salem, particularly with the large employers in the city, such as the North Shore Medical Center and Salem Five.

### **BLUE BUS - SCHEDULE FLEXIBILITY/SEASONALITY**

Seasonality has a large impact on the Big Blue Bus because Santa Monica, much like Salem, is a popular destination in the summer. This is dealt with by making seasonal changes to the schedule and adding trips where necessary based on ridership patterns, which could be a consideration in Salem. The City of Santa Monica also has special events throughout the summer such as their concert series on Thursday nights. The Big Blue Bus adds trips to accommodate these events. Salem should take this model into consideration for its October events.

### **BLUE BUS - BRANDING**

Simple colors and a catchy name help with awareness and marketing.

### **CROSSTOWN CONNECT - COA VAN SHARING**

Allowing people of all ages to use COA vans is an initiative that Salem should model.

### **CROSSTOWN CONNECT - OPERATIONS/DISPATCH**

The concept of expanding dispatch in order to allow more time for riders to speak with a live person, in combination with new technology, resulted in increased ridership. It also provided the ability to fill in gaps left by last-minute cancellations during the day, which could help to improve the efficiency of current COA services.

### **CROSSTOWN CONNECT TMA & BEDFORD DASH – DEMAND RESPONSE ROUTE TO FIXED-ROUTE**

Using data obtained from running a demand-response route, including the most popular service times, origins and destinations helped to establish fixed-route services.

### **CATA – WEEKEND SERVICE**

The weekend trip program offered by CATA is a model that Salem should consider due to the high demand for out of town trips to Beverly, as well as to the Northshore and Liberty Tree Malls (currently not provided by the MBTA).

## 7.0 ALTERNATIVES

The *Imagine Salem Progress Report* identified a guiding principle around transportation. Included in that guiding principle is the idea that:

“Salem believes in an accessible local and regional transportation system that provides alternative modes of transportation and choices. Salem aims to have a true multi-modal system that encourages active and sustainable transportation choices for everyday trips and empowers all travelers to safely use the streets.”

It is clear based on both the survey results and information gathered in the public meetings that there is interest in additional transportation services within the City of Salem. There are many potential services that the city could look to offer based on the feedback collected. This section presents a total of nine alternatives for improving transit in Salem. These include two alternatives (1 - 2) for improving existing services; five alternatives (3 - 7) for new services including intra-city circular loops, a demand-response shuttle service and an out-of-town transit service; and two alternatives (8 - 9) for joining another regional transit authority or forming a City of Salem/NSMC partnership.

Conceptual level cost estimates are presented as appropriate for each alternative. They were developed based on TransAction Associates’ experience with operating both fixed-route and demand-response shuttle routes. Cost estimates for services provided by the City of Salem should be confirmed by the city.

### IMPROVEMENTS TO EXISTING SERVICES

#### **ALTERNATIVE 1 - PROVIDE MORE DEPENDABLE MBTA BUS SERVICE**

The MBTA offers limited service within Salem primarily traveling north to south along the city’s two major corridors (Route 107 and Loring Avenue/Lafayette Avenue). Data from the survey and information provided through the stakeholder group meetings indicate that some of the biggest challenges related to the MBTA bus services are the infrequency of service and poor reliability. The MBTA data on reliability confirms information collected as part of this study. With the inventory and feedback from this study, the city could meet with the MBTA to advocate for improvements to the services that would be beneficial to residents.

Primarily the city could advocate for improvements to reliability as a start and then for increased frequency of service. However, given the MBTA’s current fiscal constraints, it seems unlikely that any new services would be added.



Making existing schedules easier to read, promoting MBTA bus tracking apps through the COA and improved amenities at the stops, including bus shelters, may facilitate the use of the MBTA bus service in Salem.

## **ALTERNATIVE 2 – MAKE COA VANS AVAILABLE TO GENERAL POPULATION**

In many communities the COA van is an underutilized resource. This comes from a long history of creating service “silos” around transportation that lead to defining individual services as being for one particular group. For example, school buses are for children and COA services are for seniors. As presented above in the chapter on Other Transit Services (Best Practices), the Town of Bedford is currently operating a successful service called the DASH that transports seniors, commuters, students and others all on the same Dial-A-Ride service. This is based on a model created in Acton. The goal of these programs was to break down barriers and put a wide variety of passengers on transportation services within the community to improve their efficiency and increase ridership. The result has been the successful implementation of a program that integrates different groups of riders onto the same service.

The Salem Council on Aging could undertake a process of reviewing their services to see how they might adopt some of these concepts. In addition to potentially opening up COA van services to students, commuters, and others as space is available, the city might consider other uses for its existing vans during off hours. For example, the Town of Maynard is currently using one of their COA vans in the morning between 6:00 a.m. and 8:00 a.m., and in the evening between 6:00 p.m. and 8:00 p.m. as a commuter service. The van travels through neighborhoods and a satellite parking lot and drops passengers off at the South Acton Commuter Rail Station before beginning its typical COA trips. Salem could look to operate one of the COA vans on each of the loops described below between 6:00 a.m. and 8:00 a.m., and 6:00 p.m. and 8:00 p.m. stopping only at the high- density residential locations and the Salem Depot Commuter Rail Station. During this two-hour period, each bus may be able to make two trips.

One challenge that can be posed by expanding COA van services as described below is that many communities, including Salem, employ only part-time drivers who have limited availability to drive. The city could explore hiring full-time professional drivers who can take on longer routes and improve service offerings and reliability. While this can increase costs in the short-term, it has the long-term benefit of improving service. As described above, driver pay rates for full-time drivers are in the \$20/hour range and as full-time drivers they would receive benefits. Depending on benefits and experience levels, driver salaries could be in the range of \$40,000 - \$55,000 annually.

## SHUTTLE SERVICES

Alternatives for local shuttle routes were developed based on information obtained from the public meetings, previous studies, the city-wide survey and suggestions from the Council on Aging. Participants at the three public meetings were very engaged in the process and had a high level of understanding of transportation issues as they related to Salem. For these reasons, only a limited number of shuttle alternatives were analyzed as part of this process. The alternatives identified through this process included the shuttle routes previously identified by a number of stakeholders who shared feedback including Fred Norton of the Council on Aging (COA), as well as the potential for expanded service offerings through the COA.

In terms of continuing to build a base for a solid system that can be expanded, local shuttle loops that would better connect neighborhoods throughout the city to key destinations is a logical alternative. Working closely with the Council on Aging Transportation Director and many others, two fixed-route loops were identified based on a knowledge of the city and of popular origins and destinations of the city's senior population. These routes were reviewed and modified slightly in response to the data collected as part of this study. It should be understood that these routes may continue to be adjusted and modified, based either on comments received on this study or based on real-life experience, if and when, one of the shuttle alternatives is implemented.

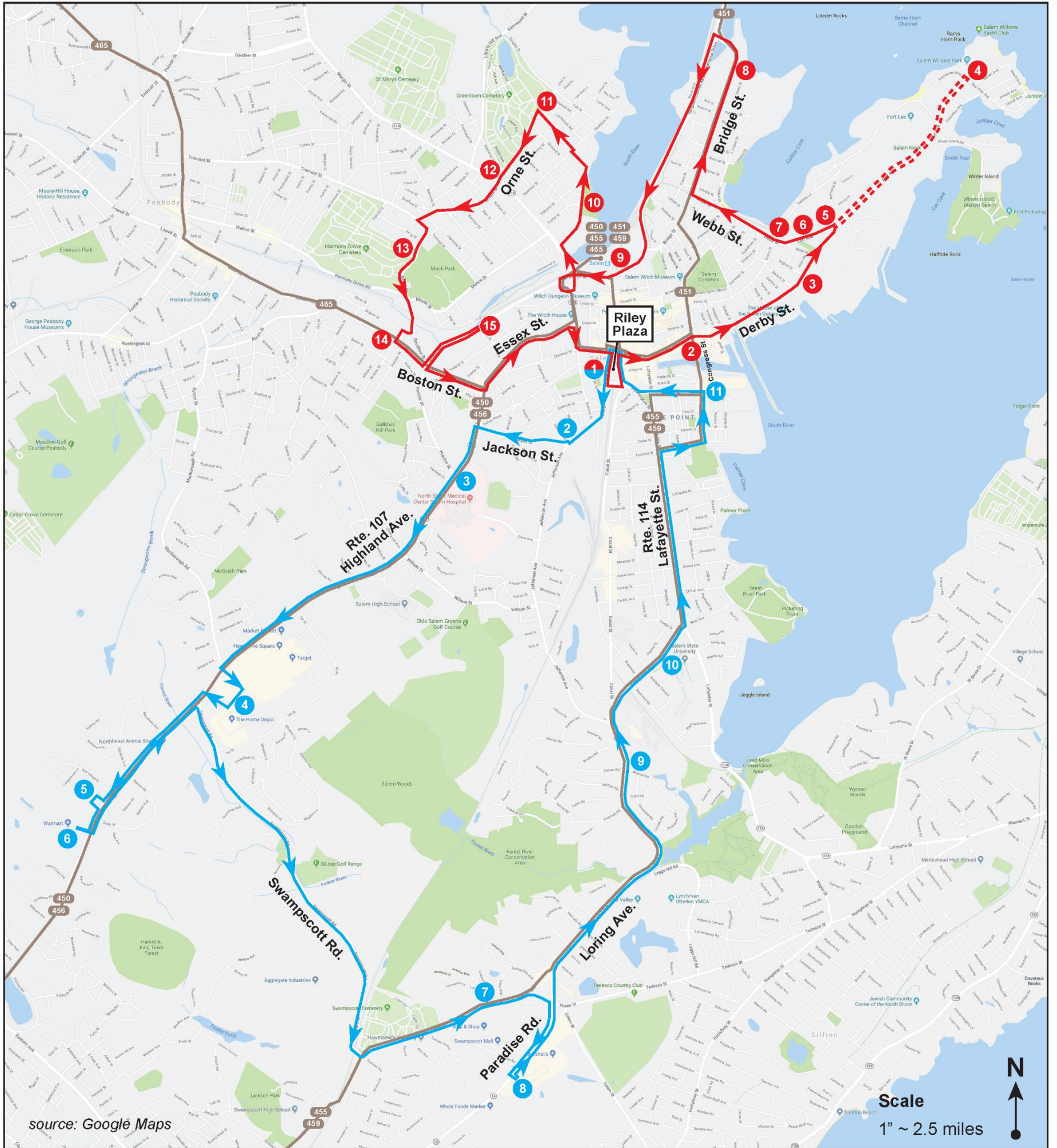
### **ALTERNATIVE 3 - PROVIDE A NORTHERLY FIX-ROUTE LOOP**

Two versions of the northerly loop were developed: one has the bus turning left from Derby Street onto Fort Avenue and the other has the bus turning right from Derby Street onto Fort Avenue and continuing to Salem Willows. Details of both versions of the northerly routes are illustrated in a figure and in a table that follow. The bus stops listed in the table correspond with the stops shown on the figure. Because the new Salem Community Life Center is anticipated to be completed and occupied in the fall of 2018, prior to implementation of the recommendations in this report, the northerly route provides a stop at the new center at 401 Bridge Street and does not include a stop at the existing COA facility. This loop provides a number of connection points to existing MBTA bus routes and would serve the MBTA Commuter Rail Station.

### **ALTERNATIVE 4 - PROVIDE A SOUTHERLY FIX-ROUTE LOOP**

Details of the southerly route are illustrated in a figure and in a table that follow. The bus stops listed in the table correspond with the stops shown on the figure. This loop is designed to service many of the destination points identified through the public input process.





**Legend**

- Northerly Loop
- - - Northerly Loop Option
- Southerly Loop
- # Proposed Stops
- # MBTA Bus Routes

## Alternatives 3, 4, & 5 Northerly & Southerly Fixed Route Loops

**Northerly Fixed-Route Loop**

Stops		Destinations Served
1	Riley Plaza	<ul style="list-style-type: none"> <li>• Riley Plaza West Lot Parking</li> <li>• Riley Plaza East Lot Parking</li> <li>• Downtown Area</li> </ul>
2	Derby Street and Congress Street	<ul style="list-style-type: none"> <li>• South Harbor Garage Parking</li> <li>• Waterfront Area</li> <li>• House of Seven Gables</li> <li>• Derby Street Neighborhood</li> <li>• 289 Derby Street Park</li> </ul>
3	Ferry Stop	<ul style="list-style-type: none"> <li>• Harbor Shuttle/Taxi and Salem Ferry</li> </ul>
4	Salem Willows (this is stop may or may not be included)	<ul style="list-style-type: none"> <li>• Winter Park</li> <li>• Salem Willows</li> <li>• Winter Park</li> </ul>
5	Derby Street and Fort Avenue	<ul style="list-style-type: none"> <li>• Irzyk Park</li> </ul>
6	Fort Avenue and Lee Fort Terrace	<ul style="list-style-type: none"> <li>• Salem Housing Authority</li> </ul>
7	Webb Street and Fort Avenue	<ul style="list-style-type: none"> <li>• Salem Common</li> </ul>
8	Bridge Street and Pierce Avenue	<ul style="list-style-type: none"> <li>• Collins Cove Park</li> <li>• Bridge Street Neck</li> </ul>
9	Salem MBTA Station	<ul style="list-style-type: none"> <li>• MBTA Parking</li> <li>• Bell at Salem Station</li> </ul>
10	Furlong Park	<ul style="list-style-type: none"> <li>• North River</li> </ul>
11	Lee Street and Orne Street	<ul style="list-style-type: none"> <li>• Neighborhoods</li> </ul>
12	Orne Street and North Street	<ul style="list-style-type: none"> <li>• Neighborhoods</li> </ul>
13	Mack Park	<ul style="list-style-type: none"> <li>• Mark Park</li> </ul>
14	Grove Street and Boston Street	<ul style="list-style-type: none"> <li>• Gallows Hill</li> <li>• Library</li> <li>• McIntire District</li> </ul>
15	Salem Council on Aging	<ul style="list-style-type: none"> <li>• COA</li> </ul>
1	Riley Plaza	

**Southerly Fixed-Route Loop**

Stops		Destinations Served
1	Riley Plaza (Margin Street in front of Post Office)	<ul style="list-style-type: none"> <li>• Riley Plaza West Lot Parking</li> <li>• Riley Plaza East Lot Parking</li> <li>• Downtown Area</li> </ul>
2	Jackson Street and Jefferson Avenue	<ul style="list-style-type: none"> <li>• Boys and Girls Club</li> <li>• Collins Middle School</li> </ul>
3	North Shore Medical Center	<ul style="list-style-type: none"> <li>• Medical services</li> <li>• Salem High School</li> </ul>
4	Market Basket/Target	<ul style="list-style-type: none"> <li>• Hawthorn Commons</li> <li>• Pequot Highlands</li> </ul>
5	North Shore Physicians Group	<ul style="list-style-type: none"> <li>• Medical services</li> </ul>
6	Walmart	<ul style="list-style-type: none"> <li>• Walmart</li> </ul>
7	Loring Towers	<ul style="list-style-type: none"> <li>• Residential</li> </ul>
8	Vinnin Square	<ul style="list-style-type: none"> <li>• Shopping</li> </ul>
9	Greenhouse School	<ul style="list-style-type: none"> <li>• Greenhouse School</li> <li>• Rainbow Terrace</li> </ul>
10	Salem State University	<ul style="list-style-type: none"> <li>• Forest River Park</li> <li>• Salem State University</li> <li>• Saltonstall School</li> <li>• Palmer Cove Park</li> </ul>
11	The Point	<ul style="list-style-type: none"> <li>• Salem Theater Company</li> <li>• Palmer Park</li> </ul>
1	Riley Plaza	



## **ALTERNATIVE 5 – PROVIDE NORTHERLY AND SOUTHERLY FIXED-ROUTE LOOPS**

If the city is able to fund both the northerly and southerly fixed-route loops, this alternative would provide excellent coverage of the city and could easily be coordinated at Riley Plaza. This location has the potential to be a good multimodal hub for the city as it is located in the vicinity of several parking lots and is near a Zagster Bicycle Station.

Both routes would be timed so that connections between the two can easily be made at Riley Plaza. A bus shelter or waiting area near this established hub would make it more usable in inclement weather.



## **DETAILS FOR ALTERNATIVES 3, 4 AND 5**

### **EQUIPMENT**

A 25-passenger shuttle is recommended for both routes as many of the roads in Salem are narrow. This smaller size bus would be easier to navigate than a larger bus. All shuttles would need to be fully accessible and provide wheelchair lifts. Shuttles should be equipped with a GPS tracking application so riders can see when the shuttle will arrive and where they are on the route in order to plan their trips. WiFi should also be provided on all shuttles for the convenience of passengers.

### **SCHEDULE/HEADWAYS**

There are many possible schedule variations that can be considered. Often for community-based services the schedule and headways are determined by the budget allocated to the project, which of course determines the number of shuttles/drivers assigned to the project. If the city is committed to piloting one or both of these routes, then a schedule can be launched for the pilot and adjusted and expanded upon over time. All schedules should assume a one-hour break for the driver, as well as some opportunities for the driver to stop in between loops. Service could operate partially as a “flag down” system as it passes by or through many neighborhoods. The shuttle would have some designated stops to allow for route timing, but it would be able to be flagged down to pull over for pick-ups and drop-offs at any safe spot.

Below are some possible scenarios for consideration:

- If the route will serve commuters, begin at 7:00 a.m. and end at 6:00 p.m.
- If the route will not service commuters, begin at either 8:00 a.m. or 9:00 a.m., and end at either 7:00 p.m. or 8:00 p.m.
- Provide 10 hours of service with approximately one hour for a driver break.
- With one vehicle per loop, headways would be approximately one hour, except if Salem Willows is added as a stop on the northerly loop. This stop could easily increase the headway to 1.5 hours.
- With two vehicles per loop, headways could be reduced to every 30 minutes. The second bus could run for a shorter time, say nine hours (during peak periods) with eight hours of peak period service and a one-hour driver break.
- With two vehicles assigned to the northerly loop, one vehicle would begin at Riley Plaza and the second would begin at the midway point at the MBTA Station. With service to Salem Willows headways would increase to approximately 45 minutes.
- With two vehicles assigned to the southerly loop, one vehicle would begin at Riley Plaza and the second would begin at the mid-day point at Vinnin Square.
- With two vehicles assigned to the southerly loop, one vehicle would circulate clockwise and the second vehicle would circulate counter-clockwise. In this scenario a passenger starting at Riley Plaza, traveling south along Highland Avenue, say to Salem Hospital, could return to Riley Plaza traveling north along Highland Avenue avoiding circulating in the bus along the entire loop.
- Alternatively, the second bus on each loop could start from Riley Plaza 30 minutes after the first bus.

#### FARES

Fares should be kept low so cost is not a barrier. The CrossTown Connect services charge \$1.00 per trip with multi-ride ticket discounts offered. The Bedford DASH charges \$2.00 per trip in-town with a \$20 multi-ride ticket offering \$25 worth of rides. Fares for the Salem shuttles should be similar.

The MBTA's farebox recovery ratio (the amount of money collected in fares vs the cost of the service) is 40 percent, which is roughly the national average for a large fixed-route transit system. A smaller system, like the one being considered here, might expect to yield 20 percent farebox recovery in a best-case scenario.

## OPERATIONS/COSTS

Given that this is a pilot, the city will need the flexibility to make program adjustments to the size and number of vehicles. Thus, the city should consider a vendor to provide this service initially. The vendor should be able to provide a range of vehicle sizes to give the city the ability to adjust as needed. Both the city and vendor would need to comply with all licensing, Department of Public Utilities and Federal Transit Administration rules, including drug and alcohol testing for drivers and federally mandated limitations on driving hours. In addition, both entities would need to ensure that a plan was in place for a back-up vehicle and driver.

The estimated costs for both a contracted-out service and city-operated service are detailed below.

### *Vendor Operated:*

- A 25-passenger ADA compliant bus operating for ten hours a day on a 10-mile loop, Monday through Friday for 254 days/year, would likely cost in the range of \$67.00/hour or \$170,000 per vehicle per year.
- Overtime rates would likely apply to weekend service so the rate would be closer to \$76.00/hour. Saturday and Sunday service at these rates are calculated at an additional \$76,000/year.
- In terms of potential fare collection, if it is assumed buses are 20 percent occupied (45 trips/day) and fares are set at \$1.00 per trip, annual fare collection could range between \$12,000 (without weekend service) to \$17,000 (with weekend service). This may be lower to start as the service is getting established.

### *City Operated:*

If the city decided to purchase their own fleet, the cost would be approximately \$92,000 for each 25-passenger ADA compliant vehicle. As a municipality Salem may be able to get better pricing on a vehicle. Annual operating costs per bus are estimated at \$87,000 including the driver's salary, bus maintenance and insurance, fuel costs and GPS/Wi-Fi.

## **ALTERNATIVE 6 - OUT-OF-TOWN SHUTTLE SERVICES**

The survey indicates an interest in a number of out-of-town routes. Chief among these was service to the Northshore and Liberty Tree Malls, the Market Basket in Danvers (closer to large Salem populations than the Salem Market Basket store for certain areas), and to medical services in Lynn and Beverly.



If the in-town loops are implemented, it may be possible to schedule trips to specific out of town locations on certain days. For example, if two vehicles were on the northerly loop, on Mondays one of the vehicles could have a route variation that goes to Market Basket in Danvers and on other days to the Northshore Mall. This would help to assess demand to determine the potential for ridership on these routes.

Assuming this service is offered with either Alternative 3, 4 or 5, the additional operating costs would be negligible.

### **ALTERNATIVE 7 - DEMAND-RESPONSE SHUTTLE SERVICE**

This option would have the city add another service, open to all residents, similar to the Council on Aging service where a resident would call dispatch to reserve a ride on a van service. A service area would be established that should include the entire city and some select out-of-town locations such as the Liberty Tree Mall and medical facilities in neighboring communities. The service should be fairly limited to start, so trips out of town are infrequent because they would effectively take the bus out of service for long periods.

Through a demand-response service, enough data on usage could be compiled within a few years to develop optimal fixed routes as was the case with the Cross-Acton Transit service, which was developed based on the Dial-A-Ride routes. However, demand-response services generally have a higher per-passenger cost and carry fewer passengers on each trip than fixed routes. Vendor costs are provided below along with comments on costs should the city decide to operate the service.

#### *Vendor Operated:*

- A contracted service for a 14-passenger accessible vehicle should be expected to cost in the range of \$50/hour. Assuming 8 hours/day of service on weekdays, annual costs would be approximately \$102,000.
- The cost for a vendor to provide a dispatch service is estimated at \$22,000 per year assuming only weekday service is provided.

#### *City Operated:*

- The on-demand service could be operated with one of the existing COA vans when they are not in service. The COA van would just need to account for the driver costs (based on current rates, unless new drivers are added as part of the recommendations for expanding the COA), vehicle wear and tear, and fuel, and so should be much lower.

- It seems unlikely that there would be capacity within Salem’s COA to handle the additional dispatching so costs associated with administrative hours need to be considered. Depending on available resources, this could entail the COA hiring an additional part-time staff person at 20 hours a week to manage the service.
- The ability of the city COA’s existing dispatch software may need to be assessed to determine if it could handle to the additional demand associated with the expanded service.

## PARTNERSHIPS

### **ALTERNATIVE 8 – JOIN THE CAPE ANN TRANSPORTATION AUTHORITY (CATA)**

It is unlikely that Salem would be able to join CATA in an effort to get local services from them using the MBTA Assessment (estimated at \$944,714 for FY 19) as the city currently receives fixed-route bus service from the MBTA, which precludes the city from joining the CATA (m.g.l. Chapter 161b, section 3).

However, the weekend trips program offered by CATA is a model that Salem should consider due to the high demand for out of town trips to Beverly, as well as to the Northshore and Liberty Tree Malls (currently not provided by the MBTA).

### **ALTERNATIVE 9 – PARTNER WITH THE NORTH SHORE MEDICAL CENTER**

The North Shore Medical Center runs two 12-seat shuttle buses between their off-site employee parking areas and the North Shore Medical Center. As these buses are not utilized on weekends, the city could explore opportunities to utilize/share the North Shore Medical Center vans/shuttles for weekend service. However, as described previously, these buses are not handicap accessible.

## SUMMARY

A summary of the benefits and costs associated with the nine alternatives presented above is provided in the table on the next page. Details for estimated income from fares, initial costs and operating costs are provided in the Appendix. It is noted that all estimates assume one bus operating per route.

Alternative Analysis Summary													
	Alternatives	Benefits				Potential Income (Fares)		Estimated Costs if Vendor Operated			Estimated Costs is City Operated		
		Connect Neighbor-hoods	Improve Existing Bus Services	Provide Night Time Service	Provide Out of Town Service	Weekdays	Weekends	Initial Cost	Annual Cost for Weekday Service	Annual Cost for Weekend Service	Initial Cost	Annual Cost for Weekday Service	Annual Cost for Weekend Service
1	Improve MBTA Bus Service (Dependability and Frequency)		✓		✓			N/A	N/A	N/A	N/A	N/A	N/A
2	Make Available COA Vans to General Population	✓			✓			N/A	N/A	N/A	N/A	N/A	N/A
3	Provide a Northerly Fix-Route Loop	✓				\$12,000	\$5,000	\$0	\$170,000	\$76,000	\$92,000	\$87,000	\$50,000
4	Provide a Southerly Fix-Route Loop	✓				\$12,000	\$5,000	\$0	\$169,000	\$76,000	\$92,000	\$87,000	\$50,000
5	Provide Northerly and Southerly Fixed-Route Loops	✓				\$24,000	\$10,000	\$0	\$338,000	\$152,000	\$184,000	\$174,000	\$100,000
6	Establish an Out-of-Town Shuttle Service				✓			No additional cost if Alt. 4, 5 or 6 are implemented			No additional cost if Alt. 4, 5 or 6 are implemented		
7	Establish a Demand-Response Shuttle Service	✓		✓	✓	\$2,100	N/A	\$0	\$124,000	N/A	\$0	TBD	N/A
8	Join the Cape Ann Transportation Authority (CATA)				✓			TBD	N/A	N/A	N/A	N/A	N/A
9	Partner with the North Shore Medical Center			✓				N/A	N/A	N/A	\$0	TBD	\$0

**Notes:**

TBD = To Be Determined with input from the city

N/A = Not Applicable

## 8.0 RECOMMENDATIONS

Recommendations for improved transit services have been made through careful consideration of the transportation system in Salem now and in the future. Rather than just looking to recommend improvements to existing services and the development of new services to identify unmet needs that could lead to an uncoordinated system, the city should look to define an approach to transportation that meets its identified goals and results in a network of services.

The research conducted as part of this project clearly indicates that a new shuttle service, which includes either the northerly loop, southerly loop, or ideally both loops would serve many of the unmet needs identified during this process. Although the costliest of all the alternatives listed in Section 7.0, **Alternative 5 – Provide Northerly and Southerly Fixed-Route Loops** addresses the most important gap in service, connecting neighborhoods within the city including all of the densely populated neighborhoods listed in the *Imagine Salem Progress Report* (the Point Neighborhood, McIntire District, Gallows Hill, Salem Common, and Derby Street, Bridge Street Neck, North Salem and South Salem) and provides connections from these neighborhoods to major shopping areas and medical facilities located within the city.

The recommended fixed-route options are proposed for a 10-hour period and do not completely respond to the gap in evening services. Once a pilot for the shuttle loop routes has been established, service could be expanded to include more nighttime hours to address this need. It should be noted that during the July 19, 2018 stakeholder meeting convened to review a draft of this report, concerns were raised about the length of the loops and the time it would take to complete them, in particular during October when there is additional congestion on local roads. As mentioned earlier in the report, these routes were developed to service the areas most commonly identified through this process as requesting service. They can, and should, be reviewed more closely and determinations can be made about route modifications.

While there is data from the survey and input from meeting attendees that the two fixed-route services described above are desirable and would be used, the city could take a different approach by implementing **Alternative 6 – Demand-Response Shuttle Service**. Modeled after the Acton Dial-A-Ride services and the Bedford DASH demand-response service, the advantage to this alternative is that data on usage could be compiled within a few years to develop optimal fixed-routes. Additionally, a demand-response system would be able to service some destinations outside of the city. However, demand-response services generally have a higher per-passenger cost and carry fewer passengers on each trip than fixed routes. In light of concerns raised at the July 19<sup>th</sup> stakeholder meeting about the length of the fixed route loops, it might be preferable for the city to operate an on-demand service for one or two years in order to develop the most effective and efficient fixed routes.

Although none of these recommendations specifically addresses the need for out-of-town transit, the MBTA, Uber and Lyft currently provide these out-of-town services. It is also recommended that the city work with the MBTA to improve its existing services as described in **Alternative 1 - Improve MBTA Bus Service (Dependability and Frequency)**. The existing reliability statistics indicates that service the MBTA provides to the city of Salem, for an annual payment of more than \$900,000, is substandard. With bus frequencies ranging from 30 minutes to two hours, reliability needs to be excellent for the service to viable to residents. Bus tracking software should be marketed to MBTA users within the city.

Through this process several other recommendations for improving transit services in the city were developed. These are presented below.

#### HAUNTED HAPPENINGS SHUTTLE SERVICE

This was a very successful and effective pilot program offered on weekends in October 2017. Cars were parked in off-site lots keeping traffic out of the major downtown area roadways. The service was offered for free and provided approximately 9,000 passenger-trips. It is recommended that this shuttle be continued on a permanent basis, fares of \$1,00 be charged and that the money be used to support the shuttle. The city should expand this service for other special events that draw large crowds to Salem.

#### SALEM TROLLEY

The Salem Trolley could be a viable circulator service through the downtown area, however, it is not convenient for residents to use. In addition to the fact that the service is seasonal, the two concerns raised were that tickets need to be picked up at the Trolley Depot, which is inconvenient for most people and that preferential service is given to paying customers so residents may be bumped off of the service if seats are not available. Salem Trolley could be approached to determine if it would be possible to offer residents annual passes.

#### IMPROVE EXISTING MBTA BUS STOPS

Many of the city's MBTA bus stops are in poor condition. It recommended that the each of the stops be evaluated for ADA accessibility. Depending on the jurisdiction of the bus stop, work with either MassDOT or City of Salem to fund the design and construction of ADA-compliant stops. Also, installing bus shelters at the more popular bus stops should be considered to encourage use in inclement weather. A sponsorship program for local businesses could be explored to fund the shelters.

## TRANSPORTATION COORDINATOR

One common factor noted in the successful services in the Other Transit Services (Best Practices) section, and in a number of other community-based services that were reviewed (Burlington B-line, Lexpress), is that each of the communities has identified staff who are responsible for the oversight of their transportation program. This may seem self-evident but the majority of communities do not have staff dedicated to the oversight of transportation services and initiatives.

Acton identified its Health Director as the person in town responsible for oversight of all transportation services. This enabled the Town to begin to connect its existing services into a comprehensive system. It also allowed the Town to develop new services in a coordinated manner based on the data it collected and analyzed from all of its services. Similarly, Bedford has placed oversight of the DASH with the Healthy Bedford Program. Similar concepts could be very successful in Salem where there are a number of uncoordinated existing services such as the Salem State Shuttle and Trolley Service. As the city looks to fill gaps in service, it should undertake an effort to move forward in a controlled and coordinated way with a point person in the city who can be identified as the Transportation Coordinator. This could be a paid role or could be incorporated into an existing staff role.

In addition, because there are many possible variations to the identified routes in this report, if a point person were designated as the Transportation Coordinator they could continue to collect ongoing feedback on unmet needs. They could also continue to review and analyze data as it is collected on new and existing services, which would help to create a long-term picture of travel and behavior patterns around transportation in the city. This valuable information could then be used to continue to grow and refine the services offered. Over a three-year period, this process has proven very successful in Acton as services have been added and refined based on a process of ongoing data collection. For transportation services to be successful in the long-term, experience points to the idea that they should be iterative and continually reviewed and refined so that they can grow and change as the city does.

## MARKETING AND OUTREACH

One factor for success identified in the initial stakeholder meeting, as well as on the survey, was the dissemination of information. Just under 25 percent (132) of the survey respondents indicated that they didn't know about many of the transportation services available to them. Better marketing of the existing services in Salem could have a positive effect on ridership on many of the existing services. Suggestions for disseminating information to residents about what is available to them and how to use it include the following:

- **National Rural Transit Assistance Program (National RTAP).** RTAP has developed a comprehensive Marketing Toolkit called “How-To Guide for Marketing Public Transportation” and is applicable beyond just rural areas. The toolkit suggests that a rule of thumb is that an organization should devote 1 percent of its budget to marketing. That means that a program with a \$250,000 budget should devote \$2,500 to marketing.
- **On-Line Resources.** An on-line resource could be developed with a comprehensive overview of available transportation options. The existing [www.salem.org](http://www.salem.org) site primarily includes information for visitors. This site could be enhanced to provide more detailed information for residents and others. Increased social media presence around transportation options for residents and visitors could potentially raise awareness of services.
- **Information Videos.** Short videos that can be posted to the website and/or a YouTube channel that would provide information on how to access the available services and would provide visuals for those that respond to information provided in this format. Videos could be offered in multiple languages. Instructional videos for using existing Uber and Lyft service could also be posted on the COA website.
- **City Transportation Guide.** A city transportation guide could be developed, which includes all the services listed on the website listed above, could be printed in small quantities so that it can be updated. This could be a valuable resource to those that are less familiar with how to use technology to get information. It can also be translated into several language for greater accessibility to all residents.

## REBRANDING

In looking at the CrossTown Connect TMA model as a Best Practice, the TMA group took a disparate set of transportation services and slowly rebranded them as a network. The Council on Aging Van, the Road Runner Service, the Dial-A-Ride Service and the Rail Shuttle were all started as independent services operated by different entities. Over time they have all been branded to retain their identity, but to also link them to a network. They are now identified by their name and the addition of the words “A Service of CrossTown Connect.” This included a logo with a visual image to create a brand identity for the network. This simple technique was a way to bring them together under one umbrella.

The Big Blue Bus is also a good example of a service that has very successfully branded itself through a strong color and catchy name.

Salem is in a similar position as it has a number of services that each have their own identity (Council on Aging Vans, Trolley, Salem State Shuttles). If residents began to see this as an interconnected network through a marketing effort, the services would become more comprehensible and the system would be able to grow and develop as a unit.

## INFRASTRUCTURE

The survey of residents revealed that many had concerns regarding the condition of roads and sidewalks. This was mentioned as an impediment to walking as a means of getting around. The city is currently undergoing a number of roadway construction projects to address this concern. This is a long-term project that will not be able to be resolved immediately.

If a fixed-route shuttle service were to be established, the city would need to locate bus stops, either on-street or within parking lots, adjacent to an area sufficient to operate the shuttle bus wheelchair lift. Additionally, providing signs at all bus stops is not only helpful to passengers and drivers, it is a good marketing strategy. Signs should be installed once the route is finalized.



## 9.0 IMPLEMENTATION

A program for implementing the key recommendations of this study follows and is organized around forming partnerships, funding and next steps.

### PARTNERSHIPS

#### **OTHER COMMUNITIES**

The CrossTown Connect model may be an example that the city looks to follow in partnering with other nearby communities to offer joint shuttle services in the future. This would expand service both in origin and destination options and frequency of service.

#### **OTHER SHUTTLE PROVIDERS**

Presented as an alternative in Chapter 7, the city could contact private organizations that currently operate a shuttle service, including the North Shore Medical Center and Salem State University.

### FUNDING SOURCES

To keep fares as low as possible, several different state and federal programs are identified that could be possible sources of funding for a shuttle service in Salem.

#### **COMMUNITY TRANSIT GRANT**

The Salem Council on Aging has taken advantage of the Community Transit Grant Mobility Assistance Program Option in order to purchase capital equipment (vehicles) for providing transportation. In addition, there is funding as part of this program for operational costs of services that have a focus on expanding transportation options for seniors and individuals with disabilities. Both Acton and Bedford have taken advantage of this funding to help support the operation of their services. The Community Transit Grant is an annual competitive program administered by MassDOT to distribute Federal Transit Administration Section 5310 funds and State Mobility Assistance Program funds. The grant program provides funding to assist with mobility management activities, the purchase of capital equipment, and operational costs to meet the mobility needs of seniors (sixty-five years and over) and individuals with disabilities of any age. The amount varies depending on the project. Applications can be submitted online through MassDOT.

## **METROPOLITAN PLANNING ORGANIZATION**

The Boston Region Metropolitan Planning Organization (MPO) is responsible for conducting the federally required metropolitan transportation planning process (often called the 3C – continuing, cooperative, and comprehensive – process) for the Boston metropolitan area. The MPO uses this process to develop a vision for the region and then decides how to allocate federal and state transportation funds to programs and projects such as roadway, transit, bicycle, and pedestrian improvements that support that vision. Funding sources that come from the MPO include the *Congestion Mitigation and Air Quality (CMAQ) Improvement Program*. The purpose of the program is to provide a flexible funding source to state and local governments for transportation projects and programs to help meet the requirements of the Clean Air Act. Funds may be used for a transportation project or program that is likely to contribute to the attainment or maintenance of a national ambient air quality standard, with a high level of effectiveness in reducing air pollution, and that is included in the metropolitan planning organization’s (MPO’s) current transportation plan.

The State Transportation Improvement Program (STIP) “is a five-year investment program that prioritizes federal funds for improvements to our roadways, bridges, transit systems, and bicycle and pedestrian facilities throughout the Commonwealth.” The most recent version identifies \$800,000 in Fiscal Year 2020 and in Fiscal Year 2021 through the CMAQ program for a Community Transportation Program. There may be an opportunity for the city to apply for funds that could be used for a shuttle program as the description of the workplan for the program states: “Provides funding to launch locally developed transit or shuttle services that support first-mile/last-mile connections to existing transit services and other destinations by purchasing shuttle buses and/or funding operating costs.” No details are yet available on the application process or timeline.

## **NORTH SHORE TRANSPORTATION MANAGEMENT ASSOCIATION (NSTMA)**

The Metropolitan Area Planning Council received \$125,300 from an Efficiency and Regionalization grant to fund a shuttle to connect the Beverly Depot commuter rail station to suburban work and residential locations. Working with the NSTMA, and in partnership with other groups, the city could apply for a similar grant to fund a new regional shuttle system.

## **COMMONWEALTH TRANSPORTATION INFRASTRUCTURE ENHANCEMENT FUND**

The Commonwealth Transportation Infrastructure Fund requires transportation network services like Uber or Lyft to report the number of rides from the previous year that originated in each city or town and pay a per-ride assessment, half of which (\$0.10 per ride) is paid to cities and towns to be used for transportation-related costs. In 2017, 296,482 rides originating in Salem were provided by these services. Therefore, the city could expect to receive \$29,648 from the

fund. The Metropolitan Area Planning Council has available on its website guidance on how to access and use these funds (<https://www.mapc.org/resource-library/tnc-dpu-funds/>). Note that any community that receives these funds must complete and submit a spending report on how the funding was used, or will be used, by December 31, 2018.

### **MASSACHUSETTS COMMUNITY FOUNDATIONS**

Community Foundations are nonprofit, tax-exempt, publicly-supported grantmaking organizations. These foundations are public charities since they develop broad support from many unrelated donors with a wide range of charitable interests in a specific community. A community foundation has an independent board that is broadly representative of the public interest and it maintains a diverse grant program that is not limited in scope. One possible community foundation is the Essex County Community Foundation. ECCF was founded in 1999 to achieve two goals in the philanthropic/nonprofit sector of Essex County: to educate nonprofit leaders in sound business practice, and to connect those leaders with local funding to support their work. ECCF awards over \$4 million grants each year to support the programs and operations of nonprofit organizations in Essex County and beyond. Although the ECCF has not specifically issued grants for transit in the past, they have worked with organizations that focus on improving quality of life for elderly and disabled people.

### **ADVERTISING**

Another possible source of funding for a shuttle service is advertising. Advertising on the outside of the bus, on the bus website or on printed schedules could be sold to local businesses. Ads could be posted inside the bus as well, at a lower cost. These ads/sponsorships could offset the costs of the shuttle and provide both locals and tourists with information about some of Salem's businesses.

### **REALLOCATION OF MBTA ASSESSMENT**

The MBTA assessment for Salem is estimated at \$944,714 for this Fiscal Year (2019). Joining a regional transit authority is a way that communities have been able to obtain a reallocation of these funds. However, as Salem receives fixed route bus service from the MBTA, the city is currently prohibited from joining a regional transit authority such as CATA (m.g.l. Chapter 161b, section 3). However, Salem could potentially undertake a campaign to change the existing legislation (m.g.l. Chapter 161b).

## **PARKING BENEFIT DISTRICT**

The Municipal Modernization Act (2016) allows Massachusetts cities and towns to create specific areas where parking revenues can be reinvested for the purpose of transportation-related improvements including the operation of transit services. The City of Salem could establish a parking benefit district in one or more areas of the city through the local legislative process. Once established, the funds raised from the parking meters in the Parking Benefit District could be used for, among other things, the funding transportation improvements within the community. The Parking Benefit District would be overseen by a body that is designated by the city.

## **TRANSPORTATION DEMAND MANAGEMENT (TDM) REQUIREMENTS**

In July 2015 the Metropolitan Area Planning Council authored a study entitled “*Transportation Demand Management Case Studies and Regulations.*” Summarized below are recommendations from the report that are applicable to the city’s current desire to seek funds to help support community-based transportation programs including a shuttle. It’s important to note that if the city is considering requiring employer participation in a shuttle program through a mitigation effort, it should be certain that the service being established will serve that facility.

- Require Transportation Demand Management plans from new developments either through:
  - Adopting a by-law that includes language with very specific triggers for requirements and which also ensures that there is a clear transfer of responsibility in the event of a change in ownership or tenant turnover (e.g., incorporate in deed, link to an occupancy permit).
  - A Condition of Approval for individual projects.
- Require new developments to meet standards based on documented transportation impacts or the total cost of the development project.
- Develop a strong ongoing review process is in place to ensure TDM compliance and effectiveness.
- Develop clear and succinct language that includes very specific requirements and include precise language to ensure that there is a clear transfer of responsibility in the event of a change in ownership or tenant turnover (e.g., incorporate in deed, link to an occupancy permit).
- Ensure that building and occupancy permits are only issued after a TDM plan has been approved by the city.
- Establish policies for non-compliance. For example, a municipality can hold off on issuing new permits (e.g., occupancy permit) or put a lien on property in the amount owed by the developer.
- Require membership in the North Shore Transportation Management Association (TMA). The TMA serves the Salem area and can be a partner to the city in developing and evaluating

transportation programs. Requiring TMA membership of new development is an effective way to support the TMA so that it can assist the city.

- Fund a transportation coordinator position to ensure commitments to TDM measures are implemented. This could be a stand-alone position or folded into a current employee's job duty if possible.

Examples of successful mitigation/monitoring programs include:

- The City of Cambridge Parking and Transportation Demand Management (PTDM) Ordinance. This ordinance requires non-residential private developments to submit an annual plan and commit to a mode share goal (i.e., reducing the number of cars that come into a workplace). The PTDM plan often includes elements such as contributing to existing shuttle programs or even funding new shuttle programs. Comprehensive PTDM monitoring reports are required annually.
- Special permit requirements with one-time transportation mitigation payments are favored by a number of communities to fund transportation initiatives.
- The Lexington Hartwell Avenue Transit Management Overlay District includes required mitigation fees.
- The Kendall Square Transit Enhancement Program (KSTEP) is a mechanism and governance structure for funding public transit in the Kendall Square area of Cambridge, MA. A funding formula was developed to determine the amount a development will contribute to support public transit improvements in the Kendall Square area. In the case of the KSTEP the funding is to be used in the Mixed-Use District (the "MXD District") of Kendall Square. The formula used to determine the contribution is as follows: Daily Transit Trips generated by the project x 0.5 x timeframe (weekdays per 15 years) x Fare Recovery Gap per Trip = KSTEP Project Contribution.

A Memorandum of Understanding (MOU) was entered into by the Cambridge Redevelopment Authority (CRA), City of Cambridge, the Massachusetts Department of Transportation (MassDOT), the Massachusetts Bay Transportation Authority (MBTA) and Boston Properties (BP)-the designated redeveloper of the MXD District. The MOU will be in place for 15 years and outlines the funding formula and how the funds are to be used. A working group, including parties to the MOU, will establish funding priorities and allocations for consideration by the CRA and the City Manager.

## NEXT STEPS

This report makes a number of recommendations for the city to review. To move forward, the city should consider establishing a Transportation Task Force or a Transportation Advisory Committee to identify the city's top priorities around transportation to determine which recommendations set forth in this report should be implemented and in what order. The group may also want to develop its own set of recommendations from the alternatives presented

herein. Included in the group should be many of the same individuals and organizations who participated in the stakeholder meeting as they represent the key constituencies of the city.

In addition, the city should identify a staff person who can take on the role of Transportation Coordinator as noted in this report. That will ensure that development of new transportation programs and services proceeds is a logical process that takes into account both short- and long-term goals around transportation. It will also enable Salem to develop a strategy and build support for a strong transportation network.

Some of the items to be considered going forward:

- Groups targeted to be served by new transportation service (will help to determine the hours when service is most needed):
  - Commuters
  - Seniors
  - Students
  - Individuals with disabilities
  
- Types of trips (helps to determine trip length and how many trips would be able to be made)
  - Daily needs trips such as medical appointments, shopping, etc.
  - Social/recreational trips
  - In-town vs. out-of town trips
  - Evening service
  
- Funding sources available (may help to decide start date and what level of service can be offered):
  - Grants
  - City budget
  - TDM by-laws/permit requirements from new development
  - Parking Benefit District