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<td>MOU</td>
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<td>MWRTA</td>
<td>MetroWest Regional Transit Authority</td>
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<td>NTD</td>
<td>National Transit Database</td>
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<td>Pioneer Valley Transit Authority</td>
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<td>RTA</td>
<td>Regional Transit Authority</td>
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<td>SRTA</td>
<td>Southeastern Regional Transit Authority</td>
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<td>TAM</td>
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<td>TCI</td>
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<td>TERM</td>
<td>Transit Economic Requirements Model</td>
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<td>ULB</td>
<td>Useful Life Benchmark</td>
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<td>UPT</td>
<td>Unlinked Passenger Trip</td>
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<td>VRH</td>
<td>Vehicle Revenue Hour</td>
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<td>VTA</td>
<td>Vineyard Transit Authority</td>
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<td>WRTA</td>
<td>Worcester Regional Transit Authority</td>
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Glossary

**Access**: The opportunity to reach a given destination within a certain timeframe or without significant physical, social, or economic barriers.

**Accessible Vehicle**: A public transportation vehicle that does not restrict access, is usable, and provides allocated space and/or priority seating for individuals who use mobility devices.

**Americans with Disabilities Act (ADA)**: The Americans with Disabilities Act, passed in July 1991, gave direction to local transit agencies to ensure full access to transportation for persons with disabilities.

**Boardings**: The total number of passengers getting on a transit vehicle during a specified period of time. See also Ridership and Passenger Trip.

**Capital Cost**: The cost of equipment and facilities required to support transportation systems, including vehicles, radios, shelters, software, etc.

**Central Transfer Point**: A central meeting place where routes or zonal demand response buses intersect so that passengers may transfer. Routes are often timed to facilitate transferring and depart once passengers have had time to transfer. When all routes arrive and depart at the same time, the system is called a pulse system. The central transfer point simplifies transfers when there are many routes (particularly radial routes), several different modes, and/or paratransit zones. A downtown retail area is often an appropriate site for a central transfer point, as it is likely to be a popular destination, a place of traffic congestion and limited parking, and a place where riders are likely to feel safe waiting for the next bus. Strategic placement of the transfer point can attract riders to the system and may provide an opportunity for joint marketing promotions with local merchants.

**Circulator**: A bus that makes frequent trips around a small geographic area with numerous stops around the route. It is typically operated in a downtown area or area attracting tourists, where parking is limited, roads are congested, and trip generators are spread around the area. It may be operated all-day or only at times of peak demand, such as rush hour or lunchtime.

**Commuter Bus Service**: Transportation designed for daily, round-trip service, which accommodates a typical 8-hour, daytime work shift (e.g., an outbound trip arriving at an employment center by 8 AM, with the return trip departing after 5 PM).

**Coordination**: Coordination means pooling the transportation resources and activities of several agencies. The owners of transportation assets talk to each other to find ways to mutually benefit their agencies and their customers. Coordination models can range in scope from sharing information, to sharing equipment and facilities, to integrated scheduling and dispatching of services, to the provision of services by only one transportation provider (with other former providers now purchasing services). Coordination may involve human service agencies working with each other or with public transit operations.

**Cost per Boarding**: The total operating expenditures of a route or service divided by the number of total boardings.

**Cost per Revenue Mile or Hour**: The total operating expenditures of a route or service divided by the number of revenue miles or revenue hours.

**Demand Response Service**: Service to individuals that is activated based on passenger requests. Usually passengers call the scheduler or dispatcher and request rides for dates and times. A trip is scheduled for that passenger, which may be canceled by the passenger. Usually involves curb-to-curb or door-to-door service. Trips may be scheduled on an advanced reservation basis or in “real-time.” Usually smaller vehicles are used to provide demand
response service. This type of service usually provides the highest level of service to the passenger but is the most expensive for the transit system to operate in terms of cost per trip. In rural areas with relatively high populations of elderly persons and persons with disabilities, demand response service is sometimes the most appropriate type of service. Sub-options within this service type are discussed in order of least structured to most structured, in terms of routing and scheduling.

- **Pure Demand Response Service**: Drivers pick up and drop off passengers at any point in the service area, based on instructions from the dispatcher. In pure demand response systems, the dispatcher combines immediate requests, reservations, and subscription service for the most efficient use of each driver’s time.

- **Zonal Demand Response Service**: The service area is divided into zones. Buses pick up and drop off passengers only within the assigned zone. When the drop off is in another zone, the dispatcher chooses a meeting point at the zone boundary for passenger transfer or a central transfer is used. This system ensures that a vehicle will always be within each zone when rides are requested.

- **Flexibly Routed and Scheduled Services**: Flexibly routed and scheduled services have some characteristics of both fixed route and demand response services. In areas where demand for travel follows certain patterns routinely, but the demand for these patterns is not high enough to warrant a fixed route, service options such as checkpoint service, point deviation, route deviation, service routes, or subscription service might be the answer. These are all examples of flexible routing and schedules, and each may help the transit system make its demand response services more efficient while still maintaining much of the flexibility of demand responsiveness.

- **Microtransit**: A form of demand response service, open to the general public, that requires some type of “reservation,” typically made via an app-based system. Typically, microtransit uses software algorithms to completely automate the scheduling of the trip, the fare collection (if any), and the route the driver will utilize (communicating with the driver via some type of mobile data terminals).

**Deviated Fixed Route Service**: Transit buses travel along a predetermined alignment or path with scheduled time points at each terminal point and in some instances at key intermediate locations. Route deviation service is different than conventional fixed route bus service in that the vehicle may leave the route upon requests of passengers to be picked up or returned to destinations near the route. Following an off-route deviation, the vehicle typically returns to the point at which it left the route. Passengers may call in advance for route deviation or may access the system at predetermined route stops. The limited geographic area within which the vehicle may travel off the route is known as the route deviation corridor.

**Dial-A-Ride Service**: A name that is commonly used for demand response service. It is helpful in marketing the service to the community, as the meaning of “dial-a-ride” may be more self-explanatory than “demand response” to someone unfamiliar with transportation terms.

**Environmental Justice**: Executive Order 12898, issued in 1994, requires agencies receiving federal funds to determine whether their programs, policies, and activities will have disproportionately high and adverse human health or environmental effects on minority or low-income populations.

**Express Bus Service**: Express bus service characteristics include direct service from a limited number of origins to a limited number of destinations with no intermediate stops. Typically, express bus service is fixed route/fixed schedule and is used for longer distance commuter trips. The term may also refer to a bus that makes a limited number of stops, while a local bus makes many stops along the same route but as a result takes much longer.
Farebox Recovery Ratio: The percentage of operating costs covered by revenue from fares and contract revenue (total fare revenue and total contract revenue divided by the total operating cost).

Fares: Revenue from cash, tickets, and pass receipts given by passengers as payment for public transit rides.

Federal Transit Administration (FTA): An operating administration within the United States Department of Transportation that administers federal programs and provides financial assistance to public transit.

Feeder Service: Local transportation service that provides passengers with connections to a longer-distance transportation service. Like connector service, feeder service is service in which a transfer to or from another transit system, such as an intercity bus route, is the focal point or primary destination.

Fixed Route: Transportation service operated over a set route or network of routes on a regular time schedule.

Headway: The length of time between vehicles moving in the same direction on a route. Headways are called short if the time between vehicles is short and long if the time between them is long. When headways are short, the service is said to be operating at a high frequency; if headways are long, service is operating at a low frequency.

Intercity Bus Service: Regularly scheduled bus service for the public that operates with limited stops over fixed routes connecting two or more urban areas not near, that has the capacity for transporting baggage carried by passengers, and that makes meaningful connections with scheduled intercity bus service to more distant points, if such service is available. Intercity bus service may include local and regional feeder services, if those services are designed expressly to connect to the broader intercity bus network.

Interlined Routes: When fixed routes are routed through a transfer center or some other terminal location and become another route, with passengers typically allowed to ride through from one route to another without an additional fare and/or transfer fee. The “interline” is typically identified on public materials.

Operating Expenditures: The recurring costs of providing transit service (wages, salaries, fuel, oil, taxes, maintenance, insurance, marketing, etc.).

Operating Revenue: The total revenue earned by a transit agency through its transit operations. It includes passenger fares, advertising, and other revenues.

Paratransit Service: "Paratransit" means the transportation of passengers by motor vehicle or other means of conveyance by persons operating on a regular and continuing basis and the transportation or delivery of packages in conjunction with an operation having the transportation of passengers as its primary and predominant purpose and activity but excluding regular route transit. "Paratransit" includes transportation by carpool and commuter van, point deviation and route deviation services, shared-ride taxi service, dial-a-ride service, and other similar services.

Boardings per Mile or Hour: Productivity measure that takes the total boardings and divides by the miles and/or hours operated. The hours and/or miles may be presented as either total vehicle miles or hours or as revenue miles or hours.

Passenger Trip (Unlinked): Typically, one passenger trip is recorded any time a passenger boards a transportation vehicle or other conveyance used to provide transportation. "Unlinked" means that one trip is recorded each time a passenger boards a vehicle, no matter how many vehicles that passenger uses to travel from their origin to their destination.
Performance Indicator: An indicator is a metric that provides meaningful information about the condition or performance of the transportation system but is neither managed nor used to evaluate the effectiveness of policies, strategies, or investments.

Performance Measure: A performance measure is a metric that measures progress toward a goal, outcome, or objective. This definition covers metrics used to make decisions or evaluate the effectiveness or adequacy of a policy, strategy, or investment.

Performance Target: A target is a specific performance level representing the achievement of a goal, outcome, or objective.

Point Deviation Service: A type of flexible route transit service in which fixed scheduled stops (points) are established but the vehicle may follow any route needed to pick up individuals along the way if the vehicle can make it to the fixed points on schedule. This type of service usually provides access to a broader geographic area than does fixed route service but is not as flexible in scheduling options as demand response service. It is appropriate when riders change from day to day, but the same few destinations are consistently in demand. Also sometimes called checkpoint service.

Public Transportation: Transportation service that is available to any person upon payment of the fare either directly, subsidized by public policy, or through some contractual arrangement, and that cannot be reserved for the private or exclusive use of one individual or group. “Public” in this sense refers to the access to the service, not to the ownership of the system that provides the service.

Revenue Hours: The number of transit vehicle hours when passengers are being transported. Calculated by taking the total time when a vehicle is available to the public with the expectation of carrying passengers. Excludes deadhead hours, when buses are positioning but not carrying passengers, but includes recovery/layover time.

Revenue Miles: The number of transit vehicle miles when passengers are being transported. Calculated by taking the total mileage operated when a vehicle is available to the public with the expectation of carrying passengers. Excludes deadhead mileage, when buses are moving but not carrying passengers.

Ridership: The total of all unlinked passenger trips, including transfers. One trip that includes a transfer would be counted as two unlinked passenger trips.

Ridesharing: A form of transportation, other than public transit, in which more than one person shares the use of a vehicle, such as a van or car, to make a trip. Variations include carpooling or vanpooling.

Section 5304 (State Transportation and Planning Program): The section of the Federal Transit Act of 1991, as amended, that provides financial assistance to the states for purposes of planning, technical studies and assistance, demonstrations, management training, and cooperative research activities.

Section 5307 (Urbanized Area Formula Program): The section of the Federal Transit Act of 1991, as amended, that authorizes grants to public transit systems in urban areas with populations of more than 50,000 for both capital and operating projects. Based on population and density figures, these funds are distributed directly to the transit agency from the FTA.

Section 5310 (Enhanced Mobility for Seniors and Persons with Disability): The section of the Federal Transit Act of 1991, as amended, that provides grant funds for the purchase of accessible vehicles and related support equipment for private non-profit organizations to serve elderly and/or people with disabilities, public bodies that coordinate services for elderly and
people with disabilities, or any public body that certifies to the state that non-profits in the area are not readily available to carry out the services.

**Section 5311 (Non-urbanized Area Formula Program):** The section of the Federal Transit Act of 1991, as amended, that authorizes grants to public transit systems in non-urbanized areas (fewer than 50,000 population). The funds initially go to the governor of each state.

**Section 5339 (Bus and Bus Facilities):** The section of the Federal Transit Act of 1991, as amended, that makes federal resources available to states and designated recipients to replace, rehabilitate, and purchase buses and related equipment and to construct bus-related facilities, including technological changes or innovations to modify low or no emission vehicles or facilities. Funding is provided through formula allocations and competitive grants. A sub-program provides competitive grants for bus and bus facility projects that support low and zero-emission vehicles.

**Service Area:** The geographic area that coincides with a transit system’s legal operating limits (city limits, county boundary, etc.).

**Service Gaps:** When certain geographic segments cannot be covered by transportation services. This term can also refer to instances where service delivery is not available to a certain group of riders, or at a specific time.

**Service Span:** The duration of time that service is made available or operated during the service day (e.g., 6 AM to 10 PM on weekdays).

**Spare Ratio:** The percentage/number of vehicles that an operator purchases in excess of the number of vehicles required to provide the maximum level of service. The spares are required so that some vehicles may cycle through a preventive maintenance regimen while the full level of planned service can still be provided.

**Standard:** A recommendation that leads or directs a course of action to achieve a certain goal. A standard is the expected outcome for the measure that will allow a service to be evaluated. There are two sets of transit standards.

- **Service design and operating standards:** Guidelines for the design of new and improved services and the operation of the transit system.
- **Service performance standards:** The evaluation of the performance of the existing transit system and of alternative service improvements using performance measures.

**State Contract Assistance:** The program through which the RTAs receive state operating funding for transit at the discretion of the Massachusetts Legislature via the state budget process annually. The total amount of state contract assistance funding provided in the state budget is allocated to the RTAs via a formula developed with RTA input.

**Through Routes:** When fixed routes are routed through a transfer center or some other terminal location and become another route, but – unlike interlining – passengers are not typically allowed to ride through from one route to another, as a “through-route” is typically only visible/presented on the operating schedule for bus operators and is not identified on public materials.

**Title VI:** Title VI of the Civil Rights Act of 1964 requires that “No person in the United States shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance.”

**Transportation Network Companies:** Private sector companies that provide software routing, scheduling, and payment services to independent contractor drivers for a fee; these drivers then
utilize their own vehicles to provide a (typically) curb-to-curb transportation service, sometimes to sole riders and sometimes to pooled groups.

**Total Operating Cost**: The total of all operating costs incurred during the transit system calendar year, excluding expenses associated with capital grants.

**Transfer**: Passengers arrive on one bus and leave on another (totally separate) bus to continue their trip. The boarding of the second vehicle is counted as an unlinked passenger trip.

**Transit Dependent**: A description for a population or person who does not have immediate access to a private vehicle, or because of age or health reasons cannot drive and must rely on others for transportation.

**Transit Subsidy**: The operating costs not covered by revenue from fares or contracts.

**Trip Denial**: Occurs when a trip is requested by a passenger, but the transportation provider cannot provide the service. Trip denial may happen because capacity is not available at the requested time. For ADA paratransit, a capacity denial is specifically defined as occurring if a trip cannot be accommodated within the negotiated pick-up window. Even if a trip is provided, if it is scheduled outside the +60/-60-minute window, it is considered a denial. If the passenger refused to accept a trip offered within the +60/-60-minute pick-up window, it is considered a refusal, not a capacity denial.

**Volunteers**: Persons who offer services to others but do not accept monetary or material compensation for the services that they provide. In some volunteer programs, the volunteers are reimbursed for their out-of-pocket expenses; for example, volunteers who drive their own cars may receive reimbursement based on miles driven for the expenses that they are assumed to have incurred, such as gasoline, repair, and insurance expenses.
1. Executive Summary

1.1 Introduction

This 5-year Comprehensive Regional Transit Plan (CRTP) builds on the work of the Cape Cod Regional Transit Authority’s (CCRTA) 2015 Comprehensive Service Assessment (CSA). This CRTP was recommended by the Task Force on Regional Transit Authority Performance and Funding, in its final report issued April 2019.¹

The Task Force Report included 24 recommendations in 5 categories: Investment and Performance, Accountability, Service Decisions, Quality of Service, and Environmental Sustainability. The CRTP (Recommendation #7) was included in the service decisions grouping. Specifically, Recommendation #7 advised that “RTAs will continue to succeed by understanding their markets and by aiming to have their service networks meet the current and future mobility needs of their region as well as support connectivity to other regions where possible. This effort will be guided by the completion or updating of Comprehensive Regional Transit Plans (CRTPs) every five years…”²

Following publication of the Task Force Report, a commitment to complete the CRTP was included in CCRTA’s 2-year Memorandum of Understanding (MOU) with the Massachusetts Department of Transportation (MassDOT), executed in August 2019.

The primary goals of this CRTP are to (1) provide an agency and service overview, including fare structure; (2) identify essential markets, gaps in service, and ridership growth opportunities given demographic, socioeconomic, and employment data and the impacts of the novel coronavirus (COVID-19) pandemic; (3) evaluate the results of performance indicators and assess performance monitoring systems; and (4) provide recommendations for a strategic 5-year vision that will prioritize the development and implementation of a decision-making driven by data analysis and focused on performance.

The CCRTA CRTP started in December 2019 but took a profound and unexpected turn mid-way through the project. Following the kick-off meeting in January 2020, the process proceeded with data collection, goal development, and planning for community and rider engagement. However, by the middle of March 2020, when the engagement activities were scheduled to commence, the world experienced a historic pause due to the COVID-19 pandemic.

In response to the pandemic, on March 10, 2020, Massachusetts Governor Charlie Baker declared a state of emergency and subsequently issued a stay-at-home order on March 23, 2020, closing all non-essential businesses. These safety measures, issued in the face of an unprecedented threat to public health, had serious, sweeping impacts, including on the development of this plan and transit operations writ large. CCRTA, along with the other regional transit authorities (RTAs), suspended fare payment and reduced service levels, encouraging non-essential riders to temporarily discontinue travel.

“Cape Cod RTA is working tirelessly on ensuring that all health and safety precautions are taken to help mitigate the spread of COVID-19 and keep our customers and employees safe. The safety and wellbeing of our passengers and our employees is always our foremost consideration.” – CCRTA website

While CCRTA continues its return to normal service in accordance with public health guidelines, ridership is still depressed due to pandemic impacts such as distance learning, business closures, remote work, furloughs, layoffs, and reluctance to use public transportation due to health and safety concerns. In response to the continued ridership volatility, this CRTP acknowledges the unpredictability over the coming months and years and equips CCRTA with data-driven and performance-focused recommendations so that the Authority will be able to quickly and successfully adapt to a changing transit market.

1.2 Overview of CCRTA Services

CCRTA’s main hub is located at the Hyannis Transportation Center (HTC) in Hyannis, a village in the Town of Barnstable, Massachusetts. CCRTA is 1 of the 15 RTAs that, along with the Massachusetts Bay Transportation Authority (MBTA), operates public transportation in the Commonwealth. Because of the seasonal nature of the economy on Cape Cod, with the summer season seeing an increase in visitors as well as a concurrent increase in service employment to cater to their needs, CCRTA has seasonal variations in the service it provides. CCRTA currently operates 11 fixed routes, including 8 year-round routes and 3 seasonal trolley/shuttle services. Several routes (i.e., Barnstable Villager, Hyannis Crosstown, and Hyannis Area Trolley) offer limited route deviations to preset destinations upon request. The Flex route, which serves the Lower and Outer Cape, will make a maximum of two route deviations of up to ¾ mile, except in Provincetown, by reservation scheduled at least 2 hours in advance. The Hyannis Crosstown and Patriot Limited (marketed as the “Patriot LTD”) Routes are relatively new services provided by CCRTA.

Dial-a-Ride Transportation (DART) is CCRTA’s demand response program and includes Americans with Disabilities Act (ADA) paratransit, non-ADA demand response, and a Boston Hospital Transportation service. In addition, CCRTA recently launched SmartDART, an app-based demand response solution (similar to a “microtransit” service), as a pilot program in Barnstable. SmartDART is designed to be a shared-ride, short-haul service that feeds rather than competes with the fixed route and offers free transfer to fixed route bus service.

CCRTA typically provides over 290,000 contracted human service transportation (HST) trips, many of which are included in the agency’s demand response numbers. Approximately 100,000 HST trips each year are delivered as demand taxi. HST connects riders to medical appointments, adult day health, home care services, workshops, day habilitation, and early intervention programs. The service is fare-free to riders, but costs are fully reimbursed by the funding agency.

In addition, CCRTA operates the CapeFLYER through a contract with MBTA and MassDOT. CapeFLYER is a seasonal passenger rail service between South Station in Boston and the HTC with connections to MBTA Braintree, Brockton, and Middleborough/Lakeville stations with additional stops in Bourne, Buzzard’s Bay, and Wareham Village. This service operates Friday evenings to Sunday from Memorial Day weekend to Labor Day weekend.

CCRTA has implemented a variety of service improvements over the last 5 years that support efforts to improve the customer experience and inform service improvements by better tracking system performance. Improvements include:

- Introduction of the new Hyannis Crosstown service
- Addition of the new Patriot Limited service
- Introduction of the pilot SmartDART demand response service in Barnstable
1.3 Planning Process

The impacts and limitations imposed by the COVID-19 pandemic required flexibility in the approach for developing this 5-year plan. While some elements of the original process developed pre-pandemic remained viable, many had to be adapted to respond to the new realities of COVID-19. From public outreach to fare policies analysis to the structure of the recommendations, this planning process incorporates considerations relating to uncertainty around how the future might unfold.

1.3.1 Review of Transit Services and Market Conditions

A review of service from the last 5 years and market demand analysis were conducted to identify gaps and needs in CCRTA’s service area. The analysis overall indicated that CCRTA’s service is efficient, generally performing as well as its peers in the Commonwealth, and that service is provided to areas where demographic data indicate demand is highest. However, safety measures like remote learning and teleworking, along with furloughed workers and layoffs, greatly disrupted CCRTA’s existing ridership patterns, particularly in terms of the summer seasonal ridership, making it difficult to infer future transit demand from past performance. This planning process brought to light the importance of harnessing new technology to conduct ongoing analysis of real-time data rather than focusing primarily on historical trends.

1.3.2 Scenario Planning

The project team used scenario planning exercises to imagine what the next 5 years might hold in terms of ridership and market demand. After the state of emergency was issued, CCRTA leadership participated in a brainstorming session centered around establishing key uncertainties in the face of the COVID-19 pandemic. Subsequent to that workshop, a high-ridership scenario (a return to 100 percent of pre-pandemic ridership), medium-ridership scenario (75 percent of pre-pandemic ridership), and low-ridership scenario (50 percent of pre-pandemic ridership) were developed to inform the development of needs and recommendations. These scenarios formed the framework of the recommendations in this plan.

1.3.3 Public Outreach

Due to social distancing guidelines and other safety protocols resulting from the COVID-19 pandemic, no in-person outreach could be conducted. The bulk of the outreach for this CRTP was undertaken through an online community outreach survey conducted in the summer of 2020. Additionally, CCRTA held several online focus groups with key regional stakeholders, including local leaders and community members. Finally, online sessions with CCRTA bus operators were also conducted to solicit their input.

Over 400 survey responses were collected using the online survey, though it should be noted that the findings are not a statistically valid sample of CCRTA riders or the region’s residents – rather, they allowed the study team to identify key issues and themes. They should be used as a guide in the context of other public outreach and data analysis. Nonetheless, key takeaways that comport with other planning efforts include:

- Survey respondents indicated a relatively lengthy tenure of ridership on CCRTA services (meaning that many use the service regularly and not solely as a “stopgap” or transitional measure until they own a car).
• Many survey respondents also indicated a desire for reduced travel times or more direct services.

• Stakeholders are supportive of CCRTA and value it as a key component of Cape Cod’s economy, particularly in its key seasonal role of supporting the economy and providing mobility on Cape Cod (for example, by transporting seasonal student workers around the Cape).

• Focus group participants expressed the need for an overall improvement in awareness of CCRTA services and their marketing.

1.4 Core Needs and Recommendations

CCRTA identified 13 core needs to include in this plan. Table 1 lists the associated core recommendations that CCRTA will pursue in the next 5 years, regardless of ridership levels. The full list can be found in Chapter 8.

Table 1. Core Needs and Recommendations

<table>
<thead>
<tr>
<th>Need</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>More direct intercity travel options</td>
<td>Reassign service in Osterville from the Sealine to the Sandwich Line. The Sealine will continue straight along Route 28.</td>
</tr>
<tr>
<td></td>
<td>Explore more direct routing options for Hyannis to Orleans (H2O).</td>
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<td></td>
<td>Transition the Flex route to a traditional fixed route service, with no deviations.</td>
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<td></td>
<td>Add intra-Cape express service (enhanced Patriot Limited).</td>
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<td></td>
<td>Expand SmartDART availability to address last mile connections in lieu of fixed route detours and route deviations.</td>
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<tr>
<td>Schedule optimization</td>
<td>Collaborate with MassDOT to hire a run-cut specialist to study and adjust schedules and dwell times by season, paying special attention to scheduled time points and mid-route layovers. Position may reflect a MassDOT or contracted specialist that can be utilized by several RTAs as needed.</td>
</tr>
<tr>
<td></td>
<td>Collaborate with MassDOT to hire a run-cut specialist to optimize cycle times and end of route layover to reduce unnecessary idle time. Position may reflect a MassDOT or contracted specialist that can be utilized by several RTAs as needed.</td>
</tr>
<tr>
<td>More reliable routing and schedules for Provincetown shuttles</td>
<td>Clearly establish Provincetown/North Truro Shuttle as three separate routes, all meeting at the hub at MacMillan Pier:</td>
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<tr>
<td></td>
<td>• Race Point Shuttle via Visitors Center and Provincetown Airport</td>
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<tr>
<td></td>
<td>• Herring Cove via First Pilgrims Beach</td>
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<tr>
<td></td>
<td>• North Truro via Shore Road</td>
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<tr>
<td>Need</td>
<td>Recommendation</td>
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<tr>
<td>Expanded fixed route service to</td>
<td>Add a new Dennis-Yarmouth Connector fixed route, running in the same corridor as H2O along Route 28 to Route 134, then going to Dennis Village via Patriot Square with possible extension to Yarmouthport.</td>
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<tr>
<td>Dennis Village Community Activity</td>
<td></td>
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<tr>
<td>Center (CAC)</td>
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<tr>
<td>Boston commuter services</td>
<td>Provide CapeFLYER service longer or year-round with potential added stops at legacy stations in Sandwich and West Barnstable.</td>
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<tr>
<td></td>
<td>Collaborate with MBTA to help facilitate a year-round commuter rail service from South Station to Buzzard's Bay via Middleborough. Explore and implement bus service connections that provide commuter connections to and from the Buzzard's Bay Train Station.</td>
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<tr>
<td>Improved marketing of services</td>
<td>Consider a more prominent link between the CapeFLYER and CCRTA fixed route transit websites.</td>
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<tr>
<td></td>
<td>Develop two system maps to distinguish summer and winter seasons and publish summer season information during the off-season to allow for advance trip planning.</td>
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<tr>
<td></td>
<td>Conduct new focused outreach and marketing efforts to both Councils on Aging and Chambers of Commerce on Cape Cod.</td>
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<tr>
<td>More designated/marked stops</td>
<td>Establish ridership or safety warrants and install new bus stop signage at warranted stops, as access to bus stops is important and lack of sidewalks and safe pedestrian crossings is a deterrent to transit use.</td>
</tr>
<tr>
<td>Transit priority treatment</td>
<td>Collaborate with MassDOT and towns to create a list of priority locations and for transit priority treatments or formal stop pull-outs. Designate CCRTA staff liaison who can provide planning support and grant writing assistance to towns.</td>
</tr>
<tr>
<td>HTC bathroom improvements</td>
<td>Provide upgrades that enhance security, health, and hygiene at the HTC bathroom.</td>
</tr>
<tr>
<td>Capital improvements for formal</td>
<td>Collaborate with MassDOT and towns to create a list of priority locations and for transit priority treatments or formal stop pull-outs. Designate CCRTA staff liaison who can provide planning support and grant writing assistance to towns.</td>
</tr>
<tr>
<td>stop pull-outs</td>
<td></td>
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<tr>
<td>Additional bike capacity on some</td>
<td>CCRTA already uses three-position bike racks (largest commercially available size). Additional bike capacity will be provided through frequency adjustments.</td>
</tr>
<tr>
<td>routes</td>
<td></td>
</tr>
<tr>
<td>Need</td>
<td>Recommendation</td>
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<td>-------------------------------------------</td>
<td>-------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Vehicle capital replacement</td>
<td>Continue to replace aging vehicles as they exceed useful life benchmarks, following Transit Asset Management (TAM) Plan schedule. Vehicle replacement should include review of options to pilot battery electric vehicles, as technology matures. CCRTA’s initiative to replace traditional high floor cutaways with low floor models has been a success in terms of rider convenience and trip optimization and should be continued.</td>
</tr>
<tr>
<td>Affordable/subsidized multi-family housing in proximity to fixed routes/town centers</td>
<td>Designate CCRTA staff liaison who can provide planning assistance/coordination to towns.</td>
</tr>
<tr>
<td>Enhanced performance management system</td>
<td>Identify technology-driven data tools and key performance metrics to establish an improved enterprise-wide data-driven management and decision-making framework. Implement a public-facing and transparent performance reporting mechanism.</td>
</tr>
</tbody>
</table>
2. Background and 2020 Context

The 15 RTAs provide vital mobility options and lifeline services to the millions of people across the Commonwealth outside of the Greater Boston region. The 2020 CRTP development process for the RTAs, funded by MassDOT, came out of Commonwealth-wide initiatives in 2018 and 2019, which prompted this plan's development. The CRTPs are both a result of and a contributor to the ongoing discussions on regional transportation. Recent and ongoing initiatives include the following:

- Governor’s Commission on the Future of Transportation
- A Vision for the Future of Massachusetts' Regional Transit Authorities (RTA Task Force)
- Transportation & Climate Initiative
- MBTA Fare Transformation

The RTA Task Force Final Report Recommendation No. 7 was the primary initiative driving the development of this CRTP. The CRTP is carried out as a commitment in the 2-year MOUs with MassDOT signed in August 2019. In addition to the CRTP, the MOU also contained commitments on performance metrics and targets, maintaining an up-to-date asset inventory, submitting a fare policy by December 2020, submitting a balanced budget annually, and reporting timelines. The CCRTA MOU is discussed in more detail in Chapter 6.

The CCRTA CRTP process began in December 2019 but took a profound and unexpected turn mid-way through the project. Following the kick-off meeting in January 2020, the process proceeded with data collection, goal development, and planning for community and rider engagement. However, by the middle of March 2020, when the engagement activities were scheduled to commence, the world experienced a historic pause due to the COVID-19 pandemic.

In response to the pandemic, on March 10, 2020, Governor Baker declared a state of emergency and subsequently issued a stay-at-home order on March 23. The stay-at-home order, originally intended to last 2 weeks, ended up lasting until May 18, 2020. As of the finalization of this plan in early 2021, the pandemic continues to disrupt services and negatively impact transit ridership. Given the unprecedented nature of this disruption and unknown long-term economic, social, and public health implications, the next few years will likely see continued widespread societal change. Therefore, transit agencies especially will need to continue to build a data driven and performance-focused decision-making framework to respond to these uncertain demographic and industry trends.

This chapter provides background and current context around the CRTP process for all RTAs. CCRTA-specific contextual information is included in Sections 2.2 and 2.3.

2.1 Background

Commonwealth-wide initiatives, organized generally around the themes of climate change, new technology, and providing affordable and convenient transportation options for all people, set

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the stage for the CRTP process. The RTAs play an important role in getting people across the diverse regions of the Commonwealth to work, to school, and to essential services. Because of this role, the RTAs are pivotal in improving the public’s mobility options as explored through the Commonwealth-wide initiatives described in this section.

2.1.1 Governor’s Commission on the Future of Transportation

Established by Executive Order in January 2018, the Governor’s Commission on the Future of Transportation (the Commission) was convened to explore the following topics across the Commonwealth and their impact on transportation between 2020 and 2040:

- Climate and Resiliency
- Transportation Electrification
- Autonomous and Connected Vehicles
- Transit and Mobility Services
- Land Use and Demographics

The Commission completed its work and released findings in December 2018 in a report entitled *Choices for Stewardship: Recommendations to Meet the Transportation Future*.\(^9\)

Findings from the report included:

- The Commonwealth is expected to grow by 600,000 residents by 2040 and job growth is also expected to continue.
- Commonwealth residents are on average older than in many other US states, and older adults are expected to comprise a larger portion of the population in the future.
- Transit ridership has followed national trends and been declining in recent years.
- Use of transportation network companies has increased dramatically in recent years.
- Connected and autonomous vehicles are expected to radically change transportation and mobility in the future.
- The impacts of climate change are happening sooner and more intensely than originally projected with significant implications by 2040.
- Transportation accounts for 40 percent of all greenhouse gas (GHG) emissions in the Commonwealth.
- Electric vehicles could be part of the solution to reducing transportation emissions but would require significant infrastructure to implement.

The Commission used a scenario planning approach to itemize recommendations to prepare the Commonwealth’s transportation system for the future. While many trends were evaluated for use in the scenario planning exercise, technology adoption as well as jobs and housing distribution were chosen as the two major trends that will most likely shape people’s mobility options and needs. Based on the scenario planning trend analysis, the Commission then identified key challenges facing the Commonwealth’s transportation system and developed recommendations across five categories to prioritize improvements over the next 20 years:

- Modernize existing state and municipal transit systems and transportation assets to more effectively and sustainably move more people throughout a growing Commonwealth.

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Comprehensive Regional Transit Plan
cape Cod Regional Transit Authority

- Create a 21st century “mobility infrastructure” that will prepare the Commonwealth and its municipalities to capitalize on emerging changes in transportation technology and behavior.
- Substantially reduce GHG emissions from the transportation sector in order to meet the Commonwealth’s Global Warming Solutions Act (GWSA) commitments, while also accelerating efforts to make transportation infrastructure resilient to a changing climate.
- Coordinate and modernize land use, economic development, housing, and transportation policies and investment in order to support resilient and dynamic regions and communities throughout the Commonwealth.
- Make changes to current transportation governance and financial structures in order to better position Massachusetts for the transportation system that it needs in the coming years and decades.

Within these 5 categories are a total of 18 recommendations on how to best prepare the Commonwealth’s transportation network for challenges and opportunities through 2040. The recommendations will guide Commonwealth-wide systems, specific solutions, and transportation investments, and will have a profound impact on the RTAs over the next 20 years.

2.1.2 A Vision for the Future of Massachusetts’ Regional Transit Authorities

Resulting from the Governor’s Commission on the Future of Transportation initiative and directed by Outside Section 72 of the FY 2019 Massachusetts State Budget, a Task Force on Regional Transit Authority Performance and Funding was established in the fall of 2018. The Task Force produced a report entitled A Vision for the Future of Massachusetts’ Regional Transit Authorities: Report of the Task Force on Regional Transit Authority Performance and Funding in April 2019.

The report built on the first recommendation from the Commission, “Prioritize investment in public transit as the foundation of a robust, reliable, clean, and efficient transportation system.” It set forth a path to stabilize, modernize, and improve the RTAs through five categories of action: Investment and Performance, Accountability, Service Decisions, Quality of Service, and Environmental Sustainability.

From those five categories, several goals related to the CRTP emerged:

- Sign a mutually negotiated MOU with MassDOT on a plan for performance monitoring and development of performance targets.
- Complete the CRTP and update every 5 years.
- Identify and evaluate a demonstrated community need for evening and 7-day service.
- Identify and evaluate appropriate transit services and potential partnerships based on level of demand and efficiency.
- Develop pilot programs for innovative delivery models.
- Increase regional collaboration, including cross RTA services.
- Collaborate with municipalities to provide safe walking and bicycle access to transit and comfortable, safe bus stops.
- Conduct a fare equity analysis every 3 years.

• Collaborate with the MBTA Fare Transformation process and adopt the proposed system.
• Participate in the Massachusetts Environmental Policy Act process.
• Maximize multimodal connectivity.
• Maintain an easily accessible website and robust social media presence.
• Collaborate with MassDOT and MBTA to integrate information services.
• Employ intentional outreach strategies.
• Purchase all zero-emission public buses by 2035.

Many of these goals are addressed and/or discussed as part of this CRTP.

2.1.3 Transportation & Climate Initiative

Massachusetts is a participating state in the Transportation & Climate Initiative of the Northeast and Mid-Atlantic States:

The Transportation and Climate Initiative (TCI) is a regional collaboration of 12 Northeast and Mid-Atlantic states and the District of Columbia that seeks to improve transportation, develop the clean energy economy and reduce carbon emissions from the transportation sector. The participating states are: Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, and Virginia, as well as the District of Columbia.

The initiative builds on the region’s strong leadership and commitment to energy efficiency and clean energy issues, and its programs to reduce carbon emissions in the power sector, which have resulted in the region becoming one of the most energy efficient areas in the nation. At the same time, the effort underscores the sense of urgency shared by all 12 jurisdictions, and their collective aspirations to become the leading region for sustainability and clean energy deployment in the country.

While the COVID-19 pandemic temporarily reduced congestion and associated pollution in the short-term, it has likely altered commuting patterns and housing choice in the long-term, which has environmental and sustainability implications. As such, the need to reduce carbon emissions from the transportation sector is just as important as it was before the COVID-19 pandemic. Additionally, the COVID-19 pandemic highlighted racial disparities in exposure to air pollution and disproportionate impacts of threats to public health. To that end, the TCI jurisdictions are collaborating to develop a low-carbon transportation program that advances equity.

The TCI jurisdictions are collaborating to develop a regional agreement to cap pollution from transportation fuels and invest in solutions that result in reduced emissions, cleaner transportation, healthier communities, and more resilient infrastructure. Massachusetts TCI participation will likely impact the RTAs in several ways, including vehicles, infrastructure, technology, and funding.

In December 2020, Massachusetts joined with Connecticut, Rhode Island, and the District of Columbia to be the first jurisdictions to launch a multi-state program to reduce pollution and invest $300 million per year in cleaner transportation choices and healthier communities.¹²

2.1.4 MBTA Fare Transformation

Several RTAs are located adjacent to MBTA and/or connect to MBTA commuter rail service. As such, some RTAs use MBTA's CharlieCard/CharlieTicket fare media, while other RTAs are considering it. Therefore, fare interoperability and the impact the MBTA Fare Transformation project will have on RTA fare media and fare collection will substantially impact the RTAs.

With MBTA embarking on a massive AFC 2.0 initiative, expected to launch in fall 2021, MassDOT has a generational opportunity to support a common fare structure Commonwealth-wide by providing RTAs with the capital resources and technical assistance to facilitate this common goal.

2.2 2020 Context

The year 2020 unfolded in a radically different manner than was anticipated. Because of the COVID-19 pandemic and the as-yet-unknown ways that the pandemic and its aftermath will permanently alter how, when, and where people travel, this CRTP process had to be flexible and RTAs will need to be nimble, data-driven, and performance-focused in responding to an uncertain future. To that end it will be critical for CCRTA to continue building a data-driven and performance-focused management and decision-making framework to lean into and respond to the rapid changes that are expected to continue to impact the future of the transit industry. This approach will position CCRTA for continued success.

2.2.1 COVID-19 Pandemic

Impacts to the transit industry from the COVID-19 pandemic include the following:

- Reduction of service due to diminished driver availability, social distancing requirements which can impose capacity constraints on transit vehicles, and reduced demand
- Loss of ridership due to business closures/disruptions, remote working and learning, increased popularity of online shopping, telemedicine due to safety concerns, and stay-at-home orders and advisories, which have depressed demand for discretionary, student, and work trips
- Temporary suspension of fare collection or fare collection enforcement along with rear-door boarding (for RTAs operating two-door vehicles)
- Implementation of employee protection measures, such as plexiglass shields and distribution of personal protective equipment (PPE)
- New rigorous public space cleaning protocols and the removal of seats and tables from transit facilities to discourage congregation

As a result of these impacts, ridership on systems around the country initially declined by up to 80 percent and has been slow to rebound (Figure 1).
Locally, CCRTA took the following actions to protect the workforce and riders while continuing to provide essential transit services:

- Social distancing encouraged on all buses
- On-board use of face masks and gloves
  - All drivers given gloves and masks and required to wear them at all times.
  - Masks are handed out to riders who need them.
- Temporary suspension of fare collection policies
- Clear plastic curtains and barriers installed between driver and rest of bus
- Additional vehicle and facility sanitation procedures including
  - All buses thoroughly sanitized daily with a “mold fogger” device.
  - Hand sanitizer and Lysol wipes available on all buses.
  - HTC and other facilities thoroughly sanitized twice a day.

At the height of the pandemic in April and May 2020, mirroring national results, CCRTA experienced approximately 80 percent year-over-year reduction in ridership. By September 2020, CCRTA had returned to regular off-season levels of service, with the fall schedule beginning to reflect some of the pre-COVID-19 service improvements that were put on-hold over the summer. Ridership began to rebound, though still below 2019 levels, and CCRTA was one of the first RTAs to resume collection of fares, starting on June 8, 2020. All other sanitation, social distancing, and other protective measures remain in effect.

CCRTA, which has historically had a lower reliance on fare revenue for its budget, is faring better from a fiscal standpoint than larger providers such as MBTA, which have had a much heavier reliance on fare revenue. Rather than focusing on an ever increasing fare revenue recovery as a goal, CCRTA may be better suited to fare recovery targets within bounds that reflect a diversity of revenue sources, such that the Authority is poised to weather a variety of adverse revenue conditions.
2.2.2 Federal Coronavirus Aid, Relief, and Economic Security (CARES) Act

CCRTA has been able to continue to mitigate the financial impacts of the pandemic through funding from the federal Coronavirus Aid, Relief, and Economic Security (CARES) Act. The CARES Act apportioned operating and capital funds for public transportation to mitigate lost revenue due to extreme ridership decline, the suspension of fare collection, the implementation of cleaning and protection protocols, and other related costs. The funding has been provided through the Federal Transit Administration (FTA) Section 5337 (capital – state of good repair), Section 5307 (urbanized area), and Section 5311 (rural areas) funding programs. For Massachusetts RTAs, a total of $213.4 million was apportioned through the CARES Act, including $19.5 million for CCRTA (an additional $9.9 million was allocated as a pass-through to the Steamship Authority).

2.3 Plan Considerations

Given all the previous work that led to the development of the CRTP and the unprecedented, transformational conditions during which the CRTPs were developed, the CRTP process necessarily evolved through 2020. Considerations for all RTAs include the following:

- The 5-year period prior to the 2020 pandemic year, fiscal year (FY) 2015 to FY 2019, was considered for recent historical trend analysis to understand how the systems were operating prior to the pandemic and to provide a baseline for understanding the market for transit service in each community.

- Rider, community, public, and stakeholder outreach was primarily conducted online. As with all transit planning processes, outreach is one component of many that go into the identification of needs, solutions, and recommendations.

2.3.1 Transit Demand and Economic Uncertainties

Notwithstanding pandemic-related disruptions, for many years transit ridership has been stagnant or declining nationally (Figure 2). This trend has accelerated in the past few years, with most systems – and bus transit in particular – experiencing steady declines in ridership. The American Public Transportation Association attributes the decline to four broad categories: erosion of time competitiveness, reduced affinity, erosion of cost competitiveness, and external factors. The erosion of time competitiveness is related to increasing traffic congestion and competing uses of street and curb space. Reduction in affinity refers to more competition for customer loyalty, and the erosion of cost competitiveness has to do with increasing costs without corresponding increase in demand for the service. And, finally, external factors are both the most challenging to define and to mitigate and include such things as policy changes that could improve transit usage but are too far-reaching for a transit agency alone to tackle.

It is uncertain whether the pre-pandemic downward trends in transit ridership in recent years combined with the pandemic's negative impact on transit ridership will become a longer term pattern that will continue to depress transit usage. Pandemic trends of particular concern to CCRTA include the reduction in tourism and discretionary travel and an increase in remote work and distance learning, all of which could significantly impact one or more of CCRTA's typical ridership markets. One area of opportunity is the possibility that typically seasonal Cape Cod residents may choose to live on the Cape year-round while working remotely; however, significant data analysis may be required to understand the transportation needs of this potential new market. In addition to the pandemic's impacts on ridership levels, long-term economic impacts and sustained levels of unemployment may change the landscape of where populations with limited transportation options reside.

For all transit systems including CCRTA, public concern about the health impacts of shared ride services will remain a challenge. While public transit has instituted mask-wearing requirements, cleaning protocols, social distancing, and other mitigation measures, systems will also have to continue to work to reassure riders about the public health safety of their services.

To monitor and lead into these trends and position the Authority for success, it will be critical for CCRTA to use data tools to routinely analyze key system performance metrics and make service and financial decisions within the context of a performance-focused framework.
3. Agency Overview

3.1 Transit Agency Background

CCRTA was established in 1976 to provide public transportation services to the Cape Cod region, also described as Barnstable County, Massachusetts. CCRTA is comprised of 15 member communities including the towns of Barnstable, Bourne, Brewster, Chatham, Dennis, Eastham, Falmouth, Harwich, Mashpee, Orleans, Provincetown, Sandwich, Truro, Wellfleet, and Yarmouth as illustrated on Figure 3.

CCRTA is governed by an advisory board, established in accordance with Massachusetts General Law Chapter 161B\(^{14}\) Section 5. The board is responsible for approving fare changes, substantial service changes, and CCRTA's annual budget. The CCRTA advisory board is comprised of 17 representatives, including the town manager/administrator or select board chair (or a designee) of each of the 15 member communities as well as appointed representatives from the “Disabled Commuter” and “Rider Community” populations. Each representative receives one vote plus additional vote shares calculated by statutory formula. Based on local assessments, the Town of Barnstable receives the highest vote share, equivalent to approximately 20 percent of the board’s votes. All board actions require a majority for approval. The advisory board meets approximately six times per year and has established an executive committee to address issues requiring attention between regular meetings. The CCRTA Advisory Board appoints an Administrator who oversees all CCRTA departments, as shown on Figure 4.

In 2019, CCRTA operated seven year-round and three seasonal fixed route services (including the partial route-deviated Flex) as well as ADA Paratransit Service, general public demand response (DART), Boston Hospital Transportation, and HST. In addition, CCRTA supplies mobility assistance program vehicles for services provided by Councils on Aging in the 15 member communities. CCRTA manages HST coordination among a network of contracted transportation providers. Fixed route and demand response services are delivered through a contract with MV Transportation. MV Transportation has been CCRTA's primary service contractor since 2011. CCRTA’s service contract with MV is up for renegotiation in September 2021.

CCRTA receives funding from several sources to finance the operation of transit service, including FTA, MassDOT, local assessments from member communities, farebox revenue, and other revenue sources such as parking, advertising, partnership, and contracts with other operating agencies. In 2019, CCRTA received an approximate funding of $26.5 million for its operation, including $10.5 million in federal and state funding. The FY 2020 capital budget includes $3.9 million in vehicle, infrastructure, and technology renovation and improvement costs.

3.2 Mission

CCRTA’s organizational mission statement is, “Our mission is to provide excellent customer service through efficient, reliable, safe, and affordable transit options to all of our customers and communities. To achieve this, we employ a mobility management approach to service delivery that has optimized the way we provide transportation to our many customers while making the agency more cost effective.”

\(^{14}\) https://malegislature.gov/Laws/GeneralLaws/PartII/TitleXXII/Chapter161B.
Figure 3. Location Map

*C CRTA bus routes reflect FY 2019 service levels consistent with performance evaluation metrics and do not include recent changes to the Hyannis Loop, Hyannis Crosstown, Hyannis Area Trolley, or Patriot Limited routes, described in Table 2.
3.3 Goals and Objectives

Several goal statements were identified in CCRTA’s 2015 CSA, published in December 2015. These included goals:

- To meet the mobility needs of residents, human service agency consumers, and visitors to Cape Cod
- To provide environmentally friendly transportation
- To deploy service in the most effective manner possible by continuing to provide transportation to those areas with the greatest demand – commercial areas, activity centers – and increasing service during periods of peak demand (summer months)

The service plans developed for this study continue to aim to satisfy these goals, and – as part of a subsequent study – will be further refined to reflect efforts to recover from the COVID-19 pandemic.

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The CCRTA service area covers all of Barnstable County, including the towns of Barnstable, Bourne, Brewster, Chatham, Dennis, Eastham, Falmouth, Harwich, Mashpee, Orleans, Provincetown, Sandwich, Truro, Wellfleet, and Yarmouth. In each community, the local Council on Aging provides mobility assistance for which CCRTA supplies vehicles. CCRTA operates, through contracts with MV Transportation and other transportation operators, fixed route/deviated fixed route, demand response, and HST services.

The sections that follow describe CCRTA’s representative transit services, including historical (FY 2015 to FY 2019) service levels as well as descriptions of recent service changes not related to the COVID-19 pandemic or temporary service reductions. Pandemic-related effects on service levels and ridership are described in more detail in Chapter 6.

4.1 Description of Existing Services

CCRTA currently operates 11 fixed routes, including 8 year-round routes and 3 seasonal trolley/shuttle services, as summarized in Table 2. Several routes including the Barnstable Villager, Hyannis Crosstown, and Hyannis Area Trolley offer limited route deviations to preset destinations upon request. The Flex route, which serves the Lower and Outer Cape, will make a maximum of two route deviations of up to ¾ mile, except in Provincetown, by reservation scheduled at least 2 hours in advance, Table 2 also includes, for reference, the Hyannis Loop. This fixed route service was discontinued in September 2019 and replaced by the Hyannis Crosstown, but is included in the 2019 performance data. The Hyannis Crosstown and Patriot Limited Routes are new services that are not fully included in 2015 to 2019 performance data.

DART is CCRTA’s demand response program and includes ADA paratransit, non-ADA demand response, and a Boston Hospital Transportation service. In addition, CCRTA recently launched SmartDART, an app-based demand response solution (similar to a “microtransit” service), as a pilot program in Barnstable. SmartDART is designed to be a shared ride, short-haul service that feeds rather than competes with the fixed route and offers free transfer to fixed route bus service. CCRTA typically provides over 290,000 contracted HST trips, many of which are included in the Authority’s demand response numbers. Approximately 100,000 HST trips each year are delivered as demand taxi. HST connects riders to medical appointments, adult day health, home care services, workshops, day habilitation, and early intervention programs. The service is fare-free to riders, but costs are fully reimbursed by the funding agency.

In addition, CCRTA operates the CapeFLYER through a contract with MBTA and MassDOT. CapeFLYER is a seasonal passenger rail service between South Station in Boston and the HTC with connections to MBTA Braintree, Brockton, and Middleborough/Lakeville stations with additional stops in Bourne, Buzzard’s Bay, and Wareham Village. This service operates Friday evenings to Sunday from Memorial Day weekend to Labor Day weekend. Operating costs and revenues associated with the route are included in CCRTA’s system-level financial profile, but are excluded from the service level, ridership, and performance metric summaries that follow. Although service metrics for CapeFLYER weekend seasonal service have not historically been reported for FY 2015 to FY 2019, this service may be incorporated into future reporting, especially if expanded to accommodate more weekday and/or off-season trip purposes. CCRTA operates a bus connection that meets arriving and departing trains at the Bourne Station for direct connections to Falmouth.
## Table 2. Service Overview

<table>
<thead>
<tr>
<th>Route</th>
<th>Service Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sealine</td>
<td>Bus – Fixed Route</td>
<td>Hyannis to Woods Hole via Mashpee and Falmouth along the Route 28 corridor.</td>
</tr>
<tr>
<td>WHOOSH***</td>
<td>Bus – Fixed Route Trolley</td>
<td>Peak season only. Falmouth Mall to Woods Hole Steamship Authority dock via Route 28 and Woods Hole Road. Runs parallel to Sealine in this high demand corridor.</td>
</tr>
<tr>
<td>Barnstable Villager</td>
<td>Bus – Fixed Route</td>
<td>Hyannis to the Courthouse Complex in Barnstable Village via Cape Cod Mall, Attucks Lane, Route 132 and Cape Cod Community College; trips to Barnstable Harbor on request</td>
</tr>
<tr>
<td>Hyannis Loop</td>
<td>Bus – Fixed Route</td>
<td>Discontinued September 2019 (replaced by Hyannis Crosstown). Circulates in two loops (clockwise and counterclockwise) between HTC, Cape Abilities, Cape Cod Mall, Capetown Plaza, Southwind Plaza, and Festival Mall via Barnstable Road, North Street, Main Street, Falmouth Road, Attucks Lane, and Independence Drive. Although the Hyannis Loop is no longer in operation it is included here for consistency with route and system performance metrics, which rely on data from 2019.</td>
</tr>
<tr>
<td>NEW - Hyannis Crosstown</td>
<td>Bus – Fixed Route</td>
<td>HTC to Independence Drive via North Street, West End Rotary, Bearses Way, and Cape Cod Mall.</td>
</tr>
<tr>
<td>H2O Line</td>
<td>Bus – Fixed Route</td>
<td>Hyannis to Chatham and Orleans via Route 28, Route 137, and Route 39.</td>
</tr>
<tr>
<td>Provincetown/ N. Truro Shuttle***</td>
<td>Bus – Fixed Route</td>
<td>Summer and shoulder season only. From MacMillan Pier (Provincetown) to North Truro Campgrounds via Shore Road (Route 6A) and Highlands Road.</td>
</tr>
<tr>
<td>Provincetown/ Beach Shuttle***</td>
<td>Bus – Fixed Route</td>
<td>Summer and shoulder season only. From MacMillan Pier (Provincetown) to Herring Cove Beach and Race Point Beach. During periods of high volume, run as two separate routes to each beach with each bus departing the pier every half hour; during lower volume periods run as a single counterclockwise loop via Province Lands Road and Race Point Road.</td>
</tr>
<tr>
<td>Flex</td>
<td>Bus – Fixed Route with limited route deviation</td>
<td>Harwich port to Provincetown via Route 137, Route 6A, and US 6. Flex buses will make a maximum of two deviations of up to ¼ mile, except in Provincetown, by reservation scheduled at least 2 hours in advance.</td>
</tr>
<tr>
<td>Hyannis Area Trolley***</td>
<td>Bus – Fixed Route</td>
<td>Summer season only. HTC to the JFK Museum, Hyannis Resort and Conference Center, Sea Street Beach, Kalmus Beach, Veterans Beach, and Bismore Park, operating in a modified counterclockwise loop via Main Street, West End Rotary, Sea Street, Gosdnold Street, and Ocean Street.</td>
</tr>
</tbody>
</table>
### Route and Service Information

<table>
<thead>
<tr>
<th>Route</th>
<th>Service Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bourne Run*</td>
<td>Bus – Fixed Route</td>
<td>Mashpee Common to North Falmouth and Buzzards Bay via Route 151, Route 28A, Country Road, Bourne Bridge, and Buzzards Bay Main Street.</td>
</tr>
<tr>
<td>Sandwich Line**</td>
<td>Bus – Fixed Route</td>
<td>HTC to Buzzards Bay Main Street via West Main Street, Race Lane/Farmersville Road, Quaker Meeting House Road, Route 130, and Scenic Highway.</td>
</tr>
<tr>
<td>NEW - Patriot Limited</td>
<td>Bus – Fixed Route</td>
<td>Limited Express service to Patriot Square retail center, across the street from South Dennis garage, from HTC and other locations. Transitions deadhead to revenue service with a $0 marginal cost increase.</td>
</tr>
<tr>
<td>CapeFLYER Bus Connection***</td>
<td>Bus – Fixed Route</td>
<td>Summer season only, when CapeFLYER is running. Connects with arriving and departing CapeFLYER trains, Friday-Sunday only for direct connections to Falmouth and the Upper Cape when train is running.</td>
</tr>
<tr>
<td>DART</td>
<td>Demand Response</td>
<td>Service umbrella includes ADA paratransit, non-ADA demand response, and Boston Hospital Transportation service.</td>
</tr>
<tr>
<td>NEW - Smart DART</td>
<td>Demand Response</td>
<td>App-based demand response pilot in Barnstable.</td>
</tr>
</tbody>
</table>

*Source: CCRTA*

*Bourne Run description reflects fall 2020 service changes. FY 2015 to FY 2019 service metrics reflect the previous routing with service terminating at Cranberry Plaza in Wareham.*

**Sandwich Line description reflects fall 2020 service changes. FY 2015 to FY 2019 service metrics reflect the previous routing (terminating at the Sagamore park and ride) and schedule (service every 2 hours)*

***Rows highlighted yellow are seasonal routes.***

Table 3 summarizes off-season span of service, and Table 4 shows seasonal service spans. During the off-season, most of CCRTA’s year-round routes operate Monday through Saturday, with the exception of the Bourne Run and the Sandwich Line, which only operate Monday through Friday. Two Provincetown shuttles operate Friday, Saturday, and Sunday for a limited “shoulder season” in late spring and early fall. Spans for routes operating out of the HTC are from approximately 5 AM to 9 PM on weekdays and 7 AM to 9 PM on Saturday; however, the Provincetown/North Truro Shuttle provides late night service to 12:30 AM on Fridays and Saturdays during the shoulder season.

### Table 3. Off-season Span of Service Hours

<table>
<thead>
<tr>
<th>Route</th>
<th>Weekday</th>
<th>Saturday</th>
<th>Sunday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sealine</td>
<td>5:30 AM – 9:10 PM</td>
<td>7:30 AM – 9:10 PM</td>
<td>N/A</td>
</tr>
<tr>
<td>Barnstable Villager</td>
<td>7:30 AM – 6:15 PM</td>
<td>8:30 AM – 6:15 PM</td>
<td>N/A</td>
</tr>
<tr>
<td>NEW - Hyannis Crosstown</td>
<td>7:00 AM – 5:50 PM</td>
<td>8:00 AM – 5:50 PM</td>
<td>N/A</td>
</tr>
<tr>
<td>H2O Line</td>
<td>5:45 AM – 9:00 PM</td>
<td>8:30 AM – 9:00 PM</td>
<td>N/A</td>
</tr>
</tbody>
</table>
Summer schedules on the Cape run from approximately mid-June to Labor Day (exact dates vary by year). During this period of peak tourism activity, CCRTA services run later into the evening, from approximately 5:30 AM to 12:30 AM 7 days a week. Most routes serving the southern shoreline (along Route 28) and north to Provincetown operate every day until at least 8:00 PM or later. In Hyannis, the Barnstable Villager and the Hyannis Crosstown operate earlier in the day, until approximately 6:00 PM after which in-town trips must be made using the Hyannis Area Trolley, which operates until 9:15 PM. Summer service is more limited in the northwestern part of the service area, where the Bourne Run and Sandwich Line operate Monday through Friday only until 7:40/7:50 PM.

**Table 4. Summer Span of Service Hours**

<table>
<thead>
<tr>
<th>Route</th>
<th>Weekday</th>
<th>Saturday</th>
<th>Sunday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sealine</td>
<td>5:30 AM – 10:30 PM</td>
<td>9:30 AM – 10:30 PM</td>
<td>9:30 AM – 10:30 PM</td>
</tr>
<tr>
<td>WHOOOSH</td>
<td>9:45 AM – 8:05 PM*</td>
<td>9:45 AM – 10:35 PM</td>
<td>9:45 AM – 8:05 PM</td>
</tr>
<tr>
<td>Barnstable Villager</td>
<td>7:30 AM – 6:15 PM</td>
<td>8:30 AM – 6:15 PM</td>
<td>8:30 AM – 6:15 PM</td>
</tr>
<tr>
<td>NEW - Hyannis Crosstown</td>
<td>7:00 AM – 5:50 PM</td>
<td>8:00 AM – 5:50 PM</td>
<td>8:00 AM – 5:50 PM</td>
</tr>
<tr>
<td>H2O Line</td>
<td>5:45 AM – 9:20 PM</td>
<td>8:30 AM – 9:20 PM</td>
<td>8:30 AM – 9:20 PM</td>
</tr>
<tr>
<td>Provincetown/N. Truro Shuttle**</td>
<td>7:00 AM – 12:30 AM</td>
<td>7:00 AM – 12:30 AM</td>
<td>7:00 AM – 12:30 AM</td>
</tr>
<tr>
<td>Provincetown Beach Shuttle **</td>
<td>9:00 AM – 12:00 AM</td>
<td>9:00 AM – 12:00 AM</td>
<td>9:00 AM – 12:00 AM</td>
</tr>
<tr>
<td>Flex</td>
<td>5:30 AM – 12:45 AM</td>
<td>5:30 AM – 12:45 AM</td>
<td>5:30 AM – 12:45 AM</td>
</tr>
</tbody>
</table>

*Rows highlighted yellow are seasonal routes.*
The majority of year-round fixed route services operate hourly, with the Sandwich Line operating every two hours, with some hourly service during school peak. Prior to fall 2020 service changes, the Bourne Run ran every 90 minutes and the Sandwich Line made 6 round trips a day at varying intervals. Revisions to those two routes now facilitate 20- to 40-minute headways in the corridor between Buzzards Bay and the Market Basket by the Sagamore Bridge, where both routes run in parallel. The Flex, which operates as a deviated route service, makes a trip once every 2 hours during the off-season and every hour during the summer. Seasonal trolleys operate at 30-minute frequencies when in service, as shown in Table 5.

**Table 5. Frequency of Service**

<table>
<thead>
<tr>
<th>Route</th>
<th>Weekday</th>
<th>Saturday</th>
<th>Sunday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sealine</td>
<td>Every 60 minutes</td>
<td>Every 60 minutes</td>
<td>Every 60 minutes (summer only, no service offseason)</td>
</tr>
<tr>
<td>WHOOOSH**</td>
<td>Every 30 minutes</td>
<td>Every 30 minutes</td>
<td>Every 30 minutes</td>
</tr>
<tr>
<td>Barnstable Villager</td>
<td>Every 60 minutes</td>
<td>Every 60 minutes</td>
<td>Every 60 minutes (summer only, no service offseason)</td>
</tr>
<tr>
<td>NEW - Hyannis Crosstown</td>
<td>Every 60 minutes</td>
<td>Every 60 minutes</td>
<td>Every 60 minutes (summer only, no service offseason)</td>
</tr>
<tr>
<td>H2O Line</td>
<td>Every 60 minutes</td>
<td>Every 60 minutes</td>
<td>Every 60 minutes (summer only, no service offseason)</td>
</tr>
<tr>
<td>Provincetown/Truro Shuttle**</td>
<td>Every 30 minutes</td>
<td>Every 30 minutes</td>
<td>Every 30 minutes</td>
</tr>
</tbody>
</table>
## Comprehensive Regional Transit Plan

### Cape Cod Regional Transit Authority

<table>
<thead>
<tr>
<th>Route</th>
<th>Weekday</th>
<th>Saturday</th>
<th>Sunday</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Provincetown Beach Shuttle</strong></td>
<td>Every 30 minutes</td>
<td>Every 30 minutes</td>
<td>Every 30 minutes</td>
</tr>
<tr>
<td>Flex</td>
<td>Every 2 hours offseason, every 60 minutes summer</td>
<td>Every 2 hours offseason, every 60 minutes summer</td>
<td>Every 60 minutes (summer only, no service offseason)</td>
</tr>
<tr>
<td><strong>Hyannis Area Trolley</strong></td>
<td>Every 30 minutes</td>
<td>Every 30 minutes</td>
<td>Every 30 minutes</td>
</tr>
<tr>
<td>Bourne Run</td>
<td>Every 60 minutes</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Sandwich Line*</td>
<td>Every 2 hours (hourly during school peak)</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>NEW - Patriot Limited</td>
<td>Limited trips</td>
<td>Limited trips</td>
<td>N/A</td>
</tr>
<tr>
<td>DART (including Boston Hospital Transportation service)</td>
<td>Variable schedule</td>
<td>Variable schedule</td>
<td>Variable schedule</td>
</tr>
<tr>
<td>NEW - Smart DART</td>
<td>Demand response</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: CCRTA

*Sandwich Line frequency reflects fall 2020 service changes. FY 2015 to FY 2019 service metrics reflect the previous schedule with service offered six times per day.

**Rows highlighted yellow are seasonal routes.

In addition to the route headways listed in Table 5, CCRTA purposefully staggers parallel routes, providing more frequent travel options between key locations as follows:

- **Hyannis Transportation Center to Cape Cod Mall**: Every 30 minutes on either the Hyannis Crosstown or Barnstable Villager
- **Harwichport to Orleans**: Every 40 minutes off season to every 30 minutes during the summer via either H2O or Flex
- **Woods Hole to Falmouth Mall**: Approximate 20-minute summer headways along Woods Hole Road/Locust Street, Falmouth Main Street (Falmouth Central Business District), and Route 28 where the WHOOSH and Sealine intersect to provide three trips every hour.
- **MacMillan Pier Provincetown to Highland Road North Truro**: Approximate 20-minute summer headways along Shore Road (Route 6A) where the Provincetown/North Truro Shuttle and Flex routes intersect to provide three trips every hour.
- **Hyannis Transportation Center to West End Rotary (westbound only)**: 20- to 25-minute summer headways along Hyannis Main Street (Hyannis Central Business District), where the Hyannis Area Trolley and Sandwich Line intersect to provide four westbound trips every 90 minutes.
- **Buzzards Bay Train Station to Belmont Circle**: 20- to 40-minute headways along Buzzards Bay Main Street where Bourne Run and Sandwich Line run in parallel.

Historical metrics for system-wide operating revenue sources for FY 2017 to FY 2019, including those associated with CCRTA's HST brokerage, are shown in Table 6. Over half of system operating revenue is directly generated by CCRTA from sources including fares, ticket and pass sales, commuter lot parking revenue, and HST brokerage revenue. Approximately 23 percent to
25 percent of revenue has historically come from federal Section 5307 and 5339 formula funding grants. An additional 17 percent from state sources and 7 percent from the local general fund is needed to maintain service.

### Table 6. Operating Funding Sources (FY 2017–FY 2019)

<table>
<thead>
<tr>
<th>Funding Source</th>
<th>FY 2017</th>
<th>%</th>
<th>FY 2018</th>
<th>%</th>
<th>FY 2019</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Federal</td>
<td>$6,548,155</td>
<td>25.4%</td>
<td>$6,190,564</td>
<td>23.7%</td>
<td>$6,138,633</td>
<td>23.2%</td>
</tr>
<tr>
<td>State</td>
<td>$4,440,656</td>
<td>17.2%</td>
<td>$4,351,575</td>
<td>16.7%</td>
<td>$4,407,638</td>
<td>16.6%</td>
</tr>
<tr>
<td>Local</td>
<td>$1,868,730</td>
<td>7.2%</td>
<td>$1,891,339</td>
<td>7.2%</td>
<td>$1,868,730</td>
<td>7.0%</td>
</tr>
<tr>
<td>Directly Generated*</td>
<td>$12,927,352</td>
<td>50.1%</td>
<td>$13,683,348</td>
<td>52.4%</td>
<td>$14,096,823</td>
<td>53.2%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>$25,784,893</td>
<td>100.0%</td>
<td>$26,116,826</td>
<td>100.0%</td>
<td>$26,511,824</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Source: NTD 2017-2018, CCRTA FY 2020 Budget

*Combines fare revenues and other own-source revenue streams.

Table 7 provides a more in-depth profile of directly generated revenue for FY 2019. As shown, when HST brokerage revenue is excluded, fares, parking, and other revenues represent approximately 13.7 percent of revenue sources.

### Table 7. Operating Funding Sources (FY 2019)

<table>
<thead>
<tr>
<th>Funding Source</th>
<th>Amount</th>
<th>% Total</th>
<th>% Excluding HST Revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Federal</td>
<td>$6,138,633</td>
<td>23.2%</td>
<td>42.6%</td>
</tr>
<tr>
<td>State</td>
<td>$4,407,638</td>
<td>16.6%</td>
<td>30.6%</td>
</tr>
<tr>
<td>Local</td>
<td>$1,868,730</td>
<td>7.0%</td>
<td>13.0%</td>
</tr>
<tr>
<td>Fares (Fixed Route and Demand Response)</td>
<td>$1,511,989</td>
<td>5.7%</td>
<td>10.5%</td>
</tr>
<tr>
<td>Fares (CapeFLYER)</td>
<td>$59,400</td>
<td>0.2%</td>
<td>0.4%</td>
</tr>
<tr>
<td>Hyannis Transportation Center Parking and Other Revenue</td>
<td>$408,916</td>
<td>1.5%</td>
<td>2.8%</td>
</tr>
<tr>
<td>HST Brokerage Revenues</td>
<td>$11,591,518</td>
<td>43.7%</td>
<td>N/A</td>
</tr>
<tr>
<td>HST Brokerage Management Fee and Incentive</td>
<td>$525,000</td>
<td>2.0%</td>
<td>N/A</td>
</tr>
<tr>
<td>TOTAL</td>
<td>$26,511,824</td>
<td>100.0%</td>
<td>N/A</td>
</tr>
</tbody>
</table>

### 4.2 Ridership and Service Operations

#### 4.2.1 Ridership

Historical FY 2015 to FY 2019 system ridership by mode is shown on Figure 5. Demand response ridership includes ADA paratransit trips as well as general purpose demand response (DART), HST, and Boston Hospital trips. As shown, just over half of annual ridership occurs on
bus, which is comprised of fixed route and deviated fixed route (Flex) services. FY 2020 ridership to date is considerably lower than historical trends as a result of the COVID-19 pandemic and has been excluded from this analysis.

Figure 6 illustrates system-wide ridership by month for the 2017 to 2019 calendar years. The peak season occurs between June and August, with some routes operating shoulder season schedules in May and September.

**Figure 5. Annual System Ridership Trends (2015–2019)**

Source: NTD 2015-2018, CCRTA

*Does not include CapeFLYER seasonal commuter rail or previously reported Plymouth and Brockton commuter bus service.
Annual and seasonal ridership by route is presented on Figure 7 and Figure 8, respectively. Annual totals reflect FY 2019 (July 2018 to June 2019), while seasonal data are presented for the time period of September 2018 to August 2019 to avoid reporting across a split peak season. A consistent presentation is used for all route-level seasonal data, including ridership, revenue hours, revenue miles, and select service metrics in Appendix A. Highest annual ridership is on the Sealine followed by the H2O and Flex routes. The Provincetown/Truro Shuttle has the fourth highest annual ridership and the highest ridership during the peak season.
Figure 7. Annual Bus Ridership by Route (FY 2019–FY 2020)

Source: CCRTA

*Data reflect Hyannis Loop and Hyannis Shuttle route alignments, which were replaced in FY 2020 by the Hyannis Crosstown and Hyannis Area Trolley, respectively.
Figure 8. Bus Ridership by Route and Season (FY 2019–FY 2020)

Source: CCRTA, September 2019 to August 2020

* Data reflect Hyannis Loop and Hyannis Shuttle route alignments, which were replaced in FY 2020 by the Hyannis Crosstown and Hyannis Area Trolley, respectively.

4.2.2 Service Levels

Table 8 summarizes annual revenue hours by mode for FY 2015 to FY 2019. As shown, there was a considerable increase in demand response revenue service hours beginning in FY 2017. In FY 2019, the majority (54 percent) of service hours were allocated to demand response, followed by bus (25 percent) and demand taxi (21 percent).

Table 8. Annual Revenue Hours (FY 2015–FY 2019)

<table>
<thead>
<tr>
<th>Service Type</th>
<th>FY 2015</th>
<th>FY 2016</th>
<th>FY 2017</th>
<th>FY 2018</th>
<th>FY 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bus</td>
<td>94,157</td>
<td>97,756</td>
<td>96,814</td>
<td>100,562</td>
<td>101,942</td>
</tr>
<tr>
<td></td>
<td>(25%)</td>
<td>(26%)</td>
<td>(24%)</td>
<td>(25%)</td>
<td>(25%)</td>
</tr>
<tr>
<td>Demand Response</td>
<td>187,683</td>
<td>185,081</td>
<td>210,725</td>
<td>226,433</td>
<td>224,582</td>
</tr>
<tr>
<td>(includes ADA)</td>
<td>(49%)</td>
<td>(49%)</td>
<td>(53%)</td>
<td>(55%)</td>
<td>(54%)</td>
</tr>
<tr>
<td>Demand Taxi</td>
<td>102,196</td>
<td>92,179</td>
<td>88,765</td>
<td>81,558</td>
<td>86,581</td>
</tr>
<tr>
<td></td>
<td>(27%)</td>
<td>(25%)</td>
<td>(22%)</td>
<td>(20%)</td>
<td>(21%)</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>384,036</strong></td>
<td><strong>375,016</strong></td>
<td><strong>396,304</strong></td>
<td><strong>408,553</strong></td>
<td><strong>413,105</strong></td>
</tr>
</tbody>
</table>

Source: NTD, 2015-2018, CCRTA

Percentages by mode may always not total 100% due to rounding.
Among fixed routes, revenue service hours are highest on the Sealine and H2O Line during the shoulder and off-seasons, and on the Flex route during the summer as shown on Figure 9.

**Figure 9. Bus Revenue Hours by Route and Season (FY 2019–FY 2020)**

Source: CCRTA, September 2018 to August 2019

* Data reflect Hyannis Loop and Hyannis Shuttle route alignments, which were replaced in FY 2020 by the Hyannis Crosstown and Hyannis Area Trolley, respectively.

Annual revenue miles by mode for FY 2015 to FY 2019 are summarized in Table 9. As shown, revenue miles for demand response and demand response taxi have decreased since 2015, while bus miles have increased slightly.

**Table 9. Annual Revenue Miles (FY 2015–FY 2019)**

<table>
<thead>
<tr>
<th>Service Type</th>
<th>FY 2015</th>
<th>FY 2016</th>
<th>FY 2017</th>
<th>FY 2018</th>
<th>FY 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bus</td>
<td>1,194,412 (19%)</td>
<td>1,227,173 (19%)</td>
<td>1,232,959 (21%)</td>
<td>1,245,720 (22%)</td>
<td>1,233,526 (21%)</td>
</tr>
<tr>
<td>Demand Response</td>
<td>3,820,649 (60%)</td>
<td>3,998,245 (61%)</td>
<td>3,426,691 (57%)</td>
<td>3,201,525 (56%)</td>
<td>3,249,810 (56%)</td>
</tr>
<tr>
<td>(includes ADA)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demand Taxi</td>
<td>1,353,895 (21%)</td>
<td>1,382,671 (21%)</td>
<td>1,331,464 (22%)</td>
<td>1,223,372 (22%)</td>
<td>1,285,343 (22%)</td>
</tr>
<tr>
<td>TOTAL</td>
<td>6,368,956</td>
<td>6,608,089</td>
<td>5,991,114</td>
<td>5,670,617</td>
<td>5,768,679</td>
</tr>
</tbody>
</table>

Source: NTD, 2015-2018, CCRTA

Percentages by mode may always not total 100% due to rounding.
Bus revenue miles are highest for the H2O Line, as shown on Figure 10. The Flex route requires the most revenue miles to operate during the peak season.

**Figure 10. Bus Revenue Miles by Route and Season (FY 2019–FY 2020)**

Source: CCRTA, September 2018 to August 2019

* Data reflect Hyannis Loop and Hyannis Shuttle route alignments, which were replaced in FY 2020 by the Hyannis Crosstown and Hyannis Area Trolley, respectively.

System operating costs, summarized in Table 10, steadily increased between FY 2015 and FY 2019, at a rate of approximately 3.4 percent per year. This trend is reinforced for both bus and demand response services. Costs for the CapeFLYER were highest in FY 2015.

**Table 10. Annual Operating Cost (FY 2015–FY 2019)**

<table>
<thead>
<tr>
<th>Service Mode</th>
<th>FY 2015</th>
<th>FY 2016</th>
<th>FY 2017</th>
<th>FY 2018</th>
<th>FY 2019*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bus</td>
<td>6,101,822</td>
<td>6,202,745</td>
<td>6,491,646</td>
<td>6,713,242</td>
<td>7,284,424</td>
</tr>
<tr>
<td></td>
<td>(27%)</td>
<td>(27%)</td>
<td>(26%)</td>
<td>(27%)</td>
<td>(27%)</td>
</tr>
<tr>
<td>Demand Response**</td>
<td>16,527,473</td>
<td>16,645,334</td>
<td>18,039,381</td>
<td>18,293,458</td>
<td>19,167,999</td>
</tr>
<tr>
<td></td>
<td>(72%)</td>
<td>(73%)</td>
<td>(73%)</td>
<td>(73%)</td>
<td>(72%)</td>
</tr>
<tr>
<td>CapeFLYER***</td>
<td>174,231</td>
<td>55,954</td>
<td>61,049</td>
<td>64,145</td>
<td>59,400</td>
</tr>
<tr>
<td></td>
<td>(1%)</td>
<td>(0%)</td>
<td>(0%)</td>
<td>(0%)</td>
<td>(0%)</td>
</tr>
<tr>
<td>TOTAL</td>
<td>$22,803,526</td>
<td>$22,904,033</td>
<td>$24,592,076</td>
<td>$25,070,845</td>
<td>$26,511,823</td>
</tr>
</tbody>
</table>

Source: NTD 2015-2018, CCRTA FY 2019 Budget

Percentages by mode may always not total 100% due to rounding.

* FY 2019 reflects budgeted amounts from CCRTA by mode plus a proportional allocation of $2,546,449 in operating reserves.

** Combines NTD demand response and demand taxi categories for FY 2015-FY 2018 and combines CCRTA DART and HST amounts for FY 2019.

*** CapeFLYER operates a limited seasonal schedule and is not reportable for federal funding purposes. Amounts shown reflect CCRTA FY 2015, FY 2016, FY 2017, FY 2018, and FY 2019 audited financial statements.
Table 11 summarizes FY 2019 service characteristics at the route level. Operating costs include budgeted amount by route plus a proportional allocation of operating reserves. Parking revenue is a system-level revenue source and is not included in route-level data. As shown, Sealine, H2O Line, and Flex have the highest operating cost among bus routes. Despite only being operated seasonally, the Provincetown/Truro Shuttle generates the highest fare revenue, followed by the Sealine and H2O Line routes. The Hyannis Shuttle (removed) and the Hyannis Area Trolley (new service) are free services and do not generate fare revenue.

Table 11. Operating Statistics by Fixed Route (FY 2019)

<table>
<thead>
<tr>
<th>Route</th>
<th>Ridership</th>
<th>Revenue Hours</th>
<th>Revenue Miles</th>
<th>Operating Cost</th>
<th>Fare Revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sealine</td>
<td>170,468</td>
<td>24,295</td>
<td>240,960</td>
<td>$1,591,292</td>
<td>$216,897</td>
</tr>
<tr>
<td>WHOOSH**</td>
<td>13,628</td>
<td>1,880</td>
<td>16,507</td>
<td>$232,765</td>
<td>$32,998</td>
</tr>
<tr>
<td>Barnstable Villager</td>
<td>42,900</td>
<td>8,134</td>
<td>69,731</td>
<td>$559,857</td>
<td>$65,472</td>
</tr>
<tr>
<td>Hyannis Loop*</td>
<td>25,340</td>
<td>7,958</td>
<td>72,637</td>
<td>$572,035</td>
<td>$43,707</td>
</tr>
<tr>
<td>H2O Line</td>
<td>145,483</td>
<td>22,422</td>
<td>300,588</td>
<td>$1,567,496</td>
<td>$210,231</td>
</tr>
<tr>
<td>Provincetown/Truro</td>
<td>82,056</td>
<td>6,070</td>
<td>53,061</td>
<td>$352,106</td>
<td>$246,467</td>
</tr>
<tr>
<td>Shuttle**</td>
<td>82,385</td>
<td>15,358</td>
<td>215,843</td>
<td>$1,318,779</td>
<td>$128,840</td>
</tr>
<tr>
<td>Flex</td>
<td>10,540</td>
<td>12,826</td>
<td>164,507</td>
<td>$568,765</td>
<td>$19,048</td>
</tr>
<tr>
<td>Bourne Run*</td>
<td>24,545</td>
<td>6,278</td>
<td>92,036</td>
<td>$430,091</td>
<td>$32,601</td>
</tr>
</tbody>
</table>

Total                  | 610,171   | 101,948       | 1,233,526     | $7,284,424     | $996,261     |

Source: CCRTA, 2019

* Data reflect Hyannis Loop and Hyannis Shuttle route alignments, which were replaced in FY 2020 by the Hyannis Crosstown and Hyannis Area Trolley, respectively. Route is a seasonal route.

**Rows highlighted yellow are seasonal routes.

4.3 Asset Management

CCRTA owns and operates the HTC in downtown Hyannis and the CCRTA Operations and Maintenance Facility in South Dennis. As shown in Table 12, both facilities have a Transit Economic Requirements Model (TERM) rating of 4. Maintenance activities are supported by a contract with MV Transportation, including 8 mechanics, 5 utility, 1 electrical, and 1 janitorial full-time equivalent positions. Operations staff includes 64 drivers, 11 dispatch, 12 supervisors/managers, 3 clerical, and 10 seasonal staff.

During summer and shoulder seasons, CCRTA also utilizes a bus parking lot at the National Park Service/Cape Cod National Seashore’s Highlands Center in North Truro for Outer Cape-based service. The lot is owned and maintained by the National Park Service, not CCRTA. CCRTA also utilizes a four-bay mini-hub at McMillian Pier in Provincetown, which serves as a hub of operations and connection point during the summer and shoulder seasons. The hub is owned and maintained by the Town of Provincetown.
Comprehensive Regional Transit Plan

Cape Cod Regional Transit Authority

Table 12. Facility Inventory Summary

<table>
<thead>
<tr>
<th>Facility Name</th>
<th>Type</th>
<th>Location</th>
<th>Value</th>
<th>Age</th>
<th>TERM</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hyannis Transportation Center</td>
<td>Passenger Facility</td>
<td>Hyannis</td>
<td>$4.33 M</td>
<td>16</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>CCRTA Operations and Maintenance Facility</td>
<td>Maintenance</td>
<td>Dennis</td>
<td>$5.67 M</td>
<td>13</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

Source: CCRTA

CCRTA proposed a performance target in its MOU to monitor the percent of transit facility energy demand covered by alternative energy sources. This measure reflects CCRTA’s commitment to reducing the carbon footprint of its facilities with capital investments in solar panels at both the HTC and Dennis Operations Center as well as a legacy wind turbine at its Dennis Operations Center. To date, installation of solar panels has increased the proportion of facility energy from renewable sources. While the full benefit of the solar panels had not been realized until July 2020 due to longer than anticipated utility negotiations, both sets of panels are now fully operational and CCRTA is in fact returning energy to the grid.

CCRTA’s revenue and non-revenue vehicle fleet is characterized in Table 13. Approximately 75 percent of revenue vehicles are cutaway bus. Cutaway bus and mini-van fleet are relatively new, with an average age of 4 years. The average age of buses is 8.6 years, and non-revenue fleet is 6.9 years on average. All fleet categories meet the agency’s performance targets for useful life benchmarks (ULB).

Table 13. Fleet Inventory Summary

<table>
<thead>
<tr>
<th>Vehicle Type</th>
<th>Total Number</th>
<th>Average Age</th>
<th>Average Mileage</th>
<th>Average Value</th>
<th>% at or past ULB</th>
<th>FY 2019 ULB Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bus</td>
<td>28</td>
<td>8.6</td>
<td>439,298</td>
<td>$475,000</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Cutaway Bus</td>
<td>100</td>
<td>4.1</td>
<td>76,322</td>
<td>$126,415</td>
<td>1%</td>
<td>10%</td>
</tr>
<tr>
<td>Mini-Van</td>
<td>7</td>
<td>4.0</td>
<td>99,487</td>
<td>$52,539</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Non-revenue Vehicles</td>
<td>10</td>
<td>6.9</td>
<td>65,457</td>
<td>$29,518</td>
<td>40%</td>
<td>50%</td>
</tr>
</tbody>
</table>

Source: CCRTA

In 2018, CCRTA’s contractors operated 192 bus, 73 demand taxi, and 45 demand response vehicles during maximum service. There were 206 bus, 73 taxi, and 45 demand response vehicles available for maximum service. This allows for a spare ratio of 6.8 percent on fixed routes and 15.6 percent on demand response services. Vehicles available for maximum service may not correspond with CCRTA’s reportable fleet, especially surrounding demand taxi services, due to the turnkey nature of these contracts. In addition, several Gillig buses, owned by the National Park Service and purchased in 2006 through a unique intergovernmental partnership, supplement CCRTA’s fixed route fleet.

In addition to the vehicles and facilities noted above, CCRTA maintains the following IT assets:

- Agency website
- Trapeze Group (and NextBus) for automatic vehicle locators (AVL), computer aided dispatch, and scheduling
- HB Softwar Solutions Annunciator for automated vehicle announcements
Comprehensive Regional Transit Plan  
Cape Cod Regional Transit Authority

- UTA automated passenger counters (APCs)
- Ranger mobile data terminals
- Motorola radio communications
- Seon on-board cameras and Stream-Sight facility surveillance
- Scheidt & Bachmann on-board fare collection system
- Route planning tools developed by Cape Cod Commission
- EasyBus maintenance tracking and asset/inventory management
- Custom SmartDART mobile payment system
- Peachtree accounting software

CCRTA has not yet incorporated any transit signal priority or automated fare collection for its demand response fleet.

Capital expenditures associated with replacement and expansion of CCRTA’s capital assets are summarized on Figure 11. Typical capital expenses are on the order of $3 to $5 million per year. Revenue for capital purchases is a mix of state and federal funds, with federal funding comprising up to 82 percent of revenues in FY 2018.

*Figure 11. Capital Expenditures (FY 2015–FY 2018)*
4.4 Policies and Procedures

On the public website,16 CCRTA maintains a list of policies and procedures related to using the service. These include:

- Accessibility Guidelines: Availability of ramps/lifts and language interpretation services
- Bike Policy: Size requirements and instructions for loading and unloading bike racks
- Pet Policy: Service animals and use of pet carrier
- Rules for Riding: Code of conduct regarding safe seating requirements, food, drink, noise, attire, and courteous behavior
- Reasonable Accommodations Policy

CCRTA also provides detailed procedures for reservations, cancellations, and passenger eligibility for its DART, ADA paratransit, and Boston Hospital Transportation services.


4.5 Regional Connections and Other Transit Providers

During the summer peak season, CCRTA connects to MBTA by way of its CapeFLYER service, which operates on a shared corridor with the Middleborough/Lakeville MBTA Commuter Line and connects with multiple MBTA services at the Braintree Station and South Station. In addition the Plymouth and Brockton and Peter Pan bus lines provide connections between CCRTA and the MBTA service area. Peter Pan Lines connect farther into greater Massachusetts, Rhode Island, Connecticut, and New York. CCRTA's Boston Hospital Transportation also provides a connection into the MBTA service area, though transfers may be limited due to the timing of scheduled trips. CCRTA connects with the Greater Attleboro-Taunton Regional Transit Authority (GATRA) OWL service at the Buzzards Bay Train Station, which is also the planned terminus for a future MBTA Commuter Rail pilot connection to South Station in Boston. CCRTA's enhanced Buzzards Bay service, which began revenue service September 8, 2020, features timed transfers to GATRA and the full GATRA service area from both the Bourne Run and Sandwich Line.

In addition to rail and bus transit, Cape Cod includes numerous ferry connections out of Hyannis, Falmouth, Woods Hole, and Provincetown. These ferries provide a variety of peak and off-season connections to Boston (MBTA), Plymouth (GATRA), and New Bedford (Southeastern Regional Transit Authority), as well as serving as the primary inland connection for Martha's Vineyard (Vineyard Transit Authority service area) and Nantucket (Nantucket Regional Transit Authority).

4.6 Fare Rates and Structure

CCRTA fixed route buses utilize electronic registering fareboxes, which scan passenger payments upon boarding and eliminate the need for drivers to handle cash or make change. Passengers are expected to have exact fare needed for their trip. Riders booking a DART, ADA, 16 http://www.capecodtransit.org/riding-ccrta.htm#rules
17 http://www.capecodtransit.org/dbe.htm
18 http://www.capecodtransit.org/public-records.htm
19 http://www.capecodtransit.org/title_vi.htm
20 http://www.capecodtransit.org/ada1.htm
or Boston Hospital Transportation trip in advance will be reminded to bring exact fare on the day of their scheduled trip. The 31-day passes can be bought from CCRTA drivers, at the Plymouth and Brockton ticket counter, or at the HTC.

In FY 2018, the majority (58.13 percent) of CCRTA fares were paid in cash. This is among the highest cash utilization rates in Massachusetts. CCRTA uses the CharlieCard, which is compatible with MBTA (and other participating RTA) fare collection, for stored value transactions. CharlieCard stored value can be used as fare on any participating system, and value can be added at any sales outlet, using MBTA's website, or by adding cash while boarding the bus. CCRTA day and multi-day pass products cannot be used to ride MBTA services. Customers traveling between service areas must have stored value or add MBTA pass products separately. In FY 2018, 34.73 percent of CCRTA fares were paid using CharlieCard smart card fare media.

The CCRTA fare structure is shown in Table 14. CCRTA offers a reduced fare to seniors over 60 with valid identification and to persons with disabilities who have a Transportation Access Pass CharlieCard or a Medicare Card. The reduced fare is 50 percent of the standard fare for all fixed route, Flex (deviated fixed route), and DART rides and passes. In addition, students with proof of enrollment may receive a single ride fixed route fare of $1.50, a 25 percent discount. Reduced fares are not offered on the ADA rate or Boston Hospital Transportation service.

CCRTA allows riders over age 60 to ride fixed route buses for free every Wednesday. Additionally, during the peak season, all riders can board the Hyannis Trolley free of charge and make free transfers from the WHOOSH Trolley from or to the Sealline.

### Table 14. Fare Structure

<table>
<thead>
<tr>
<th>Fare Type</th>
<th>Standard Fare</th>
<th>Reduced Fare</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Ride Fixed Route</td>
<td>$2.00</td>
<td>$1.00</td>
</tr>
<tr>
<td>Single Ride with off-route Flex</td>
<td>$4.00</td>
<td>$2.00</td>
</tr>
<tr>
<td>1-Day Pass Fixed Route and Flex</td>
<td>$6.00</td>
<td>$3.00</td>
</tr>
<tr>
<td>31-Day Pass Fixed Route and Flex</td>
<td>$60.00</td>
<td>$30.00</td>
</tr>
<tr>
<td>Single Ride DART</td>
<td>$3.00</td>
<td>$1.50</td>
</tr>
<tr>
<td>20-Ride Pass DART</td>
<td>$45.00</td>
<td>$22.50</td>
</tr>
<tr>
<td>ADA Rate</td>
<td>$2.50</td>
<td>$2.50</td>
</tr>
<tr>
<td>1-Way Trip Boston Hospital</td>
<td>$15.00</td>
<td>$15.00</td>
</tr>
<tr>
<td>Round Trip Boston Hospital</td>
<td>$30.00</td>
<td>$30.00</td>
</tr>
</tbody>
</table>

*Source: CCRTA*

### 4.7 Fare Policy

CCRTA's unofficial policy regarding fare increases has traditionally been for any fare adjustments to reflect full dollar increments to avoid change-making. As a result, fare changes have been rare, with the agency's last fare adjustment occurring in 2009. A completely free fare is not in line with agency needs, but CCRTA has explored offering a free fixed route fare to eligible paratransit riders to help incentivize use of the lower cost fixed route services when those routes meet a paratransit customer's needs.
In fulfillment of its MOU with MassDOT the CCRTA Board adopted a more formal fare policy on December 16, 2020. The policy states that CCRTA will review its fare structure and expected fare revenue annually as a component of the annual budget development process. Adjustments to the fare policy (if warranted, as determined by the Administrator and Advisory Board) will follow a public participation process and fare equity analysis in compliance with the FTA Circular 4702.1B and CCRTA's MOU with MassDOT. CCRTA's fare policy establishes the following goals for evaluating fare adjustments:

- Simplicity: Encourages continued use of dollar increments for fare adjustments.
- Encourage use of passes and account-based fares: While maintaining cash payment options for unbanked riders.
- Mode shift onto fixed route service: Encourages restructuring of fares to incentivize use of fixed route services instead of demand response where possible, including the possibility of allowing ADA-certified riders to ride fixed route services fare-free.
- Sustainable fare collection technology: Recommends use of traditional Diamond Manufacturing Inc. fareboxes coupled with SmartDART for account-based fare payment.

CCRTA does not plan to increase the level of technology of its fare collection equipment. Given the high cost relative to fares collected and the fact that CCRTA does not have the staffing required to manage a more complex fare payment system, CCRTA is interested in returning to a more cost-effective fare collection technology, such as traditional Diamond Manufacturing Inc. fareboxes, coupled with increased use of account-based fares, as piloted by SmartDART.
5. Market Evaluation

This chapter describes existing and projected socioeconomic characteristics of the area served by CCRTA.

5.1 Service Area Overview

Understanding the demographics can help explain changes in transit demand and support recommendations for changes in future transit service. Specifically, people living below the poverty level, households without vehicles, seniors, and disabled individuals typically rely on transit; changes in these demographics can provide insight into transit demand trends. The U.S. Census Bureau’s American Community Survey (ACS) and Longitudinal Employer-Household Dynamics (LEHD) program are the primary sources of demographic data used in this analysis and provide valuable indications of trends and projections.

5.2 Demographic Conditions

Demographic and socioeconomic statistics are important in transit planning to understand the potential transit markets that exist in an area. Population density is particularly important when evaluating a transit market. Population density maps can help identify where populations may be concentrated and where population distribution may be sparse. This can be particularly helpful in transit planning when considering how and where services can best meet the transportation needs of various populations. Population density in the region is mapped on Figure 12. In tracking population on Cape Cod, it is important to recognize that the service area’s effective population triples over the summer months. The analysis that follows relies on US Census Bureau demographic reporting, which counts people at the location where they reside “the most” over the course of the year. Therefore, only those residents that spend a majority or plurality of their time living on the Cape are included. In addition to seasonal vacationers and those with a summer home, the west-central portion of Cape Cod, around Sandwich and Mashpee, includes some military housing and the Barnstable County Corrections Facility, which may generate additional temporary settlement situations.

The highest densities in the CCRTA service area are concentrated along Route 28 between Falmouth and Dennis Port, with additional high-density areas in Buzzard’s Bay, downtown Provincetown, and Sandwich near Route 130 and Snake Pond Road. Approximately 61 percent of the CCRTA service area population and 75 percent of jobs are within ¾ mile of a fixed route.

Transit usage is frequently related to level of income, age, vehicle availability, and disability status. Income is a key determinant in the type of transportation used to commute. Households with lower incomes and those without a private vehicle are often more likely to be in need of public transportation options than people with higher incomes and those who can afford private transportation. Table 15 summarizes a variety of demographic statistics for the CCRTA service area compared to state and national trends.

The CCRTA service area includes a senior population (over age 65) of over 30 percent, almost twice that observed for the Commonwealth or United States. Population with a disability is close to the national average of approximately 13 percent. The CCRTA service area includes only 10.9 percent minority populations, compared to almost 40 percent nationally. The CCRTA service area also includes lower percentages of people living below the poverty level and households without a vehicle than the Commonwealth or nationally. Median household income within the CCRTA service area is approximately $69,000, between the national average and the average for Massachusetts. CCRTA observes a wide disparity between the poorest and richest residents of Cape Cod, especially among seasonal populations such as those with summer
homes on the Cape and a large migrant workforce, neither of whom are included in Census counts.

**Figure 12. Population Density**

*CCRTA bus routes reflect FY 2019 service levels consistent with performance evaluation metrics and do not include recent changes to the Hyannis Loop, Hyannis Crosstown, Hyannis Area Trolley, or Patriot Limited Routes, described in Table 2.*
Table 15. Demographic and Socioeconomic Profile

<table>
<thead>
<tr>
<th>Area</th>
<th>Median Household Income</th>
<th>Population Living Below Poverty (%)</th>
<th>Households without a Vehicle (%)</th>
<th>Persons Over 65 (%)</th>
<th>Minority Population (%)</th>
<th>Disabled Population (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCRTA Service Area</td>
<td>$68,902</td>
<td>7.6%</td>
<td>5.4%</td>
<td>30.7%</td>
<td>10.9%</td>
<td>12.8%</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>$79,835</td>
<td>10.0%</td>
<td>12.5%</td>
<td>16.5%</td>
<td>29.3%</td>
<td>11.6%</td>
</tr>
<tr>
<td>United States</td>
<td>$61,937</td>
<td>13.1%</td>
<td>8.5%</td>
<td>16.0%</td>
<td>39.8%</td>
<td>12.6%</td>
</tr>
</tbody>
</table>

Source: US Census Bureau ACS 2018

5.2.1 Age and Race

The percentages of CCRTA area population over age 65 and under age 18 are on in Figure 13 and Figure 14, respectively. Both groups can be characterized by a greater reliance on public transit for mobility. In addition, riders from both age groups often qualify for a free or reduced fare. CCRTA's fare policy is discussed in Section 4.7.

As shown on Figure 14, population over 65 resides primarily along the shoreline, north of Route 6A and south of Route 28, with the heaviest concentration along the northern peninsula between Dennis and Truro. Population under 18 tends to follow the inverse, as shown on Figure 14, with youth population most concentrated between Route 28 and Route 6A (non-beachfront neighborhoods), as well as North Truro. Provincetown has a lower percentage of both senior and youth age groups.

Minority population, shown on Figure 15, includes both racial and ethnic minority groups. CCRTA has a relatively low minority population compared to Massachusetts or the United States. Note that US Census Bureau youth and minority population data do not include the large seasonal workforce, which has a much greater representation of younger and minority or foreign workers than the greater population.

5.2.2 Socioeconomics

Median household income and the percentage of those living below the poverty level are used as measures for propensity to use transit. Work-trip market shares from the ACS show that as income rises the percentage of people using transit decreases. Automobile ownership is expensive, and as household incomes decline so does the likelihood of having access to a private vehicle. In addition, those who use transit for non-economic reasons may also be less likely to purchase a vehicle.

Figure 16 shows the percentage of people living below poverty for CCRTA area block groups. As shown, the highest concentrations of poverty exist in Bourne, Sandwich, Hyannis, Dennis Port, and parts of Wellfleet and Truro. The high poverty area shown in Sandwich and Bourne reflects a combination of lower overall densities and pockets of temporary housing facilities including RV parks, military housing, and the Barnstable County Corrections Facility. The impact of these locations on the US Census Bureau’s poverty calculations is dependent on the number of people who reside in this area for a majority or plurality of the year.

Median household income by block group is shown on Figure 17. As shown, low income areas exist in North Hyannis, in the western part of the county between Bourne and Sandwich, along US 6 between Wellfleet and Orleans, as well as the downtown centers of Chatham, Harwich, and Yarmouth. The highest income neighborhoods exist in western Falmouth, east Sandwich,
and northwestern Barnstable around the Great Marshes, western Brewster, and areas around Pleasant Bay.

**Figure 13. Senior Population**

Source: US Census Bureau ACS 2017

*CCRTA bus routes reflect FY 2019 service levels consistent with performance evaluation metrics and do not include recent changes to the Hyannis Loop, Hyannis Crosstown, Hyannis Area Trolley, or Patriot Limited Routes, described in Table 2.*
Figure 14. Youth Population

Source: US Census Bureau ACS 2017
*CCRTA bus routes reflect FY 2019 service levels consistent with performance evaluation metrics and do not include recent changes to the Hyannis Loop, Hyannis Crosstown, Hyannis Area Trolley, or Patriot Limited Routes, described in Table 2.
Figure 15. Minority Population

Source: US Census Bureau ACS 2017

*CCRTA bus routes reflect FY 2019 service levels consistent with performance evaluation metrics and do not include recent changes to the Hyannis Loop, Hyannis Crosstown, Hyannis Area Trolley, or Patriot Limited Routes, described in Table 2.
**Figure 16. Population Below Poverty Level**

Source: US Census Bureau ACS 2017

*CCRTA bus routes reflect FY 2019 service levels consistent with performance evaluation metrics and do not include recent changes to the Hyannis Loop, Hyannis Crosstown, Hyannis Area Trolley, or Patriot Limited Routes, described in Table 2.*
Figure 17. Median Household Income

Source: US Census Bureau ACS 2017

*CCRTA bus routes reflect FY 2019 service levels consistent with performance evaluation metrics and do not include recent changes to the Hyannis Loop, Hyannis Crosstown, Hyannis Area Trolley, or Patriot Limited Routes, described in Table 2.
Figure 18 illustrates the concentration of zero-vehicle households. Hyannis, Buzzards Bay, Dennis Port, Wellfleet, and Provincetown have the highest concentrations of households without a vehicle.

5.3 Employment

The trip to work is often the most frequent trip taken; therefore, employment characteristics are important factors in the discussion of public transportation. Large employers are commonly destinations for significant numbers of people, which make them important to transit service planning. Job density is shown on Figure 19. The highest densities for employment occur in Hyannis and downtown Falmouth. Approximately 75 percent of jobs in the CCRTA service area are located within ¾ mile of a CCRTA fixed bus route.

5.4 Local and Regional Travel Patterns

Major trip generators are locations frequented by a significant number of people, traveling by all modes, within the study area. Common transit generators include healthcare facilities, transportation hubs, schools and colleges or universities, shopping areas, social service agencies, and recreational areas. These generators must be considered when evaluating transit service for a region. Major trip generators for the CCRTA service area are shown on Figure 20.

5.5 Land Use and Growth

Land use planning for the Cape Cod region is overseen by the Cape Cod Commission, whose Regional Policy Plan states the growth policy for Barnstable County:

“Growth should be focused in centers of activity and areas supported by adequate infrastructure and guided away from areas that must be protected for ecological, historical, or other reasons. Development should be responsive to context while allowing for the restoration, preservation, and protection of the Cape's unique resources while promoting economic and community resilience.”

The Cape Cod Commission designates several districts within the CCRTA service area as Districts of Critical Planning Concern (DCPCs). DCPC status allows for the regulation of certain types of development in order to protect natural, coastal, scientific, cultural, architectural, archaeological, historic, economic, or recreational resources in the designated area. Several DCPCs call for growth management, and more specifically, the Bournedale and Eastham DCPCs recommend transportation management, which a strong transit network can support. The entire town of Barnstable and the Eastham DCPC are affordable housing resource districts. Transit can play a role in preserving affordable housing by connecting affordable housing to jobs through affordable transportation, and by helping to minimize land requirements for parking.

While much of Cape Cod utilizes sparse land use patterns and strip mall-type development that challenges efficient transit operations, the villages of Buzzards Bay and Hyannis are both designated by the Commission as Growth Investment Zones, which encourages transit-oriented development patterns. In addition, a total of 17 areas, inclusive of the 2 Growth Investment Zones, are designated as CACs, where future growth and development are to be targeted, presenting strong transit environments.

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21 Cape Cod Commission, https://www.capecodcommission.org/our-work/rpp
Figure 18. Zero-Vehicle Households

Source: US Census Bureau ACS 2017
*CCRTA bus routes reflect FY 2019 service levels consistent with performance evaluation metrics and do not include recent changes to the Hyannis Loop, Hyannis Crosstown, Hyannis Area Trolley, or Patriot Limited Routes, described in Table 2.
*CCRTA bus routes reflect FY 2019 service levels consistent with performance evaluation metrics and do not include recent changes to the Hyannis Loop, Hyannis Crosstown, Hyannis Area Trolley, or Patriot Limited Routes, described in Table 2.

Source: 2017 LEHD

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**Figure 19. Job Density**

Source: 2017 LEHD
Figure 20. Major Trip Generators

*C CRTA bus routes reflect FY 2019 service levels consistent with performance evaluation metrics and do not include recent changes to the Hyannis Loop, Hyannis Crosstown, Hyannis Area Trolley, or Patriot Limited Routes, described in Table 2.
5.6 Transit Score

The transit score map is created in order to spatially analyze several transit-oriented demographic and socioeconomic characteristics at the same time (the characteristics discussed individually in this chapter so far). The transit score is a relative measure of how successful a fixed route transit system is expected to be in a particular region. Used in conjunction with a congruency analysis of major transit generators, the transit score can be used to evaluate existing service as well as to identify areas of potential demand.

Demographic and socioeconomic information is collected from the US Census Bureau for a region divided into smaller geographic units such as tracts, block groups, or blocks. Block groups and census tracts were used for this analysis. Transit-oriented variables used for the analysis include:

- Overall population density
- Overall job density
- Density of the population under the age of 18
- Density of the population over the age of 65\(^{22}\)
- Percentage of the population living below the poverty level
- Percentage of zero-car households

The results of the transit score analysis are illustrated on Figure 21. As shown, the highest transit score is in greater Hyannis area. Other areas with high transit scores can be found in downtown Provincetown, Orleans, Chatham, Harwichport, Dennis Port, South Yarmouth, and Teaticket. All areas with a transit score of “Very High” are served by a CCRTA fixed route bus connection.

\(^{22}\) Note that the federal definition of senior as aged 65 or over is used in this case, but age in relation to transportation need is more nuanced than a strict age cutoff implies. In 2017, Governor Baker signed Executive Order 576 establishing the Governor’s Council to Address Aging in Massachusetts. As part of this effort, the Council looked at different methods and solutions to create an age-friendly Commonwealth and conducted research and listening sessions across the state, during which transportation was identified as a key challenge facing older adults. Additionally, research presented from this effort showed a trend toward people staying in the workforce longer than previous generations. This research shows that the topic of transportation for older adults is one that is evolving and will require more attention in transportation planning in the future.
**Figure 21. Transit Score**

*CCRTA bus routes reflect FY 2019 service levels consistent with performance evaluation metrics and do not include recent changes to the Hyannis Loop, Hyannis Crosstown, Hyannis Area Trolley, or Patriot Limited Routes, described in Table 2.*
6. **Performance Monitoring**

Performance-focused management is a critical priority for the Commonwealth and regional transit providers. The federal government has also led the transportation industry to become more performance-driven in the last decade by mandating that federally funded agencies implement a performance-based approach to planning and programming. This broad emphasis on having a strong enterprise-wide, data-driven and transparent performance management framework as the foundation for making decisions is especially relevant in addressing the challenges of COVID-19 and other market uncertainties.

The purpose of this chapter is to outline CCRTA’s current performance measurement practices, track performance results for the CCRTA/MassDOT Bilateral MOU, and make recommendations supporting data-driven and performance-focused decision making. Historical performance information and a review of peer agencies are included in Appendix A.

### 6.1 Current Performance Measurement Practices

CCRTA has developed a detailed performance measurement system informing their decision-making processes. CCRTA's system for performance monitoring includes:

- Periodic reporting of a broad range of performance results to its Advisory Board and federal and state funding partners
- Commitment to tracking and reporting key metrics to MassDOT under the bilateral 2-year MOU that CCRTA signed with MassDOT in August 2019
- Transparent sharing of performance results with the public, through performance summaries made available on CCRTA’s website

On its public website, CCRTA has published a performance dashboard for fixed route and demand response services. This dashboard includes a 4-page performance report on its website showing month-to-month operating statistics, including the following fixed route and demand response metrics:

- Monthly ridership (year over year)
- Vehicle revenue hours (year over year)
- Vehicle revenue miles (year over year)
- Percentage of scheduled trips operated
- Preventable accidents
- Miles between road calls

### 6.1.1 State and Federal Monitoring Requirements

CCRTA reports a variety of performance metrics to both FTA and the Commonwealth on a monthly, quarterly, and annual basis as part of their funding agreements. Summary performance metrics that CCRTA has tracked and reported to MassDOT through the GrantsPlus and asset data systems over the FY 2015 to FY 2019 time period are displayed in Appendix A. FTA requires transit providers that receive federal funding to submit data (including service, financial, and asset inventory and condition) both monthly and annually to be submitted to the NTD.
6.1.2 Performance Metrics and Targets from MassDOT Memorandum of Understanding

New to CCRTA’s performance monitoring obligations is a commitment to monitor and report on a selection of performance metrics, baselines, and targets established by CCRTA and MassDOT in the categories of ridership, customer service and satisfaction, asset management, and financial performance. This commitment is contained in a bilateral MOU signed by CCRTA and MassDOT in August 2019. The MOU states that CCRTA’s performance is to be measured by comparing established baselines against FY 2020 and FY 2021 targets. With a few exceptions, the baselines are averages of data collected in FY 2016 to FY 2018. The performance measures included in the CCRTA MOU, along with their baselines and targets, are in Table 16.

Table 16. FY 2021 Performance Measure Targets in the MOU

<table>
<thead>
<tr>
<th>Metric</th>
<th>FY 2018 Baseline</th>
<th>Percent Change</th>
<th>FY 2021 MOU Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unlinked passenger trips (fixed route)</td>
<td>614,144</td>
<td>2.0%</td>
<td>626,427</td>
</tr>
<tr>
<td>Stretch Goal</td>
<td></td>
<td>4.0%</td>
<td>638,710</td>
</tr>
<tr>
<td>Unlinked passenger trips (demand response)</td>
<td>457,105</td>
<td>0.0%</td>
<td>457,105</td>
</tr>
<tr>
<td>Unlinked passenger trips (system)</td>
<td>1,165,140</td>
<td>1.0%</td>
<td>1,176,791</td>
</tr>
<tr>
<td>UPT/VRH (fixed route)</td>
<td>6.13</td>
<td>2.0%</td>
<td>6.25</td>
</tr>
<tr>
<td>UPT/VRH (demand response)</td>
<td>2.02</td>
<td>2.0%</td>
<td>2.06</td>
</tr>
<tr>
<td>UPT/VRH (system)</td>
<td>2.86</td>
<td>2.1%</td>
<td>2.92</td>
</tr>
<tr>
<td>Passenger Miles Travelled (fixed route)</td>
<td>8,404,114</td>
<td>2.0%</td>
<td>8,572,196</td>
</tr>
<tr>
<td>Passenger Miles Travelled (demand response)</td>
<td>1,512,781</td>
<td>0.0%</td>
<td>1,512,781</td>
</tr>
<tr>
<td>Passenger Miles Travelled (system)</td>
<td>10,385,755</td>
<td>1.5%</td>
<td>10,541,541</td>
</tr>
<tr>
<td>On-time Performance (fixed route)</td>
<td>67.30%</td>
<td>1.5%</td>
<td>68.30%</td>
</tr>
<tr>
<td>On-time Performance (demand response)</td>
<td>92.55%</td>
<td>1.1%</td>
<td>93.55%</td>
</tr>
<tr>
<td>Percentage of CACs Served (fixed route)</td>
<td>90%</td>
<td>11.1%</td>
<td>100%</td>
</tr>
<tr>
<td>Revenue Vehicles meeting TAM Plan ULBs (system)</td>
<td>FY 2018 TAM Plan</td>
<td>N/A</td>
<td>Meets/Doesn’t Meet</td>
</tr>
<tr>
<td>Reportable Equipment meeting TAM Plan ULBs (system)</td>
<td>FY 2018 TAM Plan</td>
<td>N/A</td>
<td>Meets/Doesn’t Meet</td>
</tr>
<tr>
<td>Facilities meeting TAM Plan ULBs (system)</td>
<td>FY 2018 TAM Plan</td>
<td>N/A</td>
<td>Meets/Doesn’t Meet</td>
</tr>
<tr>
<td>Percentage of Facility Energy from Alternative Sources (system)</td>
<td>5%</td>
<td>1700.0%</td>
<td>90%</td>
</tr>
<tr>
<td>Farebox Recovery (fixed route)</td>
<td>17.20%</td>
<td>2.9%</td>
<td>17.70%</td>
</tr>
</tbody>
</table>
## Comprehensive Regional Transit Plan

### Cape Cod Regional Transit Authority

<table>
<thead>
<tr>
<th>Metric</th>
<th>FY 2018 Baseline</th>
<th>Percent Change</th>
<th>FY 2021 MOU Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farebox Recovery (demand response)</td>
<td>21.36%</td>
<td>2.3%</td>
<td>21.86%</td>
</tr>
<tr>
<td>Farebox Recovery (system)</td>
<td>18.26%</td>
<td>2.7%</td>
<td>18.76%</td>
</tr>
<tr>
<td>Operating Cost/ VRH (fixed route)</td>
<td>$60.83</td>
<td>4.9%</td>
<td>$63.84</td>
</tr>
<tr>
<td>Operating Cost/ VRH (demand response)</td>
<td>$23.95</td>
<td>4.9%</td>
<td>$25.13</td>
</tr>
<tr>
<td>Operating cost/ VRH (system)</td>
<td>$35.28</td>
<td>5.0%</td>
<td>$37.03</td>
</tr>
<tr>
<td>Own Source Revenue as percentage of Operating Budget</td>
<td>2.53%</td>
<td>118.6%</td>
<td>5.53%</td>
</tr>
<tr>
<td>FTA Apportionment Increases</td>
<td>$8,207,213</td>
<td>5.0%</td>
<td>$8,617,574</td>
</tr>
<tr>
<td>Stretch Goal: Percent service operating 30-minute headway or better (fixed route)</td>
<td>8.3%</td>
<td>101.2%</td>
<td>16.7%</td>
</tr>
<tr>
<td>Stretch Goal: Jobs in 10-minute walk (fixed route)</td>
<td>28,288</td>
<td>2.5%</td>
<td>28,995</td>
</tr>
</tbody>
</table>

Source: MassDOT, CCRTA 2019 MOU

*Demand response targets are assumed to be inclusive of HST demand response metrics, which CCRTA reports together with general purpose demand response and ADA paratransit. Demand taxi is not included in the demand response metrics but is part of the system total.*

### 6.1.3 How CCRTA’s Market Has Been Affected by COVID-19

When initially negotiated, MOU targets reflected the reasonable expectation that CCRTA could improve upon the identified baselines for the period of FY 2020 through FY 2021. Through the first and second quarter of FY 2020, CCRTA had been performing relatively well against most of its service effectiveness and financial efficiency metrics (Figure 22 through Figure 24).

However, the COVID-19 pandemic has impacted and continues to impact CCRTA through the fourth quarter of FY 2020. Months into the pandemic, the transit industry is still trying to understand what the “new normal” will look like. Transit providers are uncertain how many former customers will return (ridership has dropped as much as 80 percent in some systems) and what that timeline looks like. They are also grappling with how to ensure a safe workplace and retain employees as the risk associated with transit operations (and driving a transit vehicle in particular) has gone up significantly since March 2020.

After the outbreak became widespread in Massachusetts in mid-March 2020, many institutions and industries that fuel the region’s economy, contributing to CCRTA’s ridership, have been severely altered for the foreseeable future. Some of the most significant include:

- National and international travel restrictions impacting ability to hire seasonal staff
- Virtual and hybrid learning at Cape Cod Community College and the region’s public schools
- Closure of the Barnstable County Courthouse
- Temporary closure of several public beaches, parks, and golf courses
- Reduced ferry services between Wood’s Hole and Martha’s Vineyard
- Cancelation of Bear Week in Provincetown

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AECOM 53
- Cancelation of Beach Road Weekend Music Festival
- Wood’s Hole Science Aquarium closed to the public
- Closure of the Barnstable Adult Community Center and reduction of senior activities and services provided by area Councils on Aging

These institutions and events are not only major trip generators, but they also drive thousands of people to Cape Cod restaurants, hotels, and resorts, contributing significantly to area employment and the local budgets that comprise a significant portion of CCRTA’s funding. As the timeline for eradicating the virus and the impact that pandemic-related trends (such as increased telework, distance learning, telemedicine, and online shopping) could have on future transit demand are extremely uncertain, CCRTA will need to be flexible in its ability to adjust service according to demand and funding availability. Access to ridership data that are detailed and readily available is imperative to CCRTA’s ability to both maintain lifeline service and transport essential workers.

Figure 22 shows FY 2020 ridership information for CCRTA compared to an FY 2019 baseline. At the beginning of the fiscal year, CCRTA was exceeding FY 2019 month-over-month ridership. Restrictions to travel and stay at home orders related to COVID-19 began in March, and ridership levels fell immediately. Losses were most dramatic in May and June (21 percent and 23 percent of FY 2019 levels, respectively) as CCRTA seasonal ridership is driven in large part by tourism and associated seasonal employment. June was characterized by a slight recovery, but ridership remained low at 35 percent of FY 2019 levels. During this time, CCRTA had suspended fare collection in an effort to allow more social distancing between its drivers and customers. Lower ridership and suspension of fare collection combine such that CCRTA’s productivity and financial efficiency performance metrics are not comparable to MOU targets during this time. This trend of depressed ridership has continued into FY 2021.

**Figure 22. FY 2020 COVID-19-related Ridership Loss**

![Ridership Loss Diagram](chart.png)

Source: CCRTA, MassDOT FY 2020 RTA Service Report

Figure 23 shows FY 2020 performance for UPTs per VRH, as a percentage of the FY 2020 MOU targets. The first quarter of FY 2020 had been especially strong, with fixed route performance more than double targets in July and August. Both fixed route and demand response productivity remained near or above the FY 2020 target throughout the first and
second quarters. Demand response productivity remained above the MOU targets in the third quarter, as fixed route performance began to decline. In the fourth quarter, as pandemic-related ridership impacts were reaching their lowest levels in April, fixed route productivity fell to below 50 percent of targets, but rebounded somewhat in May and June as a result of temporary service on lower productivity routes. Demand response productivity declined more slowly, but steadily, reaching its lowest point in June. However, as a result of CCRTA’s strong performance throughout the first half of the year, average annual productivity for FY 2020 was 8.6 passengers per hour for fixed routes and 2.3 passengers per hour for demand response, approximately 42 percent and 16 percent above targets, respectively.

**Figure 23. FY 2020 Service Effectiveness Metrics Relative to Targets**

![Figure 23. FY 2020 Service Effectiveness Metrics Relative to Targets](image)

Source: CCRTA, MassDOT FY 2020 RTA Service Report

FY 2020 costs per revenue hour, as a percentage of FY 2020 MOU targets, are shown in Figure 24. Fixed route and demand response costs per revenue behaved as expected throughout the first and second quarters. Demand response costs per hour began to rise the most quickly, starting in March following the stay-at-home-orders and rising to more than six times the MOU targets in April. Bus costs per revenue hour were more modestly impacted, reaching a high of $176 per revenue hour, approximately three times the MOU targets.

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CCRTA is a very seasonal service, and as such, fixed route financial efficiency tends to be best in the summer, when administrative costs can be spread out across more service hours provided. Demand response costs tend to be lower in the winter, as total hours of service aren’t as seasonal for demand response and winter is less impacted by seasonal labor costs and overtime.
6.2 Considerations for the Next 5 Years: Moving to a Data-Driven Performance-Focused Decision-Making Framework

Building on CCRTA’s current performance management practices, there are some critical enhancements in data collection and performance measurement that CCRTA should adopt over the next 5 years. These changes support an enterprise-wide decision-making process guided by data and performance. Ultimately, adopting a data-driven performance-focused decision-making framework will aid in the navigation of the uncertainties brought on by COVID-19 and other market trends.

6.2.1 Data

The first critical need that CCRTA should fulfill to enhance performance management is in the area of data collection and evaluation. While CCRTA collects, analyzes, and reports performance data, the Authority would greatly benefit from strengthening its data collection tools to better support performance-driven decision making. It will be critical for CCRTA to evaluate its data collection and evaluation tools and invest in technology driven solutions to provide real-time information on key system indicators and establish key metrics that will best inform Authority decisions, particularly in the service planning, cost control, and financial business lines.

Principals for data evaluation include:

- **Data Collection**: A transit agency must have the data collection systems in place from which to draw the information for making decisions. These systems can be automated, such as APCs, or drawn from manual observations or samples. Validation of the information collected is a crucial aspect of data-driven decision making. As transit
operations equipment has become more technologically sophisticated, vast amounts of operations data have become available to service providers. Authorities should have technology-driven data analysis tools and strategies that ensure that the data collected facilitate CCRTA’s reporting requirements and inform operations, service, and financial planning.

- **Data Analysis**: Transit operators have ample data produced on a daily or even hourly basis from the systems used to deliver service. Information from AVLs, APCs, fareboxes, phone systems, and other technology can be voluminous, and having appropriate levels of data analysis capacity is essential to distilling the information into key decision-driving reports. CCRTA already has a strong data foundation to build on as fixed route vehicles are equipped with APC systems and Trapeze AVL with NextBus capabilities. APC systems facilitate consistent and more easily collected ridership data across its bus routes and stops, enabling ridership and efficiency performance comparisons. A reliable AVL system can also be used to help monitor and isolate on-time performance issues. Traffic on the Cape is notoriously hard to predict in advance, leading to schedule adherence issues for CCRTA that vary from one day to the next. However, by retaining and carefully tracking detailed AVL records of stop arrival times, travel speeds, and mid-route dwell times, CCRTA may establish patterns to help identify potential schedule disruptions before they become unmanageable. CCRTA should continue to monitor, analyze, and apply the data collected through its APC and AVL technology to facilitate review of performance metrics for every route and stop.

6.2.2 Performance Metrics

CCRTA should continue to assess its performance metrics and identify a select group of key enterprise-wide measures that will support data-driven performance-focused management of the system. It is important for CCRTA to keep in mind that performance measures should be:

- Easily measurable with realistic aspirational targets that will lead to successful outcomes
- Inclusive of thresholds for corrective actions
- Clear and intuitive to transit staff as well as to non-transportation professionals
- Acceptable and useful to transportation professionals
- Comparable across time and between geographic areas
- Reported on a regular schedule (monthly, quarterly, or annually), depending on state and federal requirements and the nature of the data
- Functionally related to actual system operations so that changes are reflected with minimal lag time in operating statistics
- A cost-effective means of data collection
- Based on statistically sound measurement techniques, where appropriate
- Consistent with measures identified for other systems
- Readily available, when possible, to facilitate flexibility and agility in service planning
- Framed around actionable language, setting thresholds when additional analysis or service changes are warranted

These principles have informed the following analysis of performance recommendations and strategies, guiding the development of the recommendations at the end of this chapter.

CCRTA should also create actionable guidelines for the performance metrics they regularly report that reflect the variety of potential future transit conditions.
CCRTA’s 2015 CSA did not identify thresholds for decision-making around when to add new services. When evaluating new services, guidelines should consider both the characteristics of the area requesting service as well as the overall landscape for transit. Low-density areas may be less desirable as candidates for new service during depressed system ridership conditions, such as those experienced during the COVID-19 pandemic. High-density areas may also warrant a range of appropriate service levels: for example, they may still require that basic service needs be met during depressed ridership conditions such as those during the pandemic, while nonetheless accommodating enough capacity to ensure social distancing as ridership recovers. Table 17 provides recommendations for new service thresholds.

### Table 17. Recommended New Service Thresholds

<table>
<thead>
<tr>
<th>Jobs and Population per Square Mile</th>
<th>Service Thresholds (Low Ridership)</th>
<th>Service Thresholds (High Ridership)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 2,000</td>
<td>No service</td>
<td>Alternative modes*</td>
</tr>
<tr>
<td>2,000-3,000 (in reasonable proximity to existing CCRTA facilities)</td>
<td>Limited scheduled trips per day or alternative modes*</td>
<td>120-minute headways or peak only service</td>
</tr>
<tr>
<td>3,001-6,500 (in reasonable proximity to existing CCRTA facilities)</td>
<td>Limited scheduled trips per day</td>
<td>60-minute headways</td>
</tr>
<tr>
<td>6,501-16,000</td>
<td>30/60-minute headways by time of day or trunk</td>
<td>30-minute headways</td>
</tr>
<tr>
<td>Over 16,000</td>
<td>30-minute headways</td>
<td>15-minute headways</td>
</tr>
</tbody>
</table>

* Indicates that CCRTA should weigh the potential for demand response, microtransit, commuter express, or other modes to meet transportation needs in an area not conducive to traditional fixed route service.

CCRTA’s 2015 CSA did not identify thresholds for when corrective actions (such as more extended analysis or service changes) should be undertaken for underperforming routes. As post-pandemic ridership stabilizes, it will be important to establish and implement thresholds for corrective actions in order to simplify service planning and boost transparency of the decision-making process, especially in the event of sustained funding shortages or ridership loss following the pandemic. Table 18 summarizes metrics that are already monitored by CCRTA and lend themselves to quantitative thresholds. The identified thresholds for corrective action for each metric represent a synthesis of historical performance (documented in Appendix A), COVID-19 impacts on performance, and the aspirational goals identified in the MOU.
Table 18. Recommended Service Correction Thresholds

<table>
<thead>
<tr>
<th>Service Threshold</th>
<th>In-town Bus and Seasonal Trolleys</th>
<th>Intercity Connectors</th>
<th>Zone-Based</th>
<th>Potential Corrective Action(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passengers per hour</td>
<td>10</td>
<td>6</td>
<td>4.5</td>
<td>Route realignment, schedule adjustments, reclassification</td>
</tr>
<tr>
<td>Transit investment per passenger</td>
<td>Above 150% of system average</td>
<td>$8</td>
<td></td>
<td>Route or schedule adjustments, zone- or distance-based fares, alternate revenue stream</td>
</tr>
<tr>
<td>Farebox recovery (excluding periods of fare suspension and fare-free shuttles)</td>
<td>8%</td>
<td>12%</td>
<td>10%</td>
<td>Route or schedule adjustments, zone- or distance-based fares, alternate revenue stream</td>
</tr>
<tr>
<td>Cost per revenue hour</td>
<td>Above 150% of system average</td>
<td>Above fixed route average</td>
<td></td>
<td>Route realignment/turnbacks, layover adjustments, labor/overtime allocation</td>
</tr>
<tr>
<td>On-time performance</td>
<td>90%</td>
<td>90%</td>
<td>N/A</td>
<td>Schedule analysis, recovery time adjustments, capital improvements</td>
</tr>
<tr>
<td>Miles between road calls</td>
<td>10,000</td>
<td>10,000</td>
<td>20,000</td>
<td>Vehicle reassignment, preventive maintenance</td>
</tr>
<tr>
<td>Accidents per 100,000 miles</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>Route safety analysis and realignment, operator training</td>
</tr>
</tbody>
</table>

It is recommended that CCRTA continue to monitor and adjust service evaluation thresholds in light of new data reflecting the pandemic, with updates occurring at least every 5 years (in conjunction with CCRTA’s 5-year CRTP updates). In addition, as CCRTA and MassDOT develop and refine performance targets for future MOU, additional consideration should be given to making sure targets are measurable and based on easily gathered information. One example is the FY 2021 MOU goal regarding number of jobs within a 10-minute walk of a CCRTA fixed route. As written, this goal is difficult to quantify due to variability in how jobs are reported as well as what constitutes a 10-minute walk. To collect this data, CCRTA relies on the Cape Cod Commission, which uses ESRI Business Analyst data. Information regarding job density is readily available through the LEHD ‘on the map’ application (see Section 5.3) but does not pinpoint the exact location of jobs in order to preserve confidential employer information. The Commonwealth of Massachusetts also maintains a list of major employers, including Barnstable County. However specific location data are only available for the top 200 employers. In order to more effectively track job access by fixed route, it is recommended that CCRTA redefine this metric upon expiration of the current MOU. A similar goal could be measured as:

- The percentage of Barnstable County top 200 major employment locations within a fixed linear distance of CCRTA routes
- The ratio of LEHD job estimates within a fixed linear buffer around CCRTA fixed routes to LEHD job estimates for Barnstable County
6.2.3 Expand Public Transparency

CCRTA's website includes an “Open Government” page that includes annual payroll, audited financial statements, a budget preview for the next fiscal year, and a performance measures report. Board meeting minutes from 2013 to 2020 are provided under the Advisory Board page of the website. The purpose of providing these reports is to boost public trust in CCRTA and allow the public to better understand the service and key decision making. The website does not include relevant planning documents (such as the 2015 CSA) or route-level performance data. In addition, the performance measures report for fixed route and demand response modes was last updated in August 2018. CCRTA should consider the following options for presenting key mode-level and route-level operating statistics on the CCRTA website:

- **Static PDF, updated at regular prescribed intervals:** Key route-level operating statistics can be formatted in Microsoft Word or a similar word processing tool and then saved as a static PDF file. This report can be combined with or presented separately from the similarly formatted fixed route and demand response performance metrics report.
  - If possible, use of Microsoft references or strategic visual basic may allow for a more automated update of a customized dashboard template using standard data formats, reducing CCRTA staff burden in creating a monthly publicly facing performance dashboard.
  - Include a schedule for expected updates, be it monthly, quarterly, or annually.

- **Automated Dashboard:** Several platforms exist for creating customizable data visualization dashboards that allow the public to interactively explore operational data.
  - **Tableau:** Most commonly used tool for transit providers that maintain a performance dashboard. Requires proficiency in SQL queries.
  - **Microsoft Power BI:** Drag and drop dashboard format that is integrated with other Microsoft software. Does not work well for complex data associations. Free version may be suitable for limited data analysis.
  - **Domo:** Selection of pre-built graphics allows for less technical staff to develop some visualizations while more technical staff may customize more complex visualizations using SQL.

If feasible, CCRTA should also include the option to download raw data from the website, making the data easy to access so that analysis can be included in efforts to educate the public, academic studies, or planning studies. In addition, it is recommended that CCRTA publish an annual service report, including analysis of system-wide performance as well as some route-level performance information. The report should include:

- **System-Level Performance**
  - **Cost per revenue hour of service:** This is the total cost for CCRTA to provide services divided by the total revenue hours of service provided (for fixed route and demand response).
  - **Average Phone Hold Time:** This is the average length of time a customer is on hold with customer service or with reservations for ADA and non-ADA service. This is recommended for quarterly and annual reports.
  - **Safety and Customer Service data summarized from Monthly reports:** CCRTA already collects information for scheduled trips operated, preventable accidents, and state of good repair, which can be summarized at the system level for annual reporting.
— **Transit Investment per Passenger:** This is total expenses minus fare revenue divided by ridership. This is recommended for annual reports. If possible, it is recommended to exclude HST fares, costs, and ridership from the calculation of demand response investment per passenger to highlight the rationale for incentivizing demand response customers who chose to utilize CCRTA's fixed routes when able.

- **Route-Level Performance**
  - **Ridership by Stop:** This measures passengers boarding and disembarking by stop. The technology associated with this data collection (APCs and AVLs) and supporting software can generate reports quickly for any time period requested and includes data that can assist in looking at the data spatially and by time of day. Although the prevalence of flag stops in CCRTA's service area means that some fixed route segments will not have this information available, it is especially important in the context of a shifting transit market due to the pandemic to understand how ridership demand has changed where data are available. This is recommended for annual reports, though in the near-term it may be more appropriate for monthly reports as ridership stabilizes.

  — **Route Performance by Route Type:** Routes should be defined by the function they service in order to accurately measure the health of a route. CCRTA's 2015 CSA categorized its services as either year-round fixed routes, seasonal fixed routes, or demand response services. However, it is recommended that fixed routes be further classified as either (1) Local (such as the Hyannis Crosstown or Provincetown shuttles), (2) Intercity Core (longer routes that connect high demand areas such as the Sealine or H2O), and (3) Intercity Coverage (longer routes such as the Bourne Run or Sandwich Line that provide transportation coverage to less productive parts of the Cape. Each route type should have different performance measures to monitor existing service and evaluate new service. Note that some routes may operate as two different route types depending on the time of day. These thresholds should be established after ridership has stabilized post-pandemic.

  — **On-Time Performance by Route:** CCRTA currently reports on-time performance summarized across the entire mode, as the percentage of trips that leave their origin within 5 minutes of the scheduled departure. Stop-level on-time performance was also available prior to 2020 but was too volatile to provide any meaningful understanding. It is recommended that CCRTA continue to report on-time performance data as define through the MOU, but also continue to track on-time performance by route. This may help to isolate routes with issues that can be addressed through a detailed scheduling analysis and may also provide insight regarding different on-time performance goals for local versus intercity routes.
7. Transportation Service Needs

This chapter provides a summary of the process used to identify CCRTA's 5-year service, capital, staffing, and technological needs as well as key opportunities for growth. Needs identified during this process were scored and prioritized as recommendations (Chapter 8). In some cases, needs may reflect CCRTA's long-term vision and may not be immediately feasible as recommendations during the pandemic or during periods of diminished local, state, or federal revenue. Other needs may serve as temporary measures intended to facilitate recovery. The strategy for classifying needs and recommendations embraces the uncertainty facing the region and the transit industry as a whole as a result of the pandemic and places each within the context of a specific recovery scenario.

7.1 Needs/Opportunities Identification Process

To identify CCRTA's needs, the project team held regular coordination meetings with CCRTA technical staff. These meetings provided an opportunity to discuss performance trends for existing CCRTA services and discuss challenges and opportunities for strategic investment to better meet the needs of the community or increase operational efficiency. In addition, targeted outreach was conducted with CCRTA drivers, stakeholders, and members of the public. Summaries of the outreach process and findings are included as Appendix C. Driver, stakeholder, and public input was reviewed and vetted with CCRTA staff. This input is consistent with MassDOT goals and initiatives, such as MassDOT’s support of capital expenditures related to transit priority treatments and bus stop improvements.

The needs identified by this process reflect a time of unprecedented uncertainty in the transit industry. Several looming questions face transit agencies across the country:

- When will system-wide ridership return to pre-pandemic levels?
- How might the transit market be permanently changed by the pandemic?
- Which user groups are going to be more or less impacted by the pandemic?
- How can new technology be used to provide mobility options in a potentially transformed transit market?
- Which fixed routes will see faster recovery and which ones will see a slower recovery?
- Will the pandemic drive increased sprawl as people seek larger houses with home offices, more space for at-home child education, and yard space?

The answers to these questions and ones like them will be determined by broad driving forces largely outside of the control of CCRTA, such as national economic policy, unemployment rates, education policy, availability of funding for capital investments, and municipal land use plans. However, CCRTA can plan for contingencies based on how the future might unfold and in so doing be prepared for multiple potential scenarios.

7.2 Recovery Scenarios

In order to address this uncertainty, this analysis defines three qualitative ridership scenarios to sketch out the future of transit demand in three potential futures through 2025. These include a high-ridership scenario, a medium-ridership scenario, and a low-ridership scenario (explored more below). Each identified need was categorized as either a core need or a ridership-dependent need. Core needs are those that CCRTA is likely to face regardless of ridership or economic recovery and typically includes capital items such as regular maintenance, fleet replacement, and technology solutions needed to keep up with changing consumer preferences and expectations.
7.2.1 High-Ridership Scenario

The high-ridership scenario is defined as a return to 86 percent or more of 2019 levels. This scenario imagines the transit needs associated with a relatively well-recovered and stable economy precipitated by the following possible conditions:

- There is an effective vaccine developed and widely available.
- There is continued federal support for small businesses and state and local governments to reduce layoffs resulting from the pandemic and prevent further reductions in staffing due to lagging consumer spending and tax receipts.
- There is federal support to transit agencies to fill any budget gaps resulting from reduced fare revenue, reduced state and local tax support, and increased costs associated with cleaning and installation of PPE.

As a result of this successful vaccination development and distribution effort, and/or ongoing federal support, ridership would expect to rise to levels seen in 2019. Specific aspects of this return of ridership demand include the following:

- Removal of state and national travel restrictions and a return of typical levels of tourism and seasonal events on the Cape.
- Restaurants and non-essential businesses open with strong sales.
- Educational institutions resume with primarily in-person classes, though it is likely that distance learning will comprise a larger share of course offerings than observed before the pandemic.
- Unemployment drops to 2019 levels, with people traveling to work on transit, and in particular service-sector workers who depend on transit for mobility.

Importantly, the high-ridership scenario does not envision ridership rising above where it was before the pandemic, but rather envisions a return to ridership at roughly the same levels seen in 2019.

7.2.2 Medium-Ridership Scenario

The medium-ridership scenario imagines a future in which ridership recovers somewhat from its lowest level in 2020 but has not fully recovered. This scenario may be characterized by stable ridership between 60 and 85 percent of 2019 levels or by a less predictable or volatile ridership that precludes either a “low” or high” ridership scenario. This scenario would envision the following conditions:

- The COVID-19 vaccine is slow to be developed, has limited effectiveness, has distribution problems, or has low-uptake due to public skepticism about its safety. While many people would be vaccinated, this lack of widespread immunization (herd immunity) means that many are still reluctant to be in public spaces.
- Federal support for small businesses and laid off workers is modest, and state and local governments are forced to reduce services and lay off staff due to funding shortfalls. While some economic activity returns as portions of the population are vaccinated and return to pre-pandemic activities, unemployment still remains substantially higher than in 2019.
- Transit agencies see some additional direct federal aid that prevents the deepest cuts in transit service. Lifeline service on suburban and rural routes is maintained with modest route consolidation or restructuring on some low-performing routes.
As a result of this middling performance on vaccination development and economic support, the transit market remains depressed. Some specific transit market impacts are:

- Tourism on the Cape returns but at lower levels than before the pandemic. Those who are able to visit the Cape may be more likely to travel in personal automobiles, and demand for public transit, from both tourists and the employees, lags.

- Some educational institutions return to in-person instruction while others continue virtually or on a hybrid schedule.

- Riders most sensitive to the risks of the pandemic (seniors, people with pre-existing conditions) rely more on demand response transit, which is more expensive to provide than fixed route services.

- Unemployment remains somewhat high and travel to service-sector places of work is depressed, reducing overall ridership.

These factors interact to produce a scenario where there is some rebound from the lows of spring 2020 but overall system ridership is below 2019 numbers.

### 7.2.3 Low-Ridership Scenario

The low-ridership scenario is defined as ridership that remains below 60 percent of 2019 levels. This scenario imagines a future where the transit market is compromised and transit demand plateaus at or near ridership levels seen post-pandemic.

Note that some parts of CCRTA’s service area may experience recovery at different rates than others. For example, routes that support essential services, jobs, or populations with limited travel options may experience higher and quicker ridership recovery than routes better characterized as providing leisure travel. Identified needs that are specific to a particular route or service reflect the recovery scenario most appropriate for that particular route or service.

### 7.3 List of 2021–2025 Needs/Growth Opportunities

Table 19 summarizes the needs that were identified through this process, the rationale for the need, and whether the need is a core need or a need specific to one of the three assumed recovery scenarios. The primary sources that helped to define each need are noted in the table, but needs may be more broadly supported by groups and agencies not listed.

**Table 19. Needs by Recovery Scenario**

<table>
<thead>
<tr>
<th>Description of Need</th>
<th>Source</th>
<th>Rationale</th>
<th>Scenario</th>
</tr>
</thead>
<tbody>
<tr>
<td>More direct travel options</td>
<td>Staff, Drivers, Public Outreach Survey</td>
<td>Long and meandering trip lengths and high cost per passenger</td>
<td>Core Need</td>
</tr>
<tr>
<td>Schedule optimization</td>
<td>Staff, Drivers</td>
<td>On-time performance issues, long end of line recovery, and mid-route passenger dwell</td>
<td>Core Need</td>
</tr>
<tr>
<td>More reliable routing and schedules for Provincetown shuttles</td>
<td>Staff, Drivers, Stakeholders</td>
<td>Easier to communicate schedule information for tourists/visitors; facilitates better data collection and performance monitoring for each route</td>
<td>Core Need</td>
</tr>
<tr>
<td>Description of Need</td>
<td>Source</td>
<td>Rationale</td>
<td></td>
</tr>
<tr>
<td>---------------------------------------------------------</td>
<td>-------------------------------</td>
<td>---------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Expanded fixed route service to Dennis Village CAC</td>
<td>Staff, Drivers, Public Outreach Survey</td>
<td>MOU target, only remaining CAC not currently served by fixed route</td>
<td></td>
</tr>
<tr>
<td>Boston commuter services</td>
<td>Staff</td>
<td>Suspension of Plymouth and Brockton service; mitigation of anticipated car bridge replacement</td>
<td></td>
</tr>
<tr>
<td>Improved marketing services</td>
<td>Drivers, Stakeholders</td>
<td>Increase ridership productivity</td>
<td></td>
</tr>
<tr>
<td>More designated/marked stops</td>
<td>Staff, Drivers, Stakeholders</td>
<td>Enhanced marketing and safety at designated stops, as access to bus stops is important and lack of sidewalks and safe pedestrian crossings is a deterrent to transit use</td>
<td></td>
</tr>
<tr>
<td>Transit priority treatment</td>
<td>Drivers, Staff, Public Outreach Survey, MassDOT</td>
<td>On-time performance issues</td>
<td></td>
</tr>
<tr>
<td>HTC bathroom improvements</td>
<td>Drivers</td>
<td>Staff health and safety, public image</td>
<td></td>
</tr>
<tr>
<td>Capital improvements for formal stop pull-outs</td>
<td>Drivers, Stakeholders, MassDOT</td>
<td>On-time performance issues and operational safety</td>
<td></td>
</tr>
<tr>
<td>Additional bike capacity on some routes</td>
<td>Drivers</td>
<td>Summer capacity does not allow for bike carry-ons and some bicyclists have been turned away</td>
<td></td>
</tr>
<tr>
<td>Vehicle capital replacement</td>
<td>Staff</td>
<td>Fleet maintenance</td>
<td></td>
</tr>
<tr>
<td>Affordable/subsidized multi-family housing in proximity to fixed routes/town centers</td>
<td>Staff, Stakeholders</td>
<td>Increased ridership productivity/efficiency of existing services</td>
<td></td>
</tr>
<tr>
<td>Additional frequency, span, and coverage into off-season</td>
<td>Staff, Drivers, Public Outreach Survey, Stakeholders</td>
<td>Additional service demand during shoulder season</td>
<td></td>
</tr>
<tr>
<td>Higher frequencies during peak periods</td>
<td>Staff, Drivers, Stakeholders, Public Outreach Survey</td>
<td>Less than 60-minute headways are more desirable, especially for more productive routes (H2O and Sealine)</td>
<td></td>
</tr>
<tr>
<td>Description of Need</td>
<td>Source</td>
<td>Rationale</td>
<td>Scenario</td>
</tr>
<tr>
<td>----------------------------------------------------------</td>
<td>-------------------------</td>
<td>---------------------------------------------------------------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>Intra-Cape Cod ferry (seasonal)</td>
<td>Staff</td>
<td>Seasonal bus travel time/traffic delays, tourism amenity, alternate revenue stream</td>
<td>High Ridership</td>
</tr>
<tr>
<td>Vendor at HTC</td>
<td>Drivers, Stakeholders</td>
<td>Staff amenity, alternate revenue stream, public image</td>
<td>High Ridership</td>
</tr>
<tr>
<td>Enhanced performance management system</td>
<td>RTA Task Force, MassDOT</td>
<td>Management and decision-making based on data and performance; provides accountability and transparency</td>
<td>Core</td>
</tr>
</tbody>
</table>
8. Recommendations

The recommendations for this 5-year plan reflect a data-driven process that takes into account historical operational data, stakeholder input, industry best practices, Commonwealth-wide goals, and RTA priorities. Specific recommendations were developed to address each identified need, then scored and prioritized to reflect appropriate recovery scenario assumptions, cost and complexity of implementation, and potential impact. These recommendations provide a framework for pursuing strategic service changes, capital enhancements, and policy approaches to ensure the best mobility options for the region’s residents.

8.1 Guiding Principles

Despite the uncertainty facing the transit industry due to the COVID-19 pandemic, several guiding principles remain steadfast despite the shifting transit landscape. These guiding principles must be considered as CCRTA’s needs are analyzed and recommendations are made.

- **Safety**: One of CCRTA’s primary responsibilities is ensuring the safety of its customers and employees. This includes consideration of not only operational and traffic safety, but also, as underscored by the pandemic, a focus on health and hygiene of its vehicles and facilities.

- **Customer Experience**: A high-quality customer experience begins when a customer searches for transit information or books a demand response trip and includes all interactions with CCRTA facilities, vehicles, and staff from waiting for a bus, to the ride itself, and any last mile needs.

- **Equity Considerations/Title VI**: Recommendations must avoid, minimize, or mitigate disproportionately high adverse effects on minority or low income populations; ensure full and fair participation of affected communities in the decision-making process; and prevent the denial, reduction, or delay in the receipt of benefits by minority and low-income populations.

- **Fiscal Responsibility**: CCRTA’s service plans and fare policies are financially constrained based on available state and federal resources. Recommendations seek to maximize the value of each dollar spent on CCRTA services.

- **Environmental Stewardship**: CCRTA is committed to environmental stewardship both in helping as many riders as possible reduce their carbon footprint and through consideration of lower emission technologies across its fleet and facilities.

- **Regional Land Use and Economic Development Goals**: CCRTA service changes and capital investment should be consistent with regional planning efforts.

8.2 Scoring

Scoring is based on two categories, complexity of implementation (described in Figure 25. Recommendation Complexity Thresholds) and presumed impact of the recommendation (described in Figure 26. Recommendation Impact Thresholds). Scores for each category are relative to the recommendation (route- or community-specific or system-wide) and are presented as high, medium, or low.

Factors used to assess the complexity of implementation include:

- Capital and/or operating costs
- Contractual obligations (union issues, need for more operators, third party limitations)
Figure 25. Recommendation Complexity Thresholds

<table>
<thead>
<tr>
<th>Low</th>
<th>Medium</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Easier to implement with very little costs or barriers to do so</td>
<td>Either a low cost but several barriers or a mid-high cost but no other barriers</td>
<td>Significant costs to implement with several barriers such as internal needs/issues, political challenges, and/or coordination with others</td>
</tr>
</tbody>
</table>

Factors used to assess the potential impacts of recommendations include:

- Number of riders or potential riders that would benefit
- Environmental benefits
- Benefits to equity or inclusion of environmental justice communities
- Communities and businesses
- Operational

Figure 26. Recommendation Impact Thresholds

<table>
<thead>
<tr>
<th>Low</th>
<th>Medium</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Would most likely go unnoticed by riders but would have an impact</td>
<td>Would impact only a segment of riders on the route or system</td>
<td>Large benefit to everyone</td>
</tr>
</tbody>
</table>

Complexity scores were assigned a value of 1, 2, or 3 from high to low, while impacts were assigned a value of 1, 2, or 3 from low to high, such that total scores range from 2 (high complexity and low impact) to 6 (low complexity and high impact).

8.3 Recommendations Overview

Table 20 summarizes the recommendations designed to meet each need, as well as its complexity and impact score. Further detail and staging considerations are provided in the following sections.
<table>
<thead>
<tr>
<th>Need</th>
<th>Recommendation</th>
<th>Complexity</th>
<th>Impact</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improved travel times through more direct intercity travel options</td>
<td>Reassign service in Osterville from Sealine to Sandwich Line. Sealine will continue straight along Route 28.</td>
<td>Low</td>
<td>Mid</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Explore more direct routing options for H2O (can be combined with Dennis Village expansion below, in that allows for elimination of detour to Patriot Square.)</td>
<td>Mid</td>
<td>Mid</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Transition the Flex route to a traditional fixed route service, with no deviations.</td>
<td>Mid</td>
<td>Mid</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Add intra-Cape express service (enhanced Patriot Limited).</td>
<td>Mid</td>
<td>Mid</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Expand SmartDART availability to address last mile connections in lieu of fixed route detours and route deviations.</td>
<td>Mid</td>
<td>Mid</td>
<td>4</td>
</tr>
<tr>
<td>Schedule optimization</td>
<td>Collaborate with MassDOT or hire a run-cut specialist to study and adjust schedules and dwell times by season, paying special attention to scheduled time points and mid-route layovers. Position may reflect a MassDOT or contracted specialist that can be utilized by several RTAs as needed.</td>
<td>Mid</td>
<td>High</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Collaborate with MassDOT or hire a run-cut specialist to optimize cycle times and end of route layover to reduce unnecessary idle time. Position may reflect a MassDOT or contracted specialist that can be utilized by several RTAs as needed.</td>
<td>Mid</td>
<td>Mid</td>
<td>4</td>
</tr>
</tbody>
</table>
| More reliable routing and schedules for Provincetown shuttles        | Clearly establish Provincetown/North Truro Shuttle as three separate routes, all meeting at hub at MacMillan Pier:  
  - Race Point Shuttle via Visitors Center and Provincetown Airport  
  - Herring Cove via First Pilgrims Beach  
  - North Truro via Shore Road | Low         | Mid    | 5     |
<table>
<thead>
<tr>
<th>Need</th>
<th>Recommendation</th>
<th>Complexity</th>
<th>Impact</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Expanded service to Dennis Village CAC</strong> Add a new Dennis-Yarmouth Connector fixed route, running in same corridor as H2O along Route 28 to Route 134, then going to Dennis Village via Patriot Square with possible extension to Yarmouthport.</td>
<td>Mid</td>
<td>High</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td><strong>Boston commuter services</strong> Provide CapeFLYER service longer or year-round with potential added stops at legacy stations in Sandwich and West Barnstable. Collaborate with MBTA to help facilitate a year-round commuter rail service from South Station to Buzzard's Bay via Middleborough. Explore and implement bus service connections that provide commuter connections to and from the Buzzard's Bay Train Station.</td>
<td>High</td>
<td>High</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td><strong>Improved marketing of services</strong> Consider more prominent link between CapeFLYER and CCRTA fixed route transit website. Develop two system maps to distinguish summer and winter seasons and publish summer season information during the off-season to allow for advance trip planning. Conduct new focused outreach and marketing efforts to both Councils on Aging and Chambers of Commerce on Cape Cod.</td>
<td>Low</td>
<td>Low</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td><strong>More designated/marked stops</strong> Establish ridership or safety warrants and install new bus stop signage at warranted stops, as access to bus stops is important and lack of sidewalks and safe pedestrian crossings is a deterrent to transit use.</td>
<td>Low</td>
<td>Low</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td><strong>Transit priority treatment</strong> Collaborate with MassDOT and towns to create a list of priority locations and for transit priority treatments or formal stop pull-outs. Designate CCRTA staff liaison who can provide planning support and grant writing assistance to towns.</td>
<td>High</td>
<td>Mid-High</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td><strong>HTC bathroom improvements</strong> Provide upgrades that enhance security, health, and hygiene at HTC bathroom.</td>
<td>Mid</td>
<td>Low</td>
<td>3</td>
</tr>
<tr>
<td>Need</td>
<td>Recommendation</td>
<td>Complexity</td>
<td>Impact</td>
<td>Score</td>
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<td>----------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>Capital improvements for formal stop pull-outs</td>
<td>Collaborate with MassDOT and towns to create a list of priority locations and transit priority treatments or formal stop pull-outs. Designate CCRTA staff liaison who can provide planning support and grant writing assistance to towns.</td>
<td>Mid</td>
<td>Mid</td>
<td>4</td>
</tr>
<tr>
<td>Additional bike capacity on some routes</td>
<td>CCRTA already uses three-position bike racks (largest commercially available size). Additional bike capacity will be provided through frequency adjustments.</td>
<td>Mid</td>
<td>Low</td>
<td>4</td>
</tr>
<tr>
<td>Vehicle capital replacement</td>
<td>Continue to replace aging vehicles as they exceed ULBs, following TAM Plan schedule. Vehicle replacement should include review of options to pilot battery electric vehicles, as technology matures. CCRTA’s initiative to replace traditional high-floor cutaways with low floor models has been a success in terms of rider convenience and trip optimization and should be continued.</td>
<td>Mid</td>
<td>High</td>
<td>5</td>
</tr>
<tr>
<td>Affordable/subsidized multi-family housing in proximity to fixed routes/town centers</td>
<td>Designate CCRTA staff liaison who can provide planning assistance/coordination to towns.</td>
<td>Low</td>
<td>Mid</td>
<td>5</td>
</tr>
<tr>
<td>Additional frequency, span, and coverage into off-season</td>
<td>Reduce number of seasonal schedules per year from three (day after Labor Day to end of January, end of January to end of June, end of June to Labor Day) to two and extend summer season from Memorial Day to Indigenous People’s Day. If warranted after recovery of seasonal ridership, summer season could be extended to begin on Patriot’s Day in late April.</td>
<td>Low</td>
<td>Mid</td>
<td>5</td>
</tr>
<tr>
<td>Higher frequencies during peak periods</td>
<td>Improve peak frequencies from 60 to 30 minutes on Sealine.</td>
<td>Mid</td>
<td>Mid</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Improve trunk frequency along western H2O corridor from 60 to 30 minutes by overlaying new Dennis-Yarmouth Connector fixed route at 60-minute headways.</td>
<td>High</td>
<td>Mid</td>
<td>3</td>
</tr>
<tr>
<td>Need</td>
<td>Recommendation</td>
<td>Complexity</td>
<td>Impact</td>
<td>Score</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>------------</td>
<td>--------</td>
<td>-------</td>
</tr>
<tr>
<td>Intra-Cape Cod ferry (seasonal)</td>
<td>Explore seasonal ferry service options that provide intra-Cape connections (such as Provincetown to Barnstable Harbor or Hyannis to Falmouth Harbor).</td>
<td>High</td>
<td>Mid</td>
<td>3</td>
</tr>
<tr>
<td>Vendor at HTC</td>
<td>Lease vending machine space at HTC to a snack or beverage vendor (may require differing contract terms with next vendor).</td>
<td>Mid</td>
<td>Mid</td>
<td>4</td>
</tr>
<tr>
<td>Enhanced performance management system</td>
<td>Identify technology-driven data tools and key performance metrics to establish an improved enterprise-wide data-driven management and decision-making framework. Implement a public-facing and transparent performance reporting mechanism.</td>
<td>Mid</td>
<td>Low</td>
<td>3</td>
</tr>
</tbody>
</table>
8.3.1 Service Recommendations

This section provides additional detail regarding the eight service-related recommendations outlined in Table 20. Alignment and scheduling recommendations may be paired/grouped where opportunities exist for a more streamlined roll-out.

8.3.1.1 Modifications to Sealine and Sandwich Line

One recommendation that stands out as relatively impactful and easier to implement (Score=5) is the reassignment of local service in Osterville from the Sealine to the Sandwich Line. This allows the Sealine to continue straight along Route 28, improving travel times along this high-demand route and fulfilling a core need for more direct intercity connections. Additional impacts include:

- Improved on-time performance for the Sealine by avoiding high-traffic areas along Main Street in Osterville.
- Operation of 35-foot buses on the high-volume Sealine, which is currently restricted to 30-foot buses due to weight restrictions on the South Main Street Bridge.
- Improved operational safety by utilizing a smaller vehicle (Sandwich Line) along the South Main Street Bridge and other narrow locations in Osterville.
- Potential to increase productivity for the Sandwich Line by picking up additional riders in Osterville.
- Potential to pick up some school trips by routing Sandwich Line along Osterville West Barnstable Road.
- Reduced travel time on the Sealine to lower costs associated with frequency improvements.

Potential alignment options for the Sandwich Line and Sealine are shown together in Figure 27. It is recommended that, in the event of fully recovered or quickly recovering Sealine ridership, the proposed alignment modifications be staged together with the recommendation to improve peak frequencies on the Sealine from 60 to 30 minutes, most reasonable during a transition to a peak (summer) schedule. This will allow the costs associated with more frequent service to be offset somewhat by reduced round trip travel times and will reduce the administrative burden associated with schedule revisions and public notification. If full ridership recovery does not seem likely during the planning horizon, the alignment modifications can be executed separately from frequency improvements. Depending on estimated travel times for the revised route and projected demand, 40-minute and 45-minute frequencies should also be studied to determine the most cost-effective option.
8.3.1.2 New Dennis-Yarmouth Connector

A recommendation for new service to Dennis/Yarmouth would operate in the same corridor as the existing H2O along Massachusetts Route 28 to Dennis Port, then heading north to Dennis Village via Massachusetts Route 134 and Patriot Square. The route could be extended into Yarmouth Port to provide greater coverage, as shown in Figure 28. Benefits include:

- Extends access to CCRTA fixed route services to Dennis Village
  - Dennis Village is the only remaining CAC (17 total) not served by CCRTA fixed route (MassDOT MOU goal).
  - Dennis was identified as the top desired but unreachable destination in the public outreach survey.
  - Access to Route 6A, including Dennis Village and Yarmouth Port was identified in driver interviews as a top request for service.
- Alternating trips to Dennis Village provide improved frequency along H2O trunk (between Hyannis and Dennis Port) from 60 to 30 minutes.
  - Includes headway improvements for Cape Cod Hospital (access to health care was identified as a top priority)
• Ability to removing H2O dog-leg to Patriot Square for faster travel time and on-time performance improvements for the high-volume H2O line
  — Lack of direct routes was identified as the #1 barrier to riding CCRTA in the public outreach survey

Because this recommendation is primarily intended to allow for increased frequencies along Massachusetts Route 28 between Hyannis and Dennis Port without requiring frequency improvements on less productive portions of the H2O, the rollout of new service to Dennis Village might be most effective when packaged with modifications to streamline the H2O, such as those described in Section 8.3.1.3 and shown on Figure 28.

**Figure 28. Dennis-Yarmouth Connector and Lower Cape Service Modifications**

![Figure 28: Dennis-Yarmouth Connector and Lower Cape Service Modifications](image)

8.3.1.3 Modifications to Lower Cape Services

Routing, service type, and frequency changes for the H2O and Flex routes are recommended as a package of improvements in order to streamline multiple schedule adjustments. The package of service changes should be timed to reflect ridership recovery on the H2O sufficient to warrant additional frequency. These recommendations are also best suited for rollout during a summer schedule change, as it entails higher levels of service in some corridors and on-time performance solutions, which may be most beneficial during seasonal traffic levels.

Figure 28 shows potential service changes for the Lower Cape, including:
• H2O terminates in Chatham at the lighthouse (rebranded as Hyannis to Chatham or “H2C” service)
• Flex route is replaced
• New fixed route service (branded as Outer Cape Link) from Chatham to Provincetown
• New fixed route crosstown (branded as Lower Cape Crosstown) between Harwich, Brewster, and Orleans

The two new Outer and Lower Cape services are intended to address the core need for more direct intercity connections and the high-ridership scenario need for more frequent service. The recommendations (taken together) have the potential for moderate impact and can be scaled up, although more robust service would be associated with higher costs/complexity than changes proposed for the Sealine. A detailed scheduling analysis should be conducted prior to implementation to ensure offset timing and meets can be maintained. Benefits associated with the changes include:

• More streamlined connection to Provincetown: Hyannis to Provincetown through riders still require one transfer but no longer experience route deviation on the Flex.
• Breaking two long routes into three shorter routes allows for different service levels on segments with differing productivity. Higher frequency between Hyannis and Chatham can be implemented at lower cost than for similar service levels to Orleans.
• Better serves Chatham central business district. Chatham is a destination for year-round and seasonal trips with a concentration of tourism activity as well as a high percentage of seniors.
• Offers two different route options between Harwichport and Orleans, resulting in a better frequency of services between these destinations.

While breaking the H2O line at Chatham does have the potential to add a transfer for through riders between Hyannis and Orleans, the large number of mid-route boardings and alightings on the H2O suggests that this would not impact a large percentage of riders. A coordinated expansion of CCRTA’s Patriot Limited service (see Section 8.3.1.7) could address Hyannis to Orleans travel times for potentially affected riders.

The two new outer Cape services would fully cover the alignment currently served by the Flex. The only loss in coverage would be associated with elimination of Flex route deviations. Currently the Flex can only accommodate 2 route deviations per trip (14 per day). These trips would continue to be met through CCRTA’s ADA paratransit service, demand response, or an expansion of the pilot SmartDART service into the outer Cape with an emphasis on coordinated feeder service with free transfers to the fixed route.

Currently, shuttle services in Provincetown vary between a two-shuttle loop configuration and a three-shuttle bi-directional configuration based on estimated daily ridership demand. This can make it difficult for riders (especially visitors to the Cape) to understand and utilize the service. Last minute changes can also result in schedule adherence issues with riders uncertain about the arrival time for the next bus. CCRTA should default to its three-shuttle configuration (shown in Figure 29) with individual services to (1) Race Point Beach, (2) Herring Cove Beach, and (3) North Truro with all routes meeting at the MacMillan Pier in Provincetown. In addition to reducing confusion for riders, this change will help to streamline accurate data collection (APC and revenue service levels) for each individual route, which can lead to a more informed decision-making when/if Provincetown service changes are warranted.
Figure 29. Three-Shuttle Configuration

8.3.1.4 Expand SmartDART Services

CCRTA should expand on the success of its recent implementation of SmartDART service in Barnstable. Communities expressing interest in the service include Falmouth, Dennis, and Yarmouth as well as the outer Cape. Denser communities may be more suitable for early implementation; however, expansion of SmartDART into the outer Cape would also help alleviate issues associated with limited demand response resources and use of Flex route deviations that currently make that route less reliable. As CCRTA has emphasized with its Barnstable rollout, SmartDART is not a replacement for fixed route. Geometry and vehicle capacity constraints will never allow the mode to be as efficient or effective as traditional fixed route bus service. When done right, however, it targets short haul trips that connect seamlessly to the fixed route, which allows the fixed routes to operate more direct routings, which is faster and more attractive to riders and potential riders. Benefits of SmartDART expansion include:

- New service options to address last mile connections
  - Follows stakeholder requests for "localized service"
  - Allows fixed route to take a more direct path where SmartDART can provide seamless short-haul connections
- More sustainable and marketable use of traditional DART
• App-based technology has already been built and tested for Barnstable pilot, reducing costs of rollout.

8.3.1.5 Extend Summer Season

Other relatively impactful and easy to implement recommendations (Score=5) are to consolidate CCRTA’s existing three seasonal schedules and extend the summer service levels, running from approximately Patriot’s Day or Memorial Day in the spring to Indigenous People’s Day (formerly Columbus Day) in early October. Because this change would apply system-wide it should occur following ridership recovery on all peak season routes. The goal of this recommendation is to make transit a reasonable alternative for seasonal workers on the Cape who’s travel needs may extend beyond the current summer season from late June to August). Increasing the number of jobs accessible by transit in the shoulder season may influence broader car ownership and mode choice preferences of these workers, with potential to increase transit ridership and reduce auto congestion during the peak season. Although this change would incur approximately 4 to 10 weeks in additional summer-level operating costs, some savings are expected due to fewer administrative, scheduling, and marketing/outreach hours if CCRTA is able to utilize only two service plans per year instead of three.

8.3.1.6 Boston Commuter Rail Services

Two recommendations address the need for commuter connections between the CCRTA service area and the city of Boston. These options for enhanced Boston commuter services can be selected based on ridership recovery and opportunities for collaboration. It is not anticipated that all three recommendations would be pursued simultaneously.

Commuter rail service from Buzzard’s Bay would provide an affordable transportation alternative for Boston commuters residing in the CCRTA service area as well as those in the GATRA service area, as a result of new connections at Buzzard’s Bay between CCRTA and GATRA services. Extended rail services could take the form of either a year-round MBTA-operated commuter rail line to Buzzard’s Bay or an extension of CapeFLYER services into a shoulder season or year-round with potential stops at Sandwich and West Barnstable legacy stations, as shown in Figure 30. Commuter rail service to Buzzard’s Bay would be managed by MBTA, and as such is beyond the direct control of CCRTA. However, CCRTA would support this measure by providing more frequent bus connections. CapeFLYER service could either be operated under contract with MBTA/Keolis or by Cape Cod Central Railroad. This improvement could serve to mitigate traffic impacts expected as a result of planned MassDOT bridge replacement, anticipated to begin no later than 2025, leading to travel time and air quality benefits for all Cape Cod residents.

MassDOT and the Cape Cod Commission are currently conducting a Cape Cod Rail Study to study options for expanding passenger rail service to the Cape region. Additional information on the study can be found at https://capecodcommission.org/our-work/cape-rail-study.
8.3.1.7 Intra-Cape Express Service

An additional recommendation targeted at the goal of reducing passenger travel times with more direct intercity connections is to expand the Patriot Limited route. The Patriot Limited (marketed as the “Patriot LTD”) currently utilizes deadhead runs back to CCRTA facilities (proximal to Patriot Square in South Dennis) for express service from HTC, as well as some other locations (as shown on Figure 31). This recommendation would expand the number of express runs to Patriot Square. Currently only inbound trips to the CCRTA bus garage from HTC are open to the public as express Patriot Limited service. CCRTA's January schedule updates will transition select outbound trips leaving the garage from deadhead to express Patriot Limited service. The recommendation for future years is to explore opportunities to further expand Patriot Limited service to address mid-day or counter-direction travel demand. Benefits of this service would include:

- Makes the Patriot Limited express service more robust and useful
- Expands marketing and visibility of service
- Addresses long travel times identified as significant barrier to transit use in rider outreach survey
- Low marginal costs
Recaptures deadhead runs as revenue service, resulting in increased formula funding apportionment

**Figure 31. Patriot LTD Expansion**

It is recommended that targeted marketing of the Patriot Limited be undertaken and the route(s) included on system level mapping and outreach materials (see Section 8.3.3).

### 8.3.1.8 Seasonal Ferry Service

The addition of seasonal, intra-Cape ferry service (Figure 32) could achieve several benefits, including:

- Transportation options that bypass traffic and on-time performance issues inherent to summer season bus services (e.g., Wood's Hole to Hyannis)
- Opportunities for new connections between Cape Cod towns that would otherwise require a transfer and excessive travel time (e.g., Provincetown to Yarmouth Port or Hyannis)
- Enhanced tourism on the Cape and increased visibility of CCRTA as a regional resource
- More robust/resilient revenue streams
  - May be appropriate for a premium fare, enhancing system-wide fare recovery
— Ferry vehicle revenue miles and directional route miles significantly increase federal formula funding allocations.

— Federal discretionary programs are less competitive than other FTA programs, offering additional opportunities to secure future funding.

However, the implementation of ferry service is assumed to be one of the more costly and complex recommendations (Score=3). CCRTA would need to coordinate with local boat operators to determine partnership options, dockspace, and available connections before assessing costs and demand. This recommendation would likely not be feasible until full system recovery. Possible routings include a Canal and North Shore service with potential stops in Buzzards Bay, Sandwich Marina, Barnstable Marina, and Provincetown, and a South Shore service with potential stops in Falmouth Harbor, Hyannis Harbor, South Yarmouth, Harwichport, and Chatham. Unlike the larger vessels operated by the Steamship Authority or Hy-Line, the CCRTA intra-Cape service would utilize smaller, low profile vessels.
8.3.2 Capital Recommendations

This section describes recommendations for capital improvements or purchases.

8.3.2.1 Vehicle Replacement/Expansion

CCRTA has established reasonable vehicle replacement guidelines through its TAM Plan. Follow-through of the TAM Plan will result in a need to replace a portion of CCRTA's fleet each year as vehicles reach the end of their useful life. In addition, new in-service vehicles and spares may be required to implement frequency improvements for the Sealine or H2O and other Outer Cape service adjustments. Through this process of vehicle replacement and expansion...
CCRTA should consider and review options to test the effectiveness of a battery electric vehicle. Ideal services for a battery electric vehicle pilot would be those that provide shorter range trips, such as Hyannis local routes and Provincetown shuttles, as the performance from providers that have utilized the technology indicate that battery electric vehicles have a difficult time achieving the range advertised by manufacturers. Seasonal service would have an additional advantage of not operating during the winter, so there is no issue with having to drain battery capacity to heat the vehicle. As the technology matures, CCRTA might consider a more comprehensive deployment. CCRTA intends to be included in MassDOT's Battery Electric Bus Feasibility Study targeted to kick off in winter 2021.

CCRTA uses cutaways on several of its lower volume routes, including the Villager, Crosstown, Bourne Run, some Sandwich Line trips, and the Provincetown Beach Shuttles. Unlike the larger Gillig buses, up until recently, cutaways have been high-floor vehicles. Beginning this past year, CCRTA began replacing traditional high floor cutaways with low-floor vehicles that do not require a lift. The benefits are easier access for people using mobility devices, greater vehicle capacity (since there is no lift taking up space inside the vehicle), and reduced dwell times at stops. In addition, drivers do not have to inspect a lift before leaving the garage, which both saves time and eliminates the risk of lift malfunction while in service. CCRTA should plan to continue replacing traditional cutaways with low-floor models as the existing fleet ages out.

CCRTA is currently one of only four RTAs that do not provide any vehicle cover at its maintenance facility. This presents logistical challenges during unusual weather events and impediments to keeping the vehicles in a state of good repair. CCRTA should consider building vehicle storage at its South Dennis operations center in order to optimize vehicle condition and longevity. Partnerships with solar panel vendors can help offset some or all the cost and allow CCRTA to further increase the percentage of its energy use from alternative sources as well as the amount of energy it is able to return to the grid.

8.3.2.2 Designated Stops and Signage

CCRTA relies primarily on the flag-down system. However, this can create issues around safety if riders attempt to flag down vehicles too near an intersection or create a distraction for drivers in situations that require their full attention on the road. Flag stop systems can also lead to missed connections when new riders or tourists are improperly trained as to how to flag the driver or when drivers do not have appropriate sight lines. CCRTA should consider placement of additional fixed/marked stops in locations established through a series of ridership or safety warrants. Designated stops have the potential to:

- Increase visibility and marketing of CCRTA service to new riders and visitors
- Help drivers more easily identify riders and streamline locations for vehicle stops
- Address stakeholder and driver priorities regarding greater visibility of stops identified as priority in stakeholder focus groups and driver interviews
- Reduce trip times by helping to concentrate riders at fewer stop locations

Costs associated with signage alone would be low. Additional stop amenities could add to potential costs, but CCRTA has room in its capital plan to add shelters at stops where an existing sidewalk is in place or the town is able to pour a pad. A lack of sidewalks along many corridors in which CCRTA operates creates an obstacle to establishing designated stops and limits the catchment area CCRTA is able to draw from. One opportunity to help resolve this impediment is to work with towns to build sidewalks, especially where there are roadway projects. MassDOT’s Transit Priority Treatment Plan calls for project sponsors to coordinate with the RTA in their area at 25 percent design, which has already resulted in the inclusion of new sidewalk infrastructure in projects in Dennis and Wellfleet. Building on this success, CCRTA should also identify a capital budget line item to be used in proactively partnering with MassDOT.
and town planning initiatives to allow for cost-pooling options that help incentivize transit priority treatments or formal stop pull-outs during road modifications, signal timing, or resurfacing projects (see Section 8.3.3).

8.3.2.3 HTC Bathroom Upgrades

CCRTA should attempt to address driver concerns regarding bathrooms at HTC. Short-term focus should be on upgrades that enhance security, health, and hygiene; however, a more complete modernization of the facilities (if financially feasible) may enhance employee morale and boost CCRTA's public image. Some of the challenge with bathroom upkeep is less one of capital than of enforcement. In this vein, there is an opportunity to partner with Barnstable Community Service Officers to add the HTC bathrooms to their patrols.

8.3.3 Staffing/Administrative Recommendations

Table 20 offers several staffing and administrative recommendations specific to a variety of needs that can be streamlined as three general prescriptions:

- Designate a CCRTA staff liaison who is responsible for coordination with MassDOT and town planners. This position would
  - Provide technical assistance or plan review as needed to help towns assess the ability of transit to serve proposed high-density or social service-oriented developments.
  - Manage CCRTA's priority list of collaborative capital improvement projects, including desired locations for transit priority treatment and bus stop pull-outs.
  - Collaborate with MassDOT and towns to pursue creative financing strategies for capital improvement projects, including pursuit of federal or state grant support or local cost sharing agreements

  These responsibilities are likely to comprise less than 0.5 full-time equivalent and may be combined with another position; for example, CCRTA's new grants specialist.

- Hire a third party run-cut specialist or request MassDOT technical assistance in developing:
  - Seasonal schedules that reflect traffic-related impacts to run times, paying special attention to scheduled time points and mid-route layovers
  - Optimized cycle times and end of line recovery/layovers

- Implement marketing strategies, including:
  - Formalization of a summer season and off-season service map
  - Inclusion of CapeFLYER rail services and CapeFLYER bus connection information on CCRTA system-level maps and marketing materials
  - Inclusion of the Patriot LTD service on system maps and outreach materials
  - Education of lost riders regarding new health and hygiene protocols
  - Periodic review of Google Transit assignments to verify accurate customer information

8.3.3.1 Performance Management System

As identified in Table 20 and described extensively in Chapter 6, CCRTA should identify technology-driven data tools and key performance metrics that build off of CCRTA's strong data capture and analysis systems already in place. These tools will be used to establish an
improved enterprise-wide data-driven performance-focused management and decision-making framework, particularly in the service and financial performance areas. As an outgrowth of this system, CCRTA should implement a public-facing and transparent performance reporting mechanism. Although the impact of this recommendation may be less noticeable for riders, it is a core need and recommended for Phase 1 of implementation. Early implementation will help CCRTA respond with more clarity to the uncertain transit conditions presented by the COVID-19 pandemic.

8.3.4 Other Recommendations

One other recommendation to solicit a snack or beverage vendor at the HTC is intended to add an amenity for drivers and riders that will:

- Increase attractiveness and comfort levels at the HCT, contributing to CCRTA’s overall public image and ridership
- Provide an amenity for drivers that can be accessed during a short break, leading to better schedule adherence and employee morale
- Offer an additional own-source revenue stream and increase CCRTA’s ability to leverage federal funds

This recommendation is dependent on recovery of seasonal CapeFLYER ridership to 90 percent or more of pre-COVID-19 levels in order to minimize impacts to on-board Café Car sales goals. Although a HTC vendor could operate during the off-season without impacting CapeFLYER sales goals, it is recommended that implementation of this recommendation be timed to allow for a year-round continuity of service. If the pandemic affects the ability to provide food service on-board the CapeFLYER (health and hygiene concerns related to eating while on-board the train), then CCRTA may consider leasing its space at HTC to a vendor on a more expedited timeframe.
Appendix A Illustrative FY 2015 to FY 2019 Performance Results and Peer Review

To provide historical context for CCRTA performance over the last 5 years, this appendix provides information on CCRTA system-wide performance for fixed route and demand response modes for FY 2015 through FY 2019. (FY 2020 and FY 2021 results are covered under the Bilateral CCRTA/MassDOT MOU discussed in Chapter 6.) A brief performance comparison with peer transit systems is also provided.

FY 2015 to FY 2019 Performance Evaluation

Service Effectiveness

Passenger miles of travel for FY 2015 to FY 2018 are summarized by mode on Figure 33. Demand response passenger miles have been decreasing since 2015, while fixed route passenger miles have steadily increased.

Figure 33. Passenger Miles Traveled (FY 2015–FY 2018)

Source: 2015-2018 NTD Agency Profile

*System total includes demand taxi mode (not shown separately).

Service effectiveness describes the amount of service utilized per unit of transit service provided. Service effectiveness is measured based on two indicators: passengers per mile and passengers per hour. Service effectiveness by route is summarized in Table 21. As shown, CCRTA bus routes averaged 0.49 passengers per revenue mile, compared to 1.42 for Massachusetts RTAs and 3.46 nationally. By revenue hour, CCRTA routes generated 5.99 passengers, compared to 18.98 among Massachusetts RTAs and 28.9 nationally.
### Table 21. Fixed Route Productivity (FY 2019)

<table>
<thead>
<tr>
<th>Route</th>
<th>Passengers/Mile</th>
<th>Passengers/Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sealine</td>
<td>0.71</td>
<td>7.02</td>
</tr>
<tr>
<td>WHOOSH*</td>
<td>0.83</td>
<td>7.25</td>
</tr>
<tr>
<td>Barnstable Villager</td>
<td>0.62</td>
<td>5.27</td>
</tr>
<tr>
<td>Hyannis Loop*</td>
<td>0.35</td>
<td>3.18</td>
</tr>
<tr>
<td>H2O Line</td>
<td>0.48</td>
<td>6.49</td>
</tr>
<tr>
<td>Provincetown/Truro Shuttle*</td>
<td>1.55</td>
<td>13.52</td>
</tr>
<tr>
<td>Flex</td>
<td>0.38</td>
<td>5.36</td>
</tr>
<tr>
<td>Hyannis Shuttle* +</td>
<td>1.38</td>
<td>12.67</td>
</tr>
<tr>
<td>Bourne Run</td>
<td>0.08</td>
<td>1.47</td>
</tr>
<tr>
<td>Sandwich Line</td>
<td>0.27</td>
<td>3.91</td>
</tr>
<tr>
<td><strong>System Bus Average</strong></td>
<td><strong>0.49</strong></td>
<td><strong>5.99</strong></td>
</tr>
<tr>
<td><strong>Massachusetts Average</strong>**</td>
<td><strong>1.37</strong></td>
<td><strong>18.39</strong></td>
</tr>
<tr>
<td><strong>National Average</strong></td>
<td><strong>2.26</strong></td>
<td><strong>27.21</strong></td>
</tr>
</tbody>
</table>

Source: CCRTA, NTD, 2018

*Rows highlighted yellow are seasonal routes.*

Note that calculations for the Massachusetts and national averages are functions of the total ridership in the state and the country divided by the total number of vehicle revenue miles or hours in the state and country. As a result, while the Massachusetts and national averages may be useful as guideposts, they are not appropriate as targets for CCRTA, as both calculations are heavily skewed by larger properties with the highest volume of service, particularly PVTA and WRTA in Massachusetts and NYCTA, CTA, LAMTA, WMATA, and SEPTA nationwide.

* Data reflect Hyannis Loop and Hyannis Shuttle route alignments, which were replaced in FY 2020 by the Hyannis Crosstown and Hyannis Area Trolley, respectively.

** Massachusetts average excludes MBTA

CCRTA fixed routes generated approximately 5.99 passengers per hour in FY 2019. As shown on Figure 34, the Sealine, WHOOSH Trolley, H2O Line, Provincetown/Truro Shuttle, and Hyannis Shuttle are all performing above average. Although it has the second highest productivity, the Hyannis Shuttle, a seasonal route, represents a relatively small portion of the system-wide revenue hours or passenger boardings. This route was redesigned and renamed as the Hyannis Area Trolley in 2019.

When evaluating the service effectiveness at the route level, it is important to recognize that in addition to having ridership goals, CCRTA also has coverage goals. The CCRTA Advisory Board has expressed a high priority in serving all 15 towns on Cape Cod, which was achieved in 2012 with the launch of the Bourne Run and Sandwich Line. While both routes have historically showed lower productivity, they enhance important system-wide coverage across Cape Cod. Both routes underwent service changes in September 2020 including a joint operation along a 2-mile stretch of Buzzards Bay Main Street with 17 eastbound and 18 westbound trips in each direction and headways of 20 to 40 minutes (weekdays 7:00 AM to 8:00 PM). The first
eastbound Bourne Run of the day has been extended from its current origin at Cape Side Convenience/Bourne park and ride to Buzzards Bay Train Station, increasing the total number of eastbound trips from seven to eight. The Sandwich Line has been extended 5 miles along Scenic Highway to Buzzard’s Bay, with three additional round trips. During the peak season on Saturdays and Sundays, the Sandwich Line will offer short-turn shuttle service every 45 minutes between Buzzards Bay Train Station/Rotary and alternating termini at the Sagamore park and ride and Bourne park and ride.

The Hyannis Loop, a year-round route within the city of Hyannis and one of the lowest performing routes, was also replaced in 2019 by the Hyannis Crosstown. The streamlined linear pattern associated with the new Crosstown route is likely to improve service efficiency, requiring fewer vehicles, miles, and hours, to serve a similar number of passengers, compared to the Loop.

Hourly productivity by season is shown on Figure 35. As shown, the Provincetown/Truro Shuttle generates almost 35 passengers per revenue hour during the peak season. Generally (with the exception of the Sandwich Line) fixed routes experience their highest productivity during the peak season. The lowest performing routes during the peak season are the Barnstable Villager, Hyannis Loop (no longer in service), Bourne Run (fall 2020 service changes), and Sandwich Line (fall 2020 service changes).

**Figure 34. Annual Passengers per Revenue Hour (FY 2019)**

*Data reflect Hyannis Loop and Hyannis Shuttle route alignments, which were replaced in FY 2020 by the Hyannis Crosstown and Hyannis Area Trolley, respectively.*
Figure 35. Seasonal Passengers per Revenue Hour (FY 2019–FY 2020)

Source: CCRTA, September 2019 to August 2020

*Data reflect Hyannis Loop and Hyannis Shuttle route alignments, which were replaced in FY 2020 by the Hyannis Crosstown and Hyannis Area Trolley, respectively.

Across all demand response services reported by CCRTA (including DART general purpose and ADA services, Boston Hospital Transportation, Demand Taxi, and HST brokerage), an average of 1.83 passengers per revenue hour was generated. This compares to 2.13 passengers per revenue hour for Massachusetts RTAs.24

Annual and seasonal passengers per revenue mile for CCRTA fixed routes are shown on Figure 36 and Figure 37, respectively. The number of passengers per mile mirrors similar hourly trends from route to route, with a few small differences. For example, the Barnstable Villager performs slightly above average and the H2O Line performs slightly below average, while the reverse was true for hourly performance. This is likely due to a higher average operating speed for the H2O Line, allowing it to be more efficient in terms of hours, but less efficient by mile.

24 NTD 2018
**Figure 36. Annual Passengers per Revenue Mile (FY 2019)**

Source: CCRTA

*Data reflect Hyannis Loop and Hyannis Shuttle route alignments, which were replaced in FY 2020 by the Hyannis Crosstown and Hyannis Area Trolley, respectively.*

**Figure 37. Seasonal Passengers per Revenue Mile (FY 2019–FY 2020)**

Source: CCRTA, September 2019 to August 2020

*Data reflect Hyannis Loop and Hyannis Shuttle route alignments, which were replaced in FY 2020 by the Hyannis Crosstown and Hyannis Area Trolley, respectively.*
CCRTA tracks the total number of missed trips for its demand response service, DART. CCRTA has never exceeded four missed trips annually as shown on Figure 38. The low level of missed trips reflects DART’s status as a general purpose demand response service and CCRTA’s preference not to book trips they cannot accommodate. ADA trips are contracted out to ensure fulfilment of valid requests.

**Figure 38. Annual Missed Trips (DART) (2015–2019)**

![Figure 38. Annual Missed Trips (DART) (2015–2019)](image)

*Source: CCRTA*

**Customer Service and Satisfaction**

The Cape Cod Commission has designated 17 locations as CACs on Cape Cod, based on GIS analysis demonstrating that an area contains significant community or business activity and has a compact, pedestrian-oriented form (Cape Cod Commission 2019 *Regional Policy Plan*). The 17 identified CACs are Barnstable Village, Buzzards Bay, Chatham, Dennis Port, Dennis Village, Falmouth Village, Harwichport, Hyannis, Mashpee Commons, Orleans, Osterville, Provincetown, Sandwich Village, South Yarmouth, Wellfleet, West Dennis, and Woods Hole. CCRTA fixed route buses currently serve 16 out of the 17 CACs (all but Dennis Village). A goal to serve all 17 locations reflects CCRTA’s prioritization of both maximizing coverage and supporting the smart growth policies of the towns and the Cape Cod Commission.

Fixed route on-time performance data prior to FY 2020 were captured by stop and did not provide a reliable measure of a route’s overall performance. CCRTA has redefined this metric in partnership with MassDOT as the percentage of trips that leave their origin within 5 minutes of the scheduled departure time. CCRTA describes its historical fixed route on-time performance as challenging, particularly during the summer, when congestion follows significantly more stochastic patterns than more predictably congested urban areas. Absent an investment in capital transit priority treatments such as signal prioritization, que jumpers, or dedicated bus lanes, CCRTA is limited in how much it can affect one-time performance. Nevertheless, CCRTA has been able to achieve some recent improvements due to proactive interventions.

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25 [https://www.capecodcommission.org/our-work/rpp](https://www.capecodcommission.org/our-work/rpp)
On-time performance for demand response is defined as the percentage of trips that deliver passengers to their destination no later than the scheduled drop-off time. Historical on-time performance for demand response is shown on Figure 39. Both weekday and weekend on-time performance has been steadily increasing since FY 2016. While the effects of the COVID-19 pandemic have negatively impacted most performance metrics, it has actually improved CCRTA's on-time performance, as the typically congested summer on Cape Cod was much less severe during the calendar year 2020 peak season.

**Figure 39. On-time Performance (FY 2015–FY 2019)**

![Graph showing on-time performance](source)

Source: CCRTA

Customer service complaints are compiled at the Operations Center, documented, and responded to thoroughly and expeditiously. While CCRTA does not formally distinguish between valid and invalid complaints, they observe a ratio consistently below 0.5 total complaints per thousand. Customer service phone hold times, shown on Figure 40, have averaged approximately 45 seconds for the past 3 years.
Asset Management

Information regarding CCRTA's fleet and facilities, including TERM rating and ULB, are documented in Section 4.3. The following section describes CCRTA performance across several uniformly reported metrics related to asset maintenance and operational safety. Consistently reported data such as these can help to document historical trends and may be useful if incorporated into CCRTA's performance monitoring framework.

MassDOT collects information from all RTAs regarding the average mileage between road calls. Road calls occur as a result of a mechanical failure of an in-service vehicle that may cause a delay to service or removal of bus from service until a repair is made. FY 2015 to FY 2019 data for CCRTA are shown on Figure 41. This information helps categorize the maintenance needs of CCRTA's existing fleet. As shown, fixed route vehicles required road calls approximately every 10,000 miles on average, while demand response vehicles could often go 20,000 to 40,000 miles without a road call.
Figure 41. Average Mileage Between Road Calls (FY 2015–FY 2019)

Source: MassDOT, RTA Service Reports, FY 2015-FY 2019

MassDOT collects data on preventable accidents (any accident in which the driver failed to exercise every reasonable precaution to prevent the accident) across all RTAs in the state. Figure 42 summarizes CCRTA preventable accidents by mode. There were zero preventable accidents reported for demand taxi. As shown, total system accidents have been decreasing since FY 2015, with no preventable accidents on any mode in FY 2019.
Historical accident and injury rates are presented on Figure 43 and Figure 44, respectively. As shown, no reportable safety events or injuries occurred in 2019. No fatalities occurred between 2015 and 2019.

**Source:** MassDOT, FY 2015 to FY 2019 RTA Service Reports

**Figure 43. NTD Reported Safety Events per 100,000 VRM (2015–2019)**

**Source:** NTD, 2015-2019
Financial Performance

Cost effectiveness measures the effectiveness of the system from a financial standpoint – how well the dollars put into the system are being used to produce trips. Typical cost effectiveness indicators include cost per passenger, cost per mile, cost per hour, farebox recovery, and transit investment per passenger. A summary of financial performance metrics for fixed routes is provided in Table 22, and demand response financial metrics are provided in Table 23.

### Table 22. Fixed Route Financial Efficiency (FY 2019)

<table>
<thead>
<tr>
<th>Route</th>
<th>Cost/Mile</th>
<th>Cost/Hour</th>
<th>Cost/Passenger</th>
<th>Investment/Passenger</th>
<th>Farebox Recovery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sealine</td>
<td>$6.60</td>
<td>$65.50</td>
<td>$9.33</td>
<td>$8.06</td>
<td>13.6%</td>
</tr>
<tr>
<td>WHOOSH*</td>
<td>$14.10</td>
<td>$123.81</td>
<td>$17.08</td>
<td>$14.66</td>
<td>14.2%</td>
</tr>
<tr>
<td>Barnstable Villager</td>
<td>$8.03</td>
<td>$68.83</td>
<td>$13.05</td>
<td>$11.52</td>
<td>11.7%</td>
</tr>
<tr>
<td>Hyannis Loop*</td>
<td>$7.88</td>
<td>$71.88</td>
<td>$22.57</td>
<td>$20.85</td>
<td>7.6%</td>
</tr>
<tr>
<td>H2O Line</td>
<td>$5.21</td>
<td>$69.91</td>
<td>$10.77</td>
<td>$9.33</td>
<td>13.4%</td>
</tr>
<tr>
<td>Provincetown/Truro Shuttle*</td>
<td>$6.64</td>
<td>$58.01</td>
<td>$4.29</td>
<td>$1.29</td>
<td>70.0%</td>
</tr>
<tr>
<td>Flex</td>
<td>$6.11</td>
<td>$85.87</td>
<td>$16.01</td>
<td>$14.44</td>
<td>9.8%</td>
</tr>
<tr>
<td>Hyannis Shuttle*</td>
<td>$11.92</td>
<td>$109.66</td>
<td>$8.66</td>
<td>$8.66</td>
<td>0.0%</td>
</tr>
</tbody>
</table>
## Table 22. Financial Efficiency (FY 2019)

<table>
<thead>
<tr>
<th>Route</th>
<th>Cost/Mile</th>
<th>Cost/Hour</th>
<th>Cost/Passenger</th>
<th>Investment/Passenger</th>
<th>Farebox Recovery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bourne Run</td>
<td>$3.46</td>
<td>$65.22</td>
<td>$44.34</td>
<td>$42.86</td>
<td>3.3%</td>
</tr>
<tr>
<td>Sandwich Line</td>
<td>$4.67</td>
<td>$68.51</td>
<td>$17.52</td>
<td>$16.19</td>
<td>7.6%</td>
</tr>
<tr>
<td>Bus System Average</td>
<td>$5.91</td>
<td>$71.45</td>
<td>$11.94</td>
<td>$10.31</td>
<td>13.7%</td>
</tr>
<tr>
<td>Massachusetts Average**</td>
<td>$7.24</td>
<td>$97.20</td>
<td>$5.29</td>
<td>$4.47</td>
<td>15.4%</td>
</tr>
<tr>
<td>National Average</td>
<td>$11.15</td>
<td>$133.99</td>
<td>$4.92</td>
<td>$3.83</td>
<td>22.1%</td>
</tr>
</tbody>
</table>

*Rows highlighted yellow are seasonal routes.
*Data reflect Hyannis Loop and Hyannis Shuttle route alignments, which were replaced in FY 2020 by the Hyannis Crosstown and Hyannis Area Trolley, respectively.

**Massachusetts average excludes MBTA.

## Table 23. Demand Response Financial Efficiency (FY 2019)

<table>
<thead>
<tr>
<th>Route</th>
<th>Cost/Mile</th>
<th>Cost/Hour</th>
<th>Cost/Passenger</th>
<th>Investment/Passenger</th>
<th>Farebox Recovery</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCRTA Demand Response</td>
<td>$4.23</td>
<td>$61.60</td>
<td>$33.65</td>
<td>$11.91</td>
<td>64.6%</td>
</tr>
<tr>
<td>Massachusetts Average*</td>
<td>$4.38</td>
<td>$59.86</td>
<td>$28.28</td>
<td>$25.95</td>
<td>8.3%</td>
</tr>
<tr>
<td>National Average</td>
<td>$4.33</td>
<td>$64.93</td>
<td>$32.92</td>
<td>$30.46</td>
<td>7.5%</td>
</tr>
</tbody>
</table>

*Massachusetts average excludes MBTA, CCRTA, and MRTA.

CCRTA tracks additional financial performance metrics including own source revenue, farebox recovery, and operating cost per vehicle revenue hour. Cost per hour is the overall cost to operate a route divided by the annual vehicle revenue hours of service provided for that route and is a measure of the financial efficiency of providing a particular service. A smaller cost per hour indicates more financially efficient routes and/or faster operating speeds. Among fixed routes, the Provincetown/Truro Shuttle had the lowest cost per revenue hour of service and the WHOOSH Trolley and Hyannis Shuttle (replaced) had the highest costs, as shown on Figure 45. Several factors contribute to the high degree of variability in CCRTA's FY 2019 fixed route costs, which range from $58.01 to $123.81 per revenue hour:

- The Whoosh Trolley and Hyannis Shuttle were operated by Cape Destinations until the summer of 2019 (first few months of FY 2019). At that time, CCRTA purchased five vehicles from Hometown Trolley and MV Transportation took over operations.
- In FY 2019, CCRTA allocated revenue hours by hourly pay for drivers, such that costs per hour of service often reflected labor irregularities, such as when a driver begins to incur overtime and how many pay periods fall within a particular month. This allocation formula has since been revised and route-level costs per hour are expected to shift as a result.
Farebox recovery measures the percentage of operating cost covered by fares and is an outcome heavily influenced by the ridership productivity of a route against its total operating cost, as well as the fare policy of the system. It is calculated by dividing fare revenue by operating cost. As shown on Figure 46, the Provincetown/Truro Shuttle has by far the greatest farebox recovery, with fares covering 70 percent of operating costs. The four routes with the lowest farebox recovery have either been recently replaced (Hyannis Loop and Hyannis Shuttle) or have undergone recent service changes (Bourne Run and Sandwich Line).

Figure 45. FY 2019 Cost per Revenue Hour by Fixed Route

Source: CCRTA
In FY 2019, CCRTA's own-source revenue was 2.84 percent, up 12 percent from a FY 2018 baseline of 2.53 percent. This measure is defined as the total of all directly generated non-fare revenue sources (such as advertising, vending, and parking fees at HTC) divided by CCRTA's total annual operating budget for transit (not inclusive of its HST services) and reflects CCRTA's goal of increasing revenue from such sources as parking and advertising in order to grow without having to burden riders with a fare increase.

Peer Evaluation

As part of the CRTP, a peer review was prepared for each RTA to gain an understanding of how similarly positioned systems perform across a variety of metrics. However, traditional peer selection and analysis methodology relies heavily on annual data reported to the NTD, which can skew understanding for a system like CCRTA, which see a high degree of seasonal variation and whose demand response service numbers are inflated due to inclusion of its HST coordination in NTD reporting.

In lieu of a traditional peer analysis, this section explores areas of similarity and difference between CCRTA and other Massachusetts RTAs in order to better understand potential opportunities and efficiencies.

Comparative service metrics are summarized in Table 24; 2018 NTD data are used to ensure a consistent source across all transit properties.

As shown in Table 24, CCRTA operates the second largest service, after PVTA, in terms of costs, revenue miles, and revenue hours of service provided. However, much of this service takes the form of HST brokerage. Other RTAs with an HST brokerage responsibility include MART, GATRA, CATA, BRTA, and FRTA. Focusing on fixed route ridership alone, MART,
GATRA, MWRTA, and BRTA transported between 530,000 and 730,000 fixed route passengers, compared to CCRTA's 614,000 2018 fixed route ridership.

### Table 24. Peer Systems Operating Data (2018)

<table>
<thead>
<tr>
<th>System</th>
<th>Ridership</th>
<th>% Demand Response</th>
<th>Operating Budget</th>
<th>Revenue Miles Operated</th>
<th>Revenue Hours Operated</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCRTA</td>
<td>1,165,140</td>
<td>56%*</td>
<td>$25,006,700</td>
<td>5,670,617</td>
<td>408,553</td>
</tr>
<tr>
<td>MART</td>
<td>933,473</td>
<td>76%*</td>
<td>$16,878,132</td>
<td>3,250,559</td>
<td>212,012</td>
</tr>
<tr>
<td>PVTA</td>
<td>11,223,169</td>
<td>37%</td>
<td>$46,531,050</td>
<td>7,947,598</td>
<td>586,575</td>
</tr>
<tr>
<td>WRTA</td>
<td>3,315,655</td>
<td>29%</td>
<td>$24,343,106</td>
<td>3,056,242</td>
<td>242,146</td>
</tr>
<tr>
<td>SRTA</td>
<td>2,706,197</td>
<td>26%</td>
<td>$17,782,116</td>
<td>2,095,348</td>
<td>158,568</td>
</tr>
<tr>
<td>GATRA</td>
<td>1,046,478</td>
<td>50%*</td>
<td>$15,501,816</td>
<td>3,261,468</td>
<td>216,961</td>
</tr>
<tr>
<td>MWRTA</td>
<td>827,638</td>
<td>49%</td>
<td>$10,608,370</td>
<td>2,254,868</td>
<td>166,033</td>
</tr>
<tr>
<td>MVRTA</td>
<td>2,194,507</td>
<td>34%</td>
<td>$17,008,039</td>
<td>2,274,805</td>
<td>182,471</td>
</tr>
<tr>
<td>BAT</td>
<td>2,832,408</td>
<td>34%</td>
<td>$15,505,752</td>
<td>1,998,335</td>
<td>173,522</td>
</tr>
<tr>
<td>LRTA</td>
<td>1,525,986</td>
<td>32%</td>
<td>$11,839,052</td>
<td>1,929,239</td>
<td>137,585</td>
</tr>
<tr>
<td>CATA</td>
<td>220,650</td>
<td>34%*</td>
<td>$2,494,251</td>
<td>323,479</td>
<td>22,903</td>
</tr>
<tr>
<td>BRTA</td>
<td>570,503</td>
<td>24%*</td>
<td>$6,334,181</td>
<td>1,280,573</td>
<td>78,232</td>
</tr>
<tr>
<td>VTA</td>
<td>1,360,497</td>
<td>7%</td>
<td>$5,276,228</td>
<td>1,173,303</td>
<td>75,304</td>
</tr>
<tr>
<td>FRTA</td>
<td>149,242</td>
<td>36%*</td>
<td>$2,960,251</td>
<td>588,549</td>
<td>38,247</td>
</tr>
<tr>
<td>NRTA</td>
<td>283,330</td>
<td>9%</td>
<td>$2,040,810</td>
<td>219,763</td>
<td>21,283</td>
</tr>
</tbody>
</table>

*MassHealth HST providers may include human service trips in NTD reported demand response totals.*

A comparison of key service metrics for CCRTA, MART, GATRA, and BAT are presented in Table 25. These agencies are characterized by provision of HST brokerage services and a roughly similar fixed route ridership. Metrics are given for both the system-wide and fixed route mode levels. As shown, CCRTA services have the lowest productivity per revenue hour for both system-wide and fixed route profiles. This is despite having a more average productivity per mile of fixed route and is likely a result of the Cape’s traffic issues, adding to the time vehicles must spend in service.

CCRTA customers make longer trips (per boarding) than any other RTA in the Commonwealth, with an average trip length over 11 miles. CCRTA is also the only RTA in the Commonwealth whose fixed route customers make longer trips than its demand response and HST brokerage customers. While this may be considered an efficiency in some respects, given that a fixed route trip is cheaper to provide than a demand response trip, the preponderance of these long inter-city trips may lead to lower reportable ridership and revenues (compared to systems with shorter routes and forced transfers) as well as seasonal vehicle crowding (as fewer customers get on and off mid-route). In some cases, a direct inter-city connection without transfer can be
advantageous for riders, even if not ideal from a federal reporting and revenue generation perspective. However, where trip distances and travel times between major destinations are inflated due to circuitous routing or unproductive dog-legs, this can negatively affect customer experience as well as the cost to provide the trip.

CCRTA's cost per fixed route passenger is average among similarly situated providers but is noticeably less efficient than its base cost per hour of service, which is among the lowest costs for service in the state. CCRTA has a similar level of transit investment per passenger trip, compared to peers, as a result of a much higher than average farebox recovery, especially for its demand response services.

Table 25. Peer System Performance (2018)

<table>
<thead>
<tr>
<th>System</th>
<th>UPTs/Mile</th>
<th>UPTs/Hour</th>
<th>Cost/Hour</th>
<th>Cost/UPT</th>
<th>Investment/UPT</th>
<th>Farebox Recovery</th>
<th>Average Trip Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCRTA (System-wide)</td>
<td>0.21</td>
<td>2.85</td>
<td>$61.21</td>
<td>$21.46</td>
<td>$10.06</td>
<td>53.1%</td>
<td>11.7</td>
</tr>
<tr>
<td>MART (System-wide)</td>
<td>0.36</td>
<td>5.50</td>
<td>$79.61</td>
<td>$14.49</td>
<td>$10.64</td>
<td>26.6%</td>
<td>6.3</td>
</tr>
<tr>
<td>GATRA (System-wide)</td>
<td>0.32</td>
<td>4.82</td>
<td>$71.45</td>
<td>$14.81</td>
<td>$14.03</td>
<td>5.3%</td>
<td>5.2</td>
</tr>
<tr>
<td>BAT (System-wide)</td>
<td>0.45</td>
<td>7.29</td>
<td>$80.97</td>
<td>$11.10</td>
<td>$9.67</td>
<td>12.9%</td>
<td>9.2</td>
</tr>
<tr>
<td>CCRTA (Fixed Route)</td>
<td>0.49</td>
<td>6.11</td>
<td>$66.76</td>
<td>$10.93</td>
<td>$9.32</td>
<td>14.8%</td>
<td>13.7</td>
</tr>
<tr>
<td>MART (Fixed Route)</td>
<td>0.78</td>
<td>11.77</td>
<td>$132.13</td>
<td>$11.22</td>
<td>$9.86</td>
<td>12.1%</td>
<td>4.2</td>
</tr>
<tr>
<td>GATRA (Fixed Route)</td>
<td>0.44</td>
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<td>$9.78</td>
<td>$8.53</td>
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</table>

Source: NTD
Appendix B Commonwealth Environmental Policies

Transportation is a leading producer of greenhouse gas emissions (GHG) in the Commonwealth, and the only sector identified through the Global Warming Solutions Act of 2006 (GWSA) with a volumetric increase in GHG emissions; meaning that any effort to reduce emissions must significantly target the transportation system. In 2008, through the passage of the GWSA, Massachusetts committed to reduce its GHG emissions by 80 percent below 1990 baseline levels by 2050. Commonwealth policies and action on environmental sustainability in the transportation sector can be summarized by a series of executive orders, regulations, and recommendations to achieve the Commonwealth’s goal of reducing transportation-related emissions by 40 percent over the next 20 years, helping to meet the emissions reduction goals of the GWSA.

Massachusetts is establishing an integrated climate change strategy for the Commonwealth through the implementation of Executive Order 569, which was issued in 2017 and had major elements codified in 2018. It aims to develop a roadmap for climate mitigation and adaptation for the Commonwealth.

Sustainability requirements for transportation are summarized in 310 CMR 60.05, where the Climate Protection and Green Economy Advisory Committee advises the Executive Office of Energy and Environmental Affairs on measures to reduce GHG emissions in accordance with the GWSA. The purpose of 310 CMR 60.05 is to assist the Commonwealth in achieving the GHG emissions reduction goals, and to establish an annually declining aggregate GHG emissions limit for MassDOT, as well as general requirements for determining aggregate transportation GHG emissions in the transportation planning process.

To be in line with this regulation, RTAs in particular must conduct comprehensive service reviews; identify service enhancements to increase passenger ridership; identify vehicle technology and operational improvements that can reduce aggregate transportation GHG emissions; and work within the MPO process to prioritize and fund GHG reduction projects and investments.

In Executive Order 579: Establishing the Commission on the Future of Transportation in the Commonwealth, the goal is to determine “how to ensure that transportation planning, forecasting, operations, and investments for the period from 2020 through 2040 can best account for likely demographic, technological, climate, and other changes in future mobility and transportation behaviors, needs and options.” This will be accomplished by further investigating topics such as climate and resiliency, transportation electrification, autonomous and connected vehicles, transit and mobility services, and land use and demographics. In 2019, the Commission on the Future of Transportation released their report, Choices for Stewardship: Recommendations to Meet the Transportation Future.

The report provides five recommendations with a planning horizon of year 2040. The recommendations include (1) modernizing existing transportation assets; (2) creating a 21st Century “mobility infrastructure” to prepare the Commonwealth for emerging changes in transportation technology and behavior; (3) substantially reducing GHG emissions from the transportation sector; (4) coordinating and modernizing land use, economic development, housing, and transportation policies and investment in order to support resilient and dynamic regions and communities throughout the Commonwealth; and (5) changing current

transportation governance and financial structures in order to better position Massachusetts for the transportation system that it needs in the next years and decades.

Current RTA-specific sustainable practices are described in Chapter 4 and recommendations for future sustainable practices are described in Chapter 8.
Appendix C Outreach Backup Materials

Stakeholder Meeting Summaries

MEETING NOTES

August 6, 2020
Comprehensive Regional Transit Plan
CCRTA Key Stakeholder Video Conference
3:00 PM – Via Zoom

ATTENDEES:  Chris Hottle, Provincetown Council on Aging
Glen Cannon, Town of Bourne
Brenda Vazquez, Town of Dennis
Richard Tavarez, Keystone Place at Buzzards Bay (Senior Housing)
Noah Berger, CCRTA
Will Calves, AECOM
Kristen Lueken, AECOM
Amanda Smith, City Point Partners
Martin Nee, City Point Partners

Will Calves opened the meeting with a brief introduction and then asked CCRTA stakeholder attendees to introduce themselves. He then presented a brief PowerPoint focusing on the layout of the 5-Year Comprehensive Regional Transit Plan’s. His presentation focused on the project approach; project tasks (including public/stakeholder engagement strategy), needs, and goals.

In his remarks, Will acknowledged various unique elements of CCRTA. For example, he pointed out that the study team has taken into consideration the seasonality of CCRTA’s ridership, that Hyannis is the hub of the system, and that Cape Cod is unlike an urban grid, so it is not easy to find detours when traffic backs up. He also summarized the team’s understanding of current services and routes.

The presentation was followed by a discussion in the form of a Q&A as follows:

Q. What are the issues and concerns of key stakeholders? What can be done better? What do you folks see as local concerns, that you think is important for CCRTA to know and understand?

A. Brenda:

- We have strong relationship with Councils on Aging (COAs) because of the aging population dynamics on the Cape. We are focused on providing service improvements that will accommodate this aging population.
- We also have challenges in the workforce with younger people who can’t afford to live on the cape. We need to plan for the future in a way that also accommodates the younger generation.
- In planning for the future, we need to collect data that shows who wants to use transit. We need to represent all interests.
- We need to think out of the box. The SmartCard was a great example of this. We need to attract 20-somethings who are not driving. Young people are attracted to technology solutions.
- Perhaps we should do a focus group on technology.
- If routes can’t be changed, we need to figure out other ways to improve the system.
• Workforce housing and affordable housing are issues that affect transit.

**COMMENT: Will:** This is good to hear about affordable housing and workforce housing. These elements are a huge part of the equation.

Glenn: Regarding fare collection, cash is not a feasible solution.

• Higher visibility for CCRTA would be a good thing. For the general public, just seeing buses is a message that this is an area “where I could be riding a bus”.
• More connections in Bourne would be great.
• Working across Cape Cod, every town has a trolley system. Could CCRTA get into this? The more people who use it, the better for traffic.
• Provincetown is a great example for traffic and parking solutions. They have remote parking lots for people who can’t find a space downtown. The trolley loop is a great thing. Across Cape Cod, this model would work great.
• Also, connections to bike paths and more multimodal trips are desirable. (E.g., CCRTA adjusted their route to meet the Cape Flyer. We should do this to meet bike paths.

Q. Will: CCRTA serves the entirety of the Cape. Are there areas that you feel are not being served by the fixed route regularly scheduled services?

A. Brenda: There’s no way to get to Mashpee. It would make sense to have more connector routes. Could smaller connector vehicles be used to connect various routes? In Provincetown, there are many challenges accessing transportation. It’s very difficult on the Cape to get to areas off the main route.

**COMMENT – Will:** – When you get away from urban centers, is there a pedestrian safety or deterrence issue? Could there be pedestrian improvements that could help?

A. Brenda: Absolutely. The population continues to age and grow so more folks have limited mobility. Looking at ped access is important, especially looking out 5-years.

A. Glenn: A few years ago CCRTA did a study. The number one issue was people were afraid to walk out to the bus stop, e.g., crossing Rte. 28, etc. Pedestrian infrastructure needs are a big issue.

A. Chris Hottle: Here is my Provincetown perspective. Adequate workforce housing is big issue on the Cape. From a statewide level, it takes a while to process and understand what the demographic needs of the transit system are. The older adult population is increasing. The percentage of people over 60 is increasing. In Provincetown the over 60 population is 48% of the whole, vs. the statewide average of 23%. This drives everything that is happening on the cape. Accessibility is vital. The over 60 population is one of the biggest determinants of services on the cape. It’s great having a shuttle. Seasonal workers and locals use it, but most residents do not. One impediment to transit on the Cape is the time it takes to use the system to get from point A to point B. The staff at CCRTA have been wonderful in connecting with the community at large, especially with COAs. 1-2 meetings a year and a lot of partnering is taking place with COAs. This is truly commendable. COAs are challenged when services are so far away, like for Provincetown.

Q. Will: Demand response is not available Cape-wide. Does this prevent residents from not getting healthcare?

A. Chris Hottle: We have to work with healthcare providers to change riders’ appointments often if the rider can’t get a DART ride. Can’t say if riders are going without healthcare service, but it certainly makes it challenging to get to appointments. In one case, the transportation on DART would have been
Q. Will: Do you feel there are better ways to engage customers than demand response? What are the barriers you see, if any?

A. Brenda: Changes in population can be a barrier to service. We need to engage residents and solicit feedback. We need to ask the question, “what would it take to make you ride”. Is it the older adult population trying to get to an appt? Do we have to cater more to the less independent population? Social media and technology are effective.

COMMENT – Will: The CCRTA drivers have mentioned that more riders want to get their info from smartphones.

Q. Will: Do you feel there is a digital divide? There was a concern in March that older populations would be left out, but that doesn’t seem to be the case as the COVID experience has played out.

A. Chris Hottle: For me, I think the digital divide concern is a stereotype. There were people who were not connected but because of a lack of technology. There are plenty of older people with devices. COVID has been a catalyst to older people using their tech devices. It brought people into the digital fold. We are trying to get a sense of who we are missing but it is not an age thing. It is more a personal preference. Perhaps technology could be an affordability issue with devices and internet access.

COMMENT Will: Affordability and funding of devices need to be considered when analyzing digital needs.

Q. Will: Safety. Comfort. The perception of security. Does it come up? Is it something that you see, hear, as a deterrent to ridership?

A. Chris Hottle: Not in Provincetown. Never heard this as an issue.

Q. Will: What about fare structure? Is it appropriately priced? Equitably priced? Are there incentive that should be pursued?

A. Brenda: SmartCard appeals to younger users. Older users will have a revelation when they find they can use their phone. There is good potential for growth with SmartCard.

A. Chris Hottle: Most Provincetown people don’t go far beyond Orleans and fares don’t seem to be an issue.

Q. Will: Are there aspects of development on the cape we should be aware of (aside from workforce housing).

A. Chris Hottle: Provincetown. Year-round homeowners are less than 30%of the population vs 70% in the past. It is a 10 year waiting list to get into senior housing.

Q. Will: Pandemic. How do you feel it might be changing long-term for CCRTA.

A. Brenda: COVID has exposed a lot. We are still learning. One of the things we have noticed is a greater adoption of technology during the pandemic—which leads me to believe we will have to increase the use of things like SmartCard. In terms of transportation and mobility, CCRTA is devoted to
finding out how to make technology work on Cape Cod. Innovation, partnership, collaboration, is increasing on the cape in terms of transportation solutions.

**A. Chris Hottle:** COVID has changed the quality of life. Social isolation on the Cape is a big issue. It’s not just about getting to work. Transit is a key to combatting social isolation, not just commuting, shopping, etc. It brings people together.

Will thanked everyone for their input and the meeting was adjourned.

# # #
August 12, 2020
Comprehensive Regional Transit Plan
CCRTA Key Stakeholder Video Conference #2
11:00 AM – Via Zoom

Attendees: Maria Oliva, Cape Cod Canal Chamber of Commerce
Lynn Waterman, Mashpee Council on Aging
Judy Wilson, Orleans Council on Aging
Toni Nogueira, CCRTA
Vaira Harik, Town of Barnstable
Noah Berger CCRTA
Will Calves, AECOM
Kristen Lueken, AECOM
Amanda Smith, City Point Partners
Martin Nee, City Point Partners

Presentation:
Will Guillermo, team lead for the MART/MassDOT study team, opened the meeting by welcoming those in attendance and proceeded with a PowerPoint presentation highlighting the following points (See. Attached PPT).

- Team Introductions
- Project Approach
- Overview of Project
- Project Tasks, including Public/Stakeholder Engagement Strategy
- Goals and Needs
- Current Service

Discussion:
General discussion topics were facilitated by Will Guillermo.

Will – Are there local concerns folks feel we need to highlight and focus on?

Judi – Transportation tends to be on the higher list of needs for economically disadvantaged people. Transportation should be a filter when we look at development.

Will - Do you think there is a disconnect between transportation and housing development?

Judy – Yes, there is a disconnect. Planners are in a position where they have to take land where they can get it, but it’s not always connected to the transportation system. I know this is an issue for family housing. I would love to see this addressed.

Marie – We could do a better job of communicating transportation services. We have 1500 recipients of email in the Chamber of Commerce database and we should use this to get information out to these people. She suggested CCRTA piggyback on this database to send materials to organizations.

Will – Do you feel marketing CCRTA services could be improved?
Marie – Yes, the Chamber can’t always answer constituent questions on the service but we can help get the word out to a broader audience.

Lynn – Cape Cod towns are heavily populated with older adults. This is a key issue. This makes CCRTA unique in terms of its importance to older adults. The population of older adults have to work into 70s and 80s. They need transit. If they’re no longer driving, their ability to get to work is severely impacted.

Vaira – A partial approach to dealing with transit might be sub-regional dispatch. Upper, Lower, and mid Cape regions might benefit by more localized services. Scheduled, localized services would be ideal. Not just the line-hauls. Local transit is an organic link to the way people live and travel. You can’t plan a professional life without a fixed schedule to get work and appointments.

Will – What do you hear about the flag-stop policy?

Vaira – Trying to get from point-A to point-B is challenging. It’s frustrating when a bus does not show up when it is supposed to. It’s an issue. No one can rely on a random policy. Riders need something that is reliable on a schedule basis. Flag-stop is great, but you need to know the bus is coming.

Will – Do you feel enough folks know about fixed-route bus service?

Vaira – I don’t know. There’s no situation where CCRTA has not been exceptional at getting info out. That said, the more marketing the better.

Marie – A lot of potential riders still don’t know what the CCRTA is. They don’t know what the county does. The Chamber is interested in attracting more potential riders.

Will mentioned that visibility, the sight of a bus going by, is a major benefit in terms of marketing.

Will – In terms of cost of using service, do you hear anything about cost or ease of payment?

Lynn – Generally speaking, people think the service is affordable. There is, however, a need for a fair amount of coaching. People need a person who they can call to explain to them how the fixed route and door-to-door service works and how they can access the system to meet their needs. She often wondered if CCRTA could offer a "coach" to explain the nuances and details of the service to people on the phone.

Will – A lot of systems call these “coaches” travel trainers. Noah and Toni are listening in on this concept.

Judy – I think the issue is urban familiarity. People who have aged on the Cape are not familiar with transit because they drove cars all their lives. Maybe a hotline would be a good idea. Transit is just not intuitive to older adults. It’s hard to get people to come to a travel seminar until they have the need.

Will – Technology. Is there a digital divide where potential riders are missing out because they have technology?

Judi – Absolutely. Lack of affordability for devices and technical knowledge, however, are 2 separate causes for the disconnect. I think there is more of an affordability is a gap than a technical knowledge gap. Free wifi is not available and a lot of people cannot afford a data plan on their phone. Free WiFi
might help considerably. On the other hand, some people who need the transit don’t want to embrace tech. mainly older seniors.

Will – Any issues of safety or security?

Judi – Never heard of it being a problem with CCRTA.

Lynne - Maybe one complaint over several years. People feel the system is very safe.

Will - What about pedestrian infrastructure? Are services running in areas where folks can get to them because there are no sidewalks?

Judi – Not sure because there doesn’t seem to be an appetite for a lot of Cape people to change their environment. Sidewalks are key to transit, however, Cape visitors and summer residents tend to use them more than year-round residents. Not sure if sidewalks are the issue or the attitude of potential riders to embrace transit.

Will – In terms of the pandemic, do you see changes, trends? Will the pandemic impact services?

Lynne – The real estate market is changing. More people are moving to the Cape to get out of cities. It is too early to tell if the demographic will change and new residents will be dependent on transit. This is a good question and something to watch. One impact is the shuttle only allowing one person on board. One important point – seniors are not a homogenous group. The age span is 40 years. The issue of cognizant function is a concern.

Marie – There are 15 Chambers on the Cape. Their email lists are vast. We should market these lists more with information on CCRTA.

Will – This is a good recommendation. We will make a note of this.

Will - Anything else we may not have covered? Nope? This was a very useful call. Please feel free to reach out if you want to share anything.

# # #
Presentation:
Will Guillermo, team lead for the MART/MassDOT study team, opened the meeting by welcoming those in attendance and proceeded with a PowerPoint presentation highlighting the following points (See Attached PPT).

- Team Introductions
- Project Approach
- Overview of Project
- Project Tasks, including Public/Stakeholder Engagement Strategy
- Goals and Needs
- Current Service

Discussion:
Will stated that of CCRTA is to provide a safe, reliable, efficient and affordable transit system.

- Services range from Provincetown to Flex-route. The core services are surrounding the Hyannis Transportation Center. Seasonal service is a prominent feature of CCRTA, which is uncommon nationally.

- The discussion topics are meant to be a discussion guide. Feel free to open it up to other issues if desired.

Will then asked for the self-introduction of callers.

Will – Two overlying issues that are prominent on the Cape, school children and elders. Perhaps it would be helpful to use COVID-19 as a catalyst to help folks view transit as viable option.

Senator Moran – CCRTA has an important role in terms of its “Jeopardy” game. This pandemic has brought the need for CCRTA to schools. COVID-19 is expediting need for a new look at transit.

Madeline – Transit is a moving target with schools. Every Wednesday students are remote. Some students will be home Monday to Wednesday, and others home Wednesday through Friday. This is
forcing families to rethink employment and how they can move around as individual needs dictate. This is a significant community issue for the immediate future. Are there opportunities to get youngsters on transit that can work? On-demand services on a per-boarding basis are more expensive than fixed.

Will – Are there any longer-term land use changes that we should be aware of?

Wendy - Not sure what the solution is. Upper Cape seems ready to reopen the economy and schools sooner than Outer Cape. There is a need for more interconnections of the transit system which would encourage rail as a viable mode of transit in the next decade.

Senator Moran – More outreach and the acceptance that human behavior is not always open to new transportation models needs to be recognized. Perhaps the need for new Bridges and the impacts of that megaproject can help people think differently about embracing new options to move around.

Steven – Community Activity Centers are key and need to be the targets for transit. They can support more growth if transit is focused on them. Transit can effectively serve these activity areas because of density.

Will – Is there a walkable issue on the Cape? One of the things we heard is the idea that pedestrian infrastructure goes beyond scope of 5-Year Plan. Are people feeling safe to walk to their transit connections? Are there pedestrian infrastructure issues?

Steven – I have firsthand experience standing on side of Route 28 with a small child. This can be treacherous. Pedestrian issues are a barrier to entry to transit. We are studying and identifying key gateways that will advance the useability of the system. Pedestrian issues are a big key to making transit grow on the Cape.

Will – is pricing and issue? Fares? Fare media?

Senator Moran – The price-point from a general ridership perspective is important.

Gail - J1 users: There are safety considerations in Orleans. It is very difficult to expect anyone to get on bus on Orleans and get to Hyannis. It takes 2 hours in the summer. We need to look at the Cape in sections and consider interconnectivity and micro-transit. Is there a way to make shorter trips? CCRTA has been very supportive of the J1 program. They have been able to get lights and neon backpacks so that riders are more visible on the dark roads and highways. We also need to look at private fundraising efforts to provide non-RTA buses to do a loop between main resorts when employees are getting out of work. If this could be done publicly it would be wonderful.

Will - We are aware of the desire for more services like the shuttle in Provincetown. Also, we have heard the J1 Season needs to longer and the span of service during day needs to be longer.

Jim – Funding coming down from the Transportation Climate Initiative should be considered. The assumption that on-demand is more expensive should be challenged. I wonder to what degree the planning includes reducing traffic? This is where Uber came from. School kids get rides at different times in the afternoon. I’m not convinced that a fleet of some kind of vehicles would be more expensive if they were out on the street all the time transporting school children and adults. Are we taking into consideration the cost of parents picking up kids with 5 kids and 5 separate cars? Workers can be grouped and transported as well. We need to factor in the cost of individuals getting individual rides home when considering on-demand costs.
Comprehensive Regional Transit Plan

Will – There are locations and environments where on-demand would work better. On-demand or Flex could be very useful in certain areas which is incumbent on us to look into.

Will – Electrification, is this an important element?

Jim – This is an extremely important priority. Land use behind the Airport is an example. There are mostly older people living there who are close to shopping. But there’s not enough frequency in transit to service them. A local, small vehicle would work best for them rather than forcing them to get into cars.

George – The on-demand app needs to be worked out. This would address small cluster areas. Also, Bridge Improvement. We need to look at road infrastructure leading up to the bridges. We need to see a good product worked out sensibly here. Buzzards Bay is changing demographically. CCRTA has been proactive in trying to get the extra population of seniors in transit. A lot of major infrastructure improvements are slated to take place on the Cape over the next 5 years. The pandemic will pass, and bus service will pick up again.

Will – we want to look at micro-transit very closely on the Cape.

Jim – Kudos to Cape Flyer! Anything that can be done to promote it instead of driving needs to be expanded. Over 55 residential mega-projects drive the need for more transit. It is possible that public transportation could also work with P-Pod and this needs to be considered. We need to think out of the box and look at things that are worth considering.

Steven - Access to healthcare is a big challenge on Cape Cod. Need to keep this in the forefront.

Wendy - A lot of business models are being broken due to the pandemic (e.g., remote work, remote doctors visit. etc). Bus frequency is the only complaint with CCRTA. We need to look at ways to improve frequency. Also, smaller more nimble vehicles with clean fuel are also needed.

Donna – Demographic over the next 10 years will change. Regarding older adults, we need to get their buy-in by expanding hours and having facilities that are safe clean. People need to be able to sit down while waiting.

###
Public Outreach Survey Summary

As a primary tool to gather feedback from current riders and non-riders, the AECOM team worked closely with CCRTA staff to develop an online survey to gain a better understanding of stakeholder preferences regarding current services and elicit feedback about the desire for potential improvements or changes. The online survey for CCRTA opened to the public on June 3, 2020 and was open through August 5, 2020. The following is a summary of the survey results for the duration of the survey.

Survey Development and Publication

Through a series of bi-weekly meetings, the AECOM team and CCRTA staff developed a detailed list of survey questions to capture an understanding of critical data, including who uses and does not use CCRTA services; the incentives that drive ridership; the barriers to attracting more customers; and from a customer satisfaction perspective, how CCRTA is doing. In addition, the survey included questions to measure the frequency of use, routes used, connections to multimodal transit, level of COVID-19 concern, and future outlook. The survey was made available online in English and Spanish with an introduction question to select a language.

As a result of the COVID-19 pandemic and the required social distancing protocols mandated by the state, in-person public outreach events were cancelled and moved to a virtual platform. To drive traffic to the online survey, which was hosted on Survey Monkey, a series of email blasts urging participation were sent to an extensive list of stakeholder groups, major employers, community partners, elected officials, local chambers of commerce, and municipal website administrators. CCRTA posted a link to the survey on its website and a series of posts were shared and advertised on the CCRTA Twitter account. To further drive awareness, CCRTA also arranged to have a link to the survey posted at terminals and made survey flyers available on buses.

The survey was designed to be mobile-friendly and not require someone to be at a computer to fill it out. The survey link was accompanied by a QR code to enable a quick scan using a smart phone to direct immediately to the survey.

CCRTA Outreach Survey Summary

1. Please select a language.

A total of 403 respondents answered this question with 8 skipping it. Of the 403 who answered, 99 percent (399) selected English, and 1 percent (4) selected Spanish.
2. **Which category best describes you?**

A total of 338 respondents answered this question with 73 electing to skip it. Of the 338 respondents who answered this question, 51 percent (173) selected “Year-round Cape Cod resident”; 27 percent (91) selected “Visitor to Cape Cod”; 13 percent (44) selected “Owner of vacation home on Cape Cod”; 5 percent (16) selected “Seasonal rental”; 1 percent (4) selected “Work on Cape but live off Cape”; and about 3 percent (10) selected “Other (please specify).”

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3. What town do you live or stay in on Cape Cod?

A total of 330 respondents answered this question with 81 electing to skip it. Of those who responded, 14 percent (48) selected Hyannis; 12 percent (39) selected Yarmouth; 10 percent (33) selected Falmouth; 9 percent (31) selected Barnstable; 8 percent (27) selected Dennis; 7 percent (23) selected Bourne; 5 percent (18) selected Harwich; 5 percent (17) selected Provincetown; 3 percent (12) selected Mashpee; 3 percent (12) selected Brewster; 3 percent (12) selected Truro; 3 percent (12) selected Off Cape; 3 percent (10) selected Sandwich; 2 percent (8) selected Chatham; 2 percent (8) selected Eastham; 2 percent (8) selected Orleans; 1 percent (6) selected Wareham; and 1 percent (6) selected Wellfleet.

4. Do you use CCRTA services?

A total of 322 respondents answered this question with 79 electing to skip it. Of those who answered the question, 56 percent (188) selected “yes” and 43 percent (144) selected “no.”
5. How long have you been using CCRTA services?
A total of 279 respondents answered this question with 132 electing to skip it. Of those who answered, 43 percent (121) selected more than 4 years; 28 percent (78) selected less than 1 year; 13 percent (36) selected 1 to 2 years; 10 percent (30) selected 2 to 3 years; and 5 percent (14) selected 3 to 4 years.

6. Do you also use ridesharing services like Uber and Lyft?
A total of 341 respondents answered this question and 70 elected to skip it. Of those who responded, 59 percent (201) responded “No” and 41 percent (140) responded “Yes.”
7. **Do you often use Uber or Lyft as a substitute for CCRTA services?**

A total of 73 respondents answered this question with 338 electing to skip it. Of those who answered, 55 percent (40) selected “No” and 45 percent (33) selected “Yes.”

8. **Do you use CCRTA’s Dial-A-Ride Transportation (DART) service?**

A total of 199 respondents answered this question with 212 electing to skip it. 79 percent (157) selected “No” and 21 percent (42) selected “Yes.”
9. What is your primary travel purpose when you use CCRTA services?
A total of 187 respondents answered this question with 224 electing to skip it. Of those 187 who answered, 30 percent (57) selected “Recreation/Entertainment”; 22 percent (42) selected “Work”; 15 percent (29) selected “Shopping”; 11 percent (21) selected “Travel to other transportation modes”; 9 percent (17) selected “Healthcare Services”; 2 percent (4) selected school; and 9 percent (17) selected “Other (please specify).”

10. What are the top 3 places you like to travel to on the bus?
A total of 159 respondents answered this question and 252 skipped. This was an open-ended question. With three possible answers for each respondent, the combined total responses produced 395 separate answers. For summary purposes, the 395 answers were broken down into 8 general categories in the chart below. The largest category generated 189 answers listing specific town names.
11. Which CCRTA routes do you use? (Select all that apply).

A total of 161 respondents answered this question and 250 skipped. Of those 161 who answered, 47 percent (76) selected “H2O Hyannis-Orleans”; 47 percent (76) selected “H2O Hyannis-Orleans”; 34 percent (55) selected “Sealine”; 29 percent (47) selected “Barnstable Villager”; 27 percent (44) selected “Flex”; 26 percent (42) selected “Hyannis Crosstown”; 26 percent (42 selected “Provincetown/North Truro Shuttle”; 24 percent (40) selected “Hyannis Area Trolley”; 13 percent (21) selected “Bourne Run”; 11 percent (18) selected “Sandwich Line”; 9 percent (16) selected “Woosh Trolley”; 7 percent (12) selected “Patriot Limited.”
12. What is the biggest barrier to riding CCRTA service or riding CCRTA service more often?

A total of 189 respondents answered this question with 222 skipping it. Of the 189 who answered, 20 percent (38) selected “Bus routes are not direct/double back too much/take too long”; 19 percent (36) selected “Routes do not match desired destinations”; 18 percent (34) selected “Limited hours of operation”; 17 percent (32) selected “Limited Sunday/Weekend Service”; 16 percent (31) selected “Frequency of service”; 1 percent (3) selected “Cost of Service”; 1 percent (2) selected “Service reliability”; and 6 percent (12) selected “Other (please specify).”
13. Where would you like to go using CCRTA service that you are currently not able to? (If satisfied, leave blank).

A total of 136 respondents answered this question and 275 skipped it. Of the 136 who answered the question, 48 stated they were satisfied with the service. The remaining 88 respondents who answered entered 182 desired locations. This was an open-ended question and the responses varied considerably. In order to summarize, the data were separated into categories including Town or Local, Recreation, Intermodal Transit, Healthcare, Shopping, Work, Dining/Entertainment, Social Services, Religious institutions, and N/A. A second chart below depicts the number of times each town was entered as a desired destination.
14. What are the biggest improvements that CCRTA should invest in? (Check all that apply).

A total of 185 respondents answered this question and 226 skipped. The question allowed respondents to check multiple answer choices or enter specific answers beyond those provided in the “Other” category (See chart below). Of those 185 who answered the question, 47 percent (35) selected “More Sunday/Weekend service routes”; 42 percent (81) selected “Offer more frequency of service”; 37 percent (71) selected “More direct service/faster service”; 34 percent (64) selected “Later evening service”; 9 percent (18) selected “I am satisfied with the current service”; and 22 percent (35) selected “Other (please specify).” A second chart below breaks down the 35 “Other (please specify)” by category of specific recommendations entered.
15. Have you been riding CCRTA after the Governor issued a stay-at-home advisory in response to COVID-19?

A total of 186 respondents answered this question with 225 skipping it. 77 percent (144) responded “No” and 22 percent (42) responded “Yes.”

16. Do you intend to ride CCRTA after Massachusetts re-opens?

A total of 187 respondents answered this question with 224 skipping it. Of the 187 who responded, 88 percent (165) selected “Yes” and 11 percent (22) selected “No.”
17. Are you leery about using CCRTA because you fear that you will not be able to maintain social distancing?

A total of 189 respondents answered this question and 222 skipped it. Of those 189 who answered the question, 52 percent (98) selected “Yes” and 48 percent (91) selected “No.”

18. Are there specific actions CCRTA could perform to make you more confident about riding CCRTA after re-opening?

A total of 113 respondents answered this question with 298 skipping it. This was an open-ended question and responses varied. For summary purposes, answers were categorized and quantified in the chart below.
19. What is your age?

A total of 194 respondents answered this question and 217 skipped it. Of those 194 who answered, 45 percent (89) selected “61 to 80 years old”; 24 percent (47) selected “46 to 60 years old”; twenty-one percent (41) selected “26 to 45 years old”; 6 percent (13) selected “19 to 25 years old”; 1 percent (3) selected “13 to 18 years old”; and 0.5 percent (1) selected “81 or over.”
20. What best describes your gender?
A total of 194 respondents answered this question and 217 skipped it. Of those 194 who answered, 50 percent (97) selected “Female”; 44 percent (86) selected “Male”; 5 percent (10) selected “Prefer not to say”; and 0.5 percent (1) selected “Prefer to self-describe.”

![Gender Distribution Chart]

21. What best describes your race/ethnicity?
A total of 187 respondents answered this question and 223 skipped it. Of those 187 who answered, 40 percent (67) responded “White”; 25 percent (47) responded “Prefer not to say”; 3 percent (5) responded “Hispanic or Latino”; 2 percent (4) responded “American Indian or Alaskan Native”; 2 percent (4) responded “Asian or Asian American”; 1 percent (2) responded “Black or African American”; 1 percent (2) responded “Native Hawaiian or Pacific Islander”; and 3 percent (5) responded “Other (Please specify).”

![Race/Ethnicity Distribution Chart]

22. What is the primary language spoken in your home?
A total of 174 respondents answered this question and 237 skipped it. Of the 174 who answered, 97 percent (170) entered “English”, and 3 percent (4) entered another language. The four non-English languages were Portuguese (1), Bulgarian (1), Indian (1), and Spanish (1).
23. **What is your annual household income?**

A total of 173 respondents answered this question and 238 skipped it. Of the 173 who answered the question, 21 percent (37) selected “Between $15,000 and $29,999”; 17 percent (30) selected “Between $50,000 and $74,999”; 15 percent (27) selected “Between $30,000 and $49,999”; 15 percent (27) selected “Between $75,000 and $99,999”; 12 percent (22) selected “Between $100,000 and $150,000”; 10 percent (18) selected “Under $15,000”; and 6 percent (12) selected “Over $150,000.”
Bus Driver Interviews

Cape Cod Regional Transit Authority (CCRTA) CRTP Update

Bus Driver Interview Subjects (Combined 8/4 and 8/6 Meeting Notes)

Coverage/Route Alignment

- (8/4/20 group) Coverage is pretty comprehensive, always a few people that will complain but pretty good
- (8/4/20 group) Replaced Hyannis loop with crosstown which cut off a little bit of Main street so those customers do complain, but they are covered by Sandwich Line (less frequent but adequate service for this area)
- (8/6/20 group) Big picture – routes do a good job and hit the major places where needed
- (8/6/20 group) Route 6A (state road) is not covered past Brewster (FLEX covers some)
  - May be some issues with trees overhanging road, but could possibly use a cutaway vehicle
  - Year round service – Yarmouth Port may have some riders.
  - Start at Courthouse in Barnstable to Brewster so it would connect to other routes on both ends
- (8/6/20 group) No coverage in North Falmouth near 28A continuing South, but it’s hard to get into (year round)
- (8/6/20 group) Used to have service along 130 down through Sandwich to Mashpee (year round)
- (8/6/20 group) Lost funding for the Hyannis Loops and switched downtown service to a crosstown – don’t think it works well for passengers going from west end of Hyannis to Grocery
- (8/6/20 group) Airport used to be a “by request” destination, now the Villager goes there every time, not sure its needed.

Stop Placement/Spacing

- (8/6/20 group) Flag down may only be 200 meters from the stop, sometime need to wave riders up or down the street to get them to board at better location
- (8/6/20 group) Not all riders are trained to wave, hard to know if someone is on a cell phone if they are trying to catch bus or not
- (8/6/20 group) Need flashlight or phone with light to see at riders at night
- (8/6/20 group) When drivers cover a different route they don’t recognize the regular riders, regular riders may get used to not hailing down the bus when they have a regular driver that knows them.
- (8/6/20 group) FLEX at Orleans rotary, can only stop at designated stops, can’t do flag stops on state highway. Stops are over mile apart. First time riders want to get off, drivers need to know ahead of time or they may have already gone well past preferred location. (P&B drops off anywhere even on State highway)

Route Timing
• (8/4/20 group) FLEX - Summer Ridership when busy the times work better. But the rest of the time there is a 15 minute window just sitting at Stop & Shop, sit at Maurice’s Market too, to avoid getting ahead of schedule customers don’t like waiting mid-route.
• (8/6/20 group) Every route has little areas that get off, Sealine can sit in a lot of traffic on busy day, but off-season might have to wait for a while at Mashpee Stop & Shop
• (8/6/20 group) After shoulder season stop running Saturdays and Sundays, regular customers stop seeing the routes as frequently
• (8/6/20 group) On Flex some drivers like to leave Provincetown a few minutes late (up to 5 minutes) because if not you have to sit at odd locations when bus runs early

Transfers

• (8/6/20 group) Pass or Transfer Tickets needed – WHOOSH trolley is the only one, some customers have to run in and get the other ticket and then run back out to transfer which can be an issue during peak
• (8/6/20 group) Use a lot of driver to driver communication to call ahead for customers concerned about a transfer. But next bus can only wait until 5 past.
• (8/6/20 group) Transfers at Hyannis are generally effortless if routes are on time, issues are seasonal or away from Hyannis.

What would encourage more people to ride CCRTA?

• (8/6/20 group) Need to market better to younger group. App is great, need to have it at transportation center, could cut back scheduling costs if there was a focus on using that. Not sure who all is using app (seasonal or year round riders, try to tell everyone).
• (8/6/20 group) Wednesday senior free promotion is good. One customer went from Yarmouth to Market Basket on Wednesday to access lower cost groceries.
• (8/6/20 group) Some form of advertising/information kiosk/pamphlets available at courthouse is not a bad idea (for everyone that loses their license).
• (8/6/20 group) FLEX Route to Provincetown is a great deal compared to parking, everyone should use it. Can park in Orleans and use it. Drivers are telling friends and customers to use it.
• (8/6/20 group) Riders w/J1 Student Visas have a good sense of how to use transit, how do you change American perception?

Service Expansion Priorities

• (8/4/20 group) Some regular passengers want more weekend service off-season, not sure how feasible
• (8/6/20 group) H2O and Sealine get busy in summer, could offer more service on those but people don’t wait that long for a route. (20 minutes)
• (8/6/20 group) Biggest complaint is lack of Sunday service – Could offer two morning runs and two evening runs for H2O on Sundays and that would accommodate most work/shopping needs.
• (8/6/20 group) Off Season Service? Most routes (H2O, Villager, Sealine) are pretty similar off-season, the only big change is Provincetown, which isn’t as necessary, maybe longer spans

Passenger Crowding / “Leave-behinds”

• (8/4/20 group) No leave behinds
• (8/4/20 group) Some COVID-level “Crowding” i.e. want to provide space for social distancing and limit standees
• (8/6/20 group) Sometimes bike capacity issues, racks only handle 3 bikes – side rack? Can’t load onto the bus.
FLEX/ Route 6 has good bike lanes, and there is room for bikes on the bus.

- (8/6/20 group) No issues with Sandwich – H2O might get crowded, but no leave behinds
- (8/6/20 group) Flex during Oyster Festival in Wellfleet (no parking in Welfleet) need the big buses for that

**High Ridership stops/passenger amenities**

- (8/6/20 group) Woods Hole

**Fares**

- (8/6/20 group) Perception is really good. Fares haven’t gone up in years and service is much cheaper than parking/alternate modes. Most kids have a CharlieCard, problem is they lose them
  - Drivers should write names on cars when they sell them.

**Vehicles/Maintenance**

- (8/6/20 group) Vehicles with cracked windshield issue can’t be used for night runs, visibility is very bad with headlights
- (8/6/20 group) Maintenance issues have to be written up, and sometimes additional follow-up is needed
- (8/6/20 group) 2-way radio picks up a lot of conversation between driver and customer that doesn’t need to be broadcast to other buses, possible issues with customers hearing driver communication (esp. re. mobility pickups)
- (8/6/20 group) Buses should all have LED lights so they have better visibility at night, even if only the right side lit better

**Traffic/Bottlenecks**

- (8/4/20 group) Traffic on Route 6 is an issue going out of Wellfleet, left heading back into Provincetown. (Dunkin Donuts)
- (8/4/20 group) Route 28
- (8/4/20 group) Main Street in Hyannis lost a lane due to CORONA Virus, Slow but moves
- (8/4/20 group) FLEX Route in Wellfleet bottlenecks from 2 to 1 lane, can back up a mile or two, but there are no alternate routes.
- (8/6/20 group) Agree re. left at Welfleet Dunkin – driver got in trouble for passing it when not seeing anyone, riders were waiting in their car in the parking lot. But left turn here can add several minutes.
- (8/6/20 group) Bottlenecks not bad in off season
- (8/6/20 group) Seasonal issues – July 4th can be an hour behind, but difficult and very few places to get bus only lanes or queue jumps to get past it.

**Operational Safety**

- (8/6/20 group) Difficult right turn coming out of Stop and shop on 6A through Rotary to Main
  - Issue is for the H2O turning at CVS, the Flex bus goes straight and is okay here
  - City just redid this area, with new striping and now it is hard not to hit parked cars in the last space on Main – needs a no-parking zone here.
  - When an issue, bus has to go up a quarter mile and turn around
- (8/6/20 group) H2O route on Old Harbor Road is very tight, but there are lots of riders here
• (8/6/20 group) Bridge lane widths are an issue
  o Worst for Gilligs on Sagamore Bridge - busses are 10’2” and lane widths are 10’0”
  o Used to put on hazards and drive in middle. But state troopers started pulling them over because they aren’t technically a wide load. P&B still go down middle with flashers but they are bigger.
  o Recent 4-car pileup with bus, bus not at fault, someone trying to pass bus collided with on-coming traffic.
  o No other driver trainer but 1 is willing to take new recruits over Sagamore bridge, how you drive is different every time based on what’s around
  o Limited ability to use smaller vehicles – Sagamore route makes an am and pm school run which get pretty full.
  o Construction won’t start until 2025..
  o Bourne Bridge is better (only use for training use cutaways for that) and recent changes to Bourne Run help.
• (8/6/20 group) Downtown Falmouth is very tight with a Gillig,
  o Several little accidents (hitting parked cars and mirror dings, etc.)
  o Gifford Street to Katharine Lee Bates Road parallel might be worth looking at
• (8/6/20 group) People parking over line into street, blocking bus lanes - need better parking enforcement – in all downtown areas but especially Osterville
• (8/6/20 group) Dangerous Stop for the Flex run out of Provincetown at Marconi Station (2 stops after Duncan Donut) traffic lights on route 6 – stop is 100 feet past the light and is too close, needs to move back or before the light, otherwise cars get green or yellow and may rear end bus needing to stop. (Wilson Road)

Bus Stop Access Issues

• (8/4/20 group) Stop and Shop in Harwich, near bank there are low hanging tree branches drivers have to go around
• (8/4/20 group) Passengers have to have flashlight lit to get flag down or buses can’t see.
• (8/6/20 group) Have to slow down to see if anyone is in the shanty (bus shelter) at SeaCoast Shores Blvd. in East Falmouth – its the only thing around but it is set back behind trees and difficult to see
• (8/6/20 group) Patriot Square in South Dennis, not supposed to stop at Stop and Shop anymore due to congestion cars parked in fire lane, etc.
  o Policy to not stop is not well communicated
  o Pick up passengers at the side of Marshall’s instead
  o Need an exclusive marked stop here
• (8/6/20 group) ADA stops on narrow roads – Stop in the driveway to try to help with ADA access, no one wants to be stuck behind the bus

Terminal issues/Relief areas

• (8/4/20 group) Bathroom at Hyannis Transportation Center is terrible, junkies shooting up, only 2 toilets, women’s have a separate locked are inside the public women’s access limited to staff with key. Men use shared public restroom.
  o (8/4/20 group) Changing tables included would never be used based on the bathroom condition.
• (8/4/20 group) Not everyone using HCT are riders, there is frequent use by homeless individuals, there has been some better enforcement recently
• (8/4/20 group) Instead of Vending machines would be better to lease out that space to a nicer vendor, coffee, burgers, etc.
• (8/4/20 group) Noticed that picking up several riders a few blocks from HCT not sure if near home or if riders are purposefully waiting for buses to leave HCT. Would be nice air-conditioned place to wait if better maintained.
• (8/4/20 group) P-town is well run
• Small (couldn’t hear) Pond Visitor Center closed
• (8/4/20 group) Stop and shop east Harwich arrive 5 minutes early have to sit, but missing transfers on the other end in Orleans could use the extra 5 minutes not sitting. May spend another 5 minutes getting to hospital. 5 minutes at terminal could be used for relief.
• (8/6/20 group) Some disagreement about facilities at HTC, building is good, upkeep and people in bathrooms are the issue, some overgrown/dead vegetation leaves negative first impression. Took the doors off the stalls once.
• (8/6/20 group) Woods Hole in Summer, working with Steamship authority and traffic, try to coordinate with ferry routes but have to park where allowed by SSA